THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY®

18345 Ventura Boulevard, Suite 210, Tarzana, CA 91356

Phone (818) 996-1863 ~ Fax (818) 996- 6198

www.austc.us

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This catalog covers the academic year 2012-2013 that starts (Aug. 15, 2012) and ends (Aug. 7, 2013) – all information included is current. Any additions or changes shall be posted on our website www.austc.us and will show in this catalog either as an update or insertions.

01 – THE UNIVERSITY

01.01 - MISSION STATEMENT

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY is a (501) (C) (3) Nonprofit Public Charity Educational Facility provides domestic and international adult students with opportunities to earn bachelor's, Master's and doctoral degrees in recognized academic programs to acquire competencies and apply the knowledge and skills needed to participate and function effectively in modern communities.

01.02 – BPPE APPROVAL

As a private postsecondary educational facility officially operates at the state of California, The American University for Science and Technology had submitted its application for BPPE's approval since July 2010, BPPE wasn't exist before that date.

AUSTC's application for approval is currently in processing and has not been finalized yet. Any questions a student may have regarding this catalog that have not been satisfactory answered by the university may be directed to:

The Bureau for Private Postsecondary Education
2535 Capitol Oaks Drive, Suite 400,
Sacramento, CA 95833,
www.bppe.ca.gov ,
Phone Number: (916) 431-6959
Fax Number: (916) 263-1897

01.03 - ADDRESS:

All activities of The American University for Science and Technology including admissions, administrative processing, records keeping, academic activities and training sessions other than industrial and laboratory activities are all provided at the main premises located at the following address:

18345 Ventura Boulevard, Suite 210,
Tarzana, CA 91356,
Phone (818) 996-1863

Additional and updated information may be found on www.austc.us

01.04 - FACILITIES AND EQUIPMENT

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY provides distance education leading to bachelor, master's and doctoral degrees in Business and Technology Management, Engineering, Sciences, Education; and Social and Behavioral Sciences, that are all depend on written knowledge obtained from specified textbooks, Multimedia materials including fully recorded lectures and training sessions.. Even though, AUSTC policies and procedures as well as the applied regulations confirm the fact that students hold responsible for purchase and possession of any required software, hardware and a reliable method to access the internet for services, utilities and communication with faculty. AUSTC location is equipped enough to assure very well managed systems and successful mentoring and follow-up, as well as a convertible classroom platform that to provide a reliable faculty/students meeting area when needed, auditorium and monitored exam area.

01.04.01 - Classroom Equipment

- Fully equipped and air conditioned classrooms with tablet lecture chairs accommodates up to (28) students in the main classroom, while the extension accommodates up to 50 students.
- Area is convertible to be utilized as meeting area, small lecturing area, chalkboard and overhead presentation area, monitored testing area, or a computer lab.
- Ceiling mounted state of art projector with computer connectivity and sound output
- Large dropdown projection screen
- Portable Transparencies' overhead projector
- Lecturer's laptop connection to projector, with all required software,
- Fully equipped PC dedicated and installed in the classroom for presentation, internet access, local area network access and other uses.
- Classroom dedicated printer
- Wide Area Network (WAN) with state of art dedicated fileserver and media share capabilities
- Free Wi-Fi for students and lecturer's access
- A number of laptop computers for students' use within premises
- Chalkboard and related supplies
- Lecturer's podium and laser pointing devise

01.04.02 - Distance Education Facilities

- Dedicated Website www.austc.us
- Electronically featured access to rich libraries of subjects, knowledge and resources
- Audio/Video online conferencing facilities with presentation capabilities to allow sharing class attending and online attending groups at the same session
- Access to a wide range of courseware including video/audio recorded lectures, text, and media
- Well established communication and messaging services
- Dynamic student informative web pages with access to faculty contact
- Email connectivity and file submission services
- Online bookstore, online Courseware, online unlimited video lectures covers all subjects that are currently offered as well future subjects, online congress open book library, online National Academies resources, and Internet Public Library. Those facilities provide unlimited resources for students, researchers and faculty members.
- Well trained and experienced faculty staff and mentors

01.04.03 - ELECTRONIC COMMUNICATION

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY uses electronic communications. Most interaction occurs through AUSTC's website (www.austc.us).

Students must be able to navigate the World Wide Web. The University recommends using the most recent version of MS Internet Explorer. To view the tutorials and orientation information in the Students' area, Microsoft Windows Media Player is required. The University may provide documents that require Adobe Acrobat Reader, that can be free downloaded through this URL address: http: //www.adobe.com/products/acrobat/readstep2.html .

The American university for Science and Technology issues an Email address for each and every new Student under the university's official domain name. This method assures reliable email access with the capability to send and receive attached files. Spam blockers must be directed to accept email from AUSTC domain. Students are responsible to check their email and the Students website weekly at least to assure timely contact between the faculty and the student and to report and hardness while taking his/her subjects.

The American university for Science and Technology diligently attempts to prevent the spread of computer viruses by employing the latest virus detection software on all University owned computer systems; however, the University makes no guarantee related to the unintentional propagation of computer viruses that may go undetected by its virus detection software.

The American university for Science and Technology will not be held liable for any direct, indirect, incidental, special, consequential or punitive damages of any kind, including but not limited to; loss of data, file corruption, or hardware failure, resulting from the effect of any malicious code or computer virus unintentionally transmitted.

01.05 - METHOD OF INSTRUCTION

The American University for Science and Technology adapts the following cluster of methods combined together to create a uniquely engineered method that assures self-pacing, independent learning, monitored performance and accurate academic assessment:

- Distance interaction through electronic communication and virtual face to face online bidirectional conferencing
- Textbook based study plans
- Ongoing assignments and assessment
- Evening and weekends classroom scheduled faculty/student meetings
- Credit is granted by assessment of student unsupervised preparation of comprehensive reports on the subject or setting for a standard three hours monitored exam per subject.

The University assigns a faculty mentor for each course, update student's data to reflect mentors' information and inform each student about his assigned faculty members and mentors. Subject submission may be through group lecturing/training or one/on/one method.

All faculty members and students are encouraged to utilize the university assigned email address as their primary communication method.

Faculty and students are required to review and interact with the university assigned email address in daily bases to assure timely contact.

Mentors start communication with the assigned student's group via a series of email messages and held scheduled online conferences on each subject based on predesigned plan under supervision of area's professor.

All assignments are transmitted between the university and students via email or file upload.

Faculty discusses the assignment in timely manner with students during the scheduled online bidirectional conferences. Students may not post any completed assignment or subject report for scoring unless coordinated with the assigned faculty mentor regarding completion and submission date.

Students are responsible for purchasing their own textbooks either as a bulk package or gradually while completing requirements.

The American University for Science and Technology selected and established a virtual bookstore on its website. All references and materials are selected from an actual list on that book store to assure availability for students.

The selected bookstore carries all references including new, used and e-books that are all available to be purchased directly through university's website.

The university may purchase and send textbooks and materials on behalf of international students if service is requested after full payment of purchasing and shipment costs.

Instructions, communications, questions, and answers are all handled personally between the student and faculty mentor through email communication, online conferencing and life class room evening and weekend meetings.

As the course progresses, the student incrementally submits assignments to the faculty mentor for evaluation and scoring in coordination with subject faculty.

The focus of active self-education is to encourage Students to incorporate course knowledge into their personal situations while faculty mentors play as resources providers and facilitators in the process of education.

Students demonstrate mastery of the course material and its personal relevance by completing assignments, term papers, examinations, or participating in class discussion forums as required. Upon completion of the course requirements and submission of comprehensive report of set for monitored exam, the student receives a course score and grade.

The university confers the degree after successful completion of all academic, financial and administrative requirements. Graduation ceremonies are held in Los Angeles, California and announced on the website and in direct email messages to graduates.

01.06 - HOUSING

Due to the nature of applied distance learning method that does not require students to physically attend full time programs, the American University for Science and Technology does not currently have any responsibility to find or assist a student in finding housing, while it is possible to voluntarily assist visiting students to find cost effective housing near to the university premises or location of activity that student is visiting to attend (e.g. graduation ceremonies).

01.07 - VISA

The American University for Science and Technology admits students from other countries to distance learning degree programs. The university neither provides visa services, nor will vouch for student status.

All international students from countries where English is not the native language, students are required to proof English language proficiency. The American University for Science and Technology is registered member with ESL/TOEFL.

Our TOEFL code is (7370)

Applicants are required to successfully pass the Test of English as a Foreign Language (TOEFL)

The American University for Science and Technology provides English language services to domestic students including English Composition I and English Composition II that leads to proficiency level.

English language classes are attended study that requires students to physically show in classroom for three semester units for each program. Cost is $120.00/Semester Unit.

The American University for Science and Technology currently considers English as the only academic and administrative language. No instruction will occur in a language other than English.

01.08 - BANKRUPTCY CLERANCE STATEMENT

The American University for Science and Technology

- DOS NOT have any pending petition in bankruptcy
- IS NOT operating as a debtor in possession
- HAS NOT filed petition within the preceding five years
- HAS NOT had a petition in bankruptcy filed against it within the preceding five years that resulted in reorganization under chapter 11 of the United States Bankruptcy Code (11 U.S.C. Sec. 1101 et seq.)

01.09 - FACULTY:

To manage distance education method and to assure the best academic support to students and researchers, including domestic and international students' communities, The American University for Science and Technology implements faculty pool structure which is a collection of professors, associates and assistants working together in faculties who are not at the same location but actually distributed in and out of the united states. The objective of such a structure is to assure existence of faculty members at student's area. Students are assigned to faculty members as mentors at their residence area.

Current Faculty Pool:

Faculty	Degree	Position	Last Name	First Name	Mid Name	Location
Accounting	MS.	Lecturer I	Oladoyinbo	S.	O.	Nigeria
	Ph.D.	Professor	Abou Khair	Walid	kamel	Lebanon
	MBA	Lecturer	Afuye	Bamidele	John	Nigeria
	Ph.D.	Ass Professor	Fakoya	M.	B.	Nigeria
	MBA	Senior Lecturer	Abed	Iyad	Issa	UAE
	MS.	Lecturer I	Adu	B.	O.	Nigeria
	MBA	lecturer II	Coker	Olufemi	S.	Nigeria
	MS	Asst. Professor	Sotto	Christian	A.	California
	MBA	Ass Professor	Rodriguez	Robert	E.	California
Business Administration	Ph.D.	Professor	Tawfiqe	Mohamed		UAE
	MBA	Senior Lecturer	Taha	Samer	Mohamed	UAE
	MBA	Senior Lecturer	Fathallah	Tarek		Lebanon
	Ph.D.	Professor	Langvardt	Guy		California
	MBA	Senior Lecturer	Jumaa	Muid	Megdad Taher	Qatar
	Ph.D.	Asst. Professor	Wazni	Imad	Ramez	Lebanon
	Ph.D.	Professor	Aubry	Michael		California
	MS	Lecturer	Langer	Haward		California
Construction Management	MBA	Senior Lecturer	Elghaly	Elbahaa	Mohamed	UAE
E-Commerce	Ph.D.	Professor	Langvardt	Guy		California
Economics	Ph.D.	Professor	R. Marlovic	Mirjana		Serbia
Finance	MS	Senior Lecturer	Damilola	Alfred		Nigeria

	MS.	lecturer II	Ikedigbo	N.C.A.		Nigeria
Financial Management	Ph.D.	Professor	Kabalan	Shareen	Nabel	Lebanon
	MBA	Lecturer	Shoboyejo	Johnson	Sunday	Nigeria
HealthCare Management	Ph.D.	Professor	Dabbaseh	Khairo	Issa Mofleh	UAE
	MBA	Senior Lecturer	El Khouwayer	Hassan	Hussien	UAE
International Business	MS	Senior Lecturer	Chokor	Elsayed	Ahmad	Lebanon
	Ph.D.	Asst. Professor	Abou Shakra	Ibrahim		Lebanon
	Ph.D.	Professor	Yassin	Mohamed	Fouad	Lebanon
	MBA	Lecturer	Kashoola	Basma	Waleed Hazim	UAE
Management	Ph.D.	Professor	Saifi	Walid	Maamoun	Lebanon
	Ph.D.	Professor	Sanni	A.	D.	Nigeria
	MBA	Lecturer II	Ojo	Adeyinka		Nigeria
	MBA	Lecturer I	Omitgun	T.	K.	Nigeria
	Ph.D.	Professor	Gbadmusi	Kolawole	Taofeek	Nigeria
	Ph.D.	Professor	Bechenati	Ussama	Abdelrahman	UAE
Managerial Economics	Ph.D.	Professor	Kyauzil	Imani	Silver	Nigeria
Marketing	Ph.D.	Professor	Karam	Tony	Asaad	Lebanon
	MBA	Lecturer	Osibanjo	Ibirinke	Temidayo	Nigeria
	MBA	Asst. Professor	Rajamani	Umesh		California
	Ph.D.	Asst. Professor	Matta	Roy	Georges	Lebanon
Public Administration	Ph.D.	Professor	Lababidi	Mohamed		Lebanon
	Ph.D.	Professor	Omran	Fares	M. Abdulbagi	Cairo
Quality Management	Ph.D.	Professor	El Kheder	Mohamed	Saleh	UAE
Risk Management	Ph.D.	Professor	Hadifah	Said	Said	Lebanon
Strategic Management	Ph.D.	Professor	Omolaja	Muhammad	A.	Nigeria
Technology Management	Ph.D.	Professor	Souri	Musa	Abdulhamid	Lebanon
	Ph.D.	Professor	Adetunji	Olayida	Rasaq	Nigeria
Curriculum and Strategies	Ph.D.	Faculty Mentor	Mousa	Mohamed	Hassan	Qatar
Educational Leadership	Ph.D.	Professor	Fatieh	Javid		California
	Ed.D.	Professor	Obikoya	J.	O.	Nigeria
	Ed.D.	Professor	Parmer	Michael	J.	California
Educational Management	Ph.D.	Professor	Adenuga	Alaba		Nigeria
Higher Ed. Leadership	Ed.M.	Ass Professor	Harper	Andre	M.	California

Technology Leadership	MA.	Ass Professor	Trapp	Jason	Jed	California
Project Management	Ph.D.	Asst. Professor	El Cheikh	Ayad	Adnan	Lebanon
Civil Engineering	Ph.D.	Professor	Fadous	Sarkis		Lebanon
	MS	Senior Lecturer	Khouri	Charbel		Lebanon
	MS	Senior Lecturer	Hanna	Hadi	El Khouri	UAE
	Ph.D.	Professor	Choueiri	Elias	Michel	Lebanon
	Ph.D.	Professor	Yassin	Fayez	Hussien	UNRWA
Computer Science	MS	Asst. Professor	Karbasforoushan	Haleh		California
	MS	Asst. Professor	lannone	Kim		California
	Ph.D.	Professor	Abdulwahab	Mohamed	E	California
	MS	Lecturer 11	Adegboye	Adegboyega		Nigeria
Electrical Engineering	MS	Ass Professor	Yang	QI		California
Engineering Management	MS	Ass Professor	Hazemi	Hossein		California
Mechanical Engineering	Ph.D.	Professor	Mahmoud	Khaled	Abdel Aziz	UAE
	Ph.D.	Professor	Adetunji	Olayide	Rasaq	Nigeria
	MS.	Professor	Markovic	Dusan		Nigeria
English Language	Ph.D.	Teacher	DeSorbo	Barbara	M	California
	MS	Teacher	Vinh	Henrieta		California
	Ph.D.	Teacher	Zak	Yanni	Zafiropoulos	California
	Ed.M.	Teacher	Vergara	Jean		California
Fine Arts	BA.	Faculty Mentor	Thomas	Mischel	Rene	California
General Studies	MS	Teacher	Bohm	John	S.	California
	MA.	Teacher	Lakire	Sara	Elizabeth	California
History	MA.	Teacher	McMahan	Richard	A.	California
	MA.	Lecturer	Cottam	Wendy		California
Humanities	MA.	Teacher	Roemer	Donald	Patrick	California
	MA.	Teacher	Dew	Robert		California
	MA.	Teacher	Soltani	Ashkan		California
	Ed.M.	Teacher	Romero	Christina		California
Mathematics	MS.	lecturer II	Ogunsimiro	O.	A.	Nigeria
	MS	Teacher	Fogel	Charles	J.	California
Political Science	MA.	Ass Professor	Craigg	Elizabeth	A.	California
Psychology	MS	Teacher	Drazich	Chandra	K	California

Religious Studies	Th.D.	Lecturer I	Ragazzo	Jan	Maria	Nigeria
Social Studies	MA.	Teacher	Colombo	Barbara	Taylor	California
Spanish language	MS	Faculty Mentor	Maghakyan	Anahit		California
Clinical Psychology	Ph.D.	Professor	Halawi	Sawsan	Salim	Lebanon
	Psy.D.	Professor	Roukos	NOEL	Emil	Lebanon
	MS	Teacher	Mongan	Cymry		California
	Ph.D.	Ass Professor	Drabinsky	Daniel	Aaron	California
	MA.	Senior Lecturer	Shbaro	Mohammad	Wassim	Lebanon
	Ph.D.	Professor	Stacey	I.	Gould	California
Counseling Psychology	Ed.D.	Ass Professor	Chusid	Hanna		California
Educational Psychology	Ph.D.	Professor	Al Haddad	Rima	Gebran	Lebanon
Educational Psychology	Ph.D.	Professor	Rabac	Ken		Nigeria
MFT	Ph.D.	Asst. Professor	Cunningham	Carolyn		California
	MA.	Teacher	Bracht	Carrie	J.	California
	MA.	Lecturer	Razzaghmanesh	Roz		California
Organizational Psychology	Ph.D.	Professor	Adekola	B.	H.	Nigeria
Psychology	MA.	Teacher	Pitts	Meera	Bhagauti	California
	Psy.D.	Professor	Miller	Leonard		California
	MA.	Asst. Professor	Andreev	Alenika		California
Social Psychology	Ph.D.	Ass Professor	Seligman	Ross	A	California
Sociology	Ph.D.	Professor	Abo El-Nasr	Medhat	Mohamed	UAE
	Ph.D.	Professor	Ali	Rafif	Ahmad	Lebanon
	Ph.D.	Professor	Yildirim	Kemal		Turkey
Medical Informatics	MBA	Lecturer	Dr. Al Sharif	Yahia		UAE
	MBA	Lecturer	Dr. Ismail	Amr	Abd El Azim	UAE
	MBA	Senior Lecturer	Dr. Samer	Elias	Aboud	KSA
	Ph.D.	Professor	Abdulwahab	Mohamed	El Sayed	California
Nutrition	MS	Lecturer	Alaween	Ra'ed	Barakat	Lebanon
	MS	Senior Lecturer	Ayoub	Dania	Hassan	Lebanon

02 - ACADEMIC AND ADMINISTRATIVE POLICES AND PROCEDURES

02.01 - INSTITUTIONAL EFFECTIVENESS AND STUDENT OUTCOMES ASSESSMENT

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY is committed to its mission and to continuous improvement of its programs and services. Assessment is the ongoing process of evaluating Student academic achievements. Students, faculty mentors, staff, and external constituencies are asked to participate in assessment and institutional effectiveness activities that may include, but are not limited to, examination, performance assessments, questionnaires, surveys, focus groups, and interviews; education journals, portfolios, case studies, comprehensive exams and follow-up studies.

02.02 - STUDENT RESPONSIBILITY

As a prospective student, you are encouraged to review this catalog prior to signing an enrollment agreement. You are also encouraged to read The School Performance Fact Sheet, which must be provided to you prior to signing an enrollment agreement.

It is the Student's responsibility to be familiar with the information presented in this reference, and to know and observe all regulations, policies and procedures relating to the program he/she is pursuing. In no case will a regulation be waived or an exception will be granted because Students pled ignorance of or contend that they were not informed of the regulations and procedures. Responsibility for following all policies and meeting all requirements and deadlines for degree programs rests with the Student.

02.03 – COMPLAINTS:

A student or any member of the public may file a complaint about this institution with The Bureau for Private Postsecondary Education by calling Toll Free (888) 370-7589, or by completing a complaint form, which can be obtained on the bureau's internet web site (www.bppe.ca.gov).

02.04 – STUDENT RIGHTS AND GRIEVANCE PROCEDURE

(Does not apply for dismissal or grade appeals)

In the event that a Student has a complaint, grievance or dispute with the American University for Science and Technology regarding University procedures, decisions, or judgments, the Student has a right to seek a resolution through the formal avenues of appeal and redress. When a grievance reaches the level for invoking the procedures detailed below, it is assumed that efforts to resolve the dispute by other personnel, at other levels, or through Student Affairs, have not been satisfactory.

Step 1: Notification. The Student must notify the related faculty mentor, staff or administrator in writing, postmarked and sent to the attention of related person at the physical address of the university: 18345 Ventura Boulevard, Suite 210, Tarzana, CA 91356; or emailed no later than 15 days after the occurrence, with the basis for the grievance, the details of the matter, and the sought-after remedy requested. The involved person shall notify the student of receipt and processing commencement, and respond with a decision in writing within 15 days of receipt notification date. Copies of complaint, receipt notification and decision will be sent to Student Affairs.

Step 2: Appeal. If the remedy requested is denied, or the involved person does not respond within 15 days after the notification receipt as of Step 1, the Student may appeal in writing, postmarked or emailed within an additional 15 day period, directly to the academic department chair or responsible administrator. The department chair or administrator and the Student Affairs Advisor will review the material and grievance and render a decision within 15 days of receipt of the Student's appeal. However, failure to initiate a Step 2 appeal within the 15-day time-frame means that the Student accepts the Step 1 decision as final and that the matter is closed.

Step 3: Final Decision. If the appeal remedy requested is denied or the cognizing person does not respond within 15 days after the Step 2 notice has been sent, then the Student may appeal in writing, postmarked or emailed within an additional 15 day period, directly to the President. The President will discuss with the department chair(s) or person(s) involved to investigate the matter and will render a decision within 15 days of receipt of the Student's appeal. The President's decision shall be final for the institution. However, failure to initiate a Step 3, appeal within the 15-day time-frame means that the Student accepts the Step 2 decision as final and that the matter is closed.

02.05 - Student's Rights beyond the Institution's Grievance Procedure:

If the complaint is not resolved after exhausting the institution's grievance procedure, the Student may file a complaint with

California State Bureau for Private Postsecondary Education:

Physical Address: 2535 Capitol Oaks Drive, Suite 400,

Sacramento, CA 95833

Mailing Address: P.O. Box 980818,

West Sacramento, CA 95798-0818

Phone Number: (916) 431-6959

Toll Free: (888) 370-7589

Fax Number: (916) 263-1897

Website is **http: //www.bppe.ca.gov**.

E-mail: **bppe@dca.ca.gov .**

03 - ADMISSION REQUIREMENTS

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY offers Bachelor's, Master's and PhD. degree programs designed to meet the academic and work plan objectives for adult students and professionals. Meeting admission requirements is an indicator that the student is qualified to enter and pursue the degree program, however, the University emphasizes that success depends upon dedication to studies.

03.01 - ADMISSION PROCEDURES

All Students are required to complete and submit the online pre-admission distance learning questionnaire that collects details about applicants'

(1) Technology Requirements
(2) Technology Comfort Level
(3) Expected Study Time dedication and Schedule
(4) Learning Style

Applications must be submitted using the on-line application form. After an initial review of submitted information, and if the submitted details meet the minimum requirement for admission to the degree of concern, the applicant receives a notice of intent via his/her email address with instructions to submit additional documents by mail, fax or e-mail; and to pay a nonrefundable application fee

Applicants must request official transcripts be sent directly to AUSTC from prior colleges and universities during the application process. Only official transcripts will be evaluated. An academic review of submitted materials takes place after confirmation of application fees' payment. Applicants who apply for financial aid through a third party lender must provide all necessary documents as per lender's rules, to be processed along with enrollment process.

03.02 – CREDIT TRANSFER ACCEPTANCE

Applicants have the right pursue credit transfer to the American University for Science and Technology based on obtained degrees, postsecondary education or training.

1. Even though AUSTC had not entered into an articulation or credit transfer agreement with any other college or university, submitted documents are considered as basis for possible credit transfer if the granting facility is a state approved, accredited or an international facility that is an equivalent to us recognized degree granting facilities.
2. If the source is not recognized or the obtained education does not qualify for any credit transfer, the applicant must be officially informed and sign consent of agreement to proceed with enrollment without credit transfer.
3. If the facility transferring from is acceptable, an in-depth review must be performed to determine the value of obtained education and/or training measured in semester units.
4. Life experience does not count and it is prohibited to weaver a degree or to combine acceptance to more than a program at a time.

5. Review report must be submitted to admission committee chaired by the university's register for control and to assure that the evaluation is performed as per rules and regulations.
6. Registrar's office applies the current credit transfer policy:
   - 88 semester units maximum credit transfer to a bachelor's degree program
   - 8 semester maximum units credit transfer to Master's degree program
   - 8 semester units maximum Credit transfer to doctoral program

03.03 - BASIS OF ADMISSION TO DEGREE PROGRAMS

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY applies an open enrollment policy. Application for admission can be submitted and processed at any time during the year.

The "Application for Admission" is available through http: //www.austc.us website. Potential students may submit an Initial Applications online, email scan of educational documents and ID to admissions@austc.us with details on the degree program of concern.

Undergraduate Programs - Admission to the Bachelor's degree programs requires submission of evidence demonstrating that the applicant has passed and obtained a high school diploma or a state-authorized examination recognized as an equivalent, or other equivalent recognized by the Department of Education indicating that the applicant is qualified to study at the postsecondary level. Engineering programs requires a proof of successful completion and graduation from an engineering associate degree at the field of concern. A postsecondary two years associate degree from a recognized facility is evaluated as a successful transfer of (60 to 80) semester units based on the obtained program in length and received credit.

Graduate Programs - Admission to the master's degree programs requires a bachelor's degree, or equivalent, and admission to doctoral degree programs requires a master's degree or an equivalent from an accredited or a state approved institution. The equivalent to a bachelor's degree is 120 semester credits of postsecondary coursework from an accredited or state approved college or university, or an international equivalent, including a minimum of English composition I and II and a college-level mathematics course. Official transcripts documenting prior academic work and the award of the degree used as the basis of admission must be sent to the Registrar.

Resume – A resume is valuable and shows an organized presentation about the applicant but experience included does not count as credit equivalent.

Official Transcripts - Must be sent directly from the Registrar of applicant's prior colleges or universities to the registrar at THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY during the application process. Only official transcripts will be evaluated.

International Transcripts – Applicants submitting foreign credentials will be subject to credentials' evaluation. Official documents of all coursework must be sent directly to AUSTC from the awarding institution. If the transcripts are in a foreign language, an English translation is also required. Foreign credentials are required to be evaluated by a recognized independent agency that charges $100.00 per transcript. AUSTC may send received documents to the

evaluator after applicant's payment of fees. AUSTC shoulder's mailing costs without any additional costs to be paid by the applicant.

03.04 - EXPERIENTIAL CREDIT

The American University for Science and Technology does not consider experience as basis to award credit. This policy is based on the university's believe that documents may list activities and periods of times doing some kind of work, but does not show the value or gained knowledge and training. Credit is only awarded to recognized and well documented education and/or training.

03.05 - PERSONAL STATEMENT OF INTENT

The personal statement of intent will be used by the Admissions Committee to assess your writing ability, your readiness to pursue an academic degree in higher education, and your potential for success as a Student at THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY. The personal statement of intent is an important evaluative component of the admission process.

Applicants are required to submit an essay for the personal statement of intent as part of the application. It should be at least 500 but not more than 1000 words. The statement consists of two parts.

PART I

Provide a one-page statement about your background, education and professional experiences that you feel prepare you for degree studies.

PART II

Respond to the following three questions:

1. What do you expect from your education?
2. How do you anticipate your education will affect your life?
3. What personal qualities do you feel are most important to your academic success?

Personal statement of intent is used by academic advisor in assessing the applicant's writing skills and to provide guidance for subsequent writing course enrollment if needed.

Personal Statements are evaluated using the following Characteristics of effective writing:

1. Focus – establishes a clear purpose.
2. Content – information is relevant and fully developed.
3. Organization – has a logical order and sequence.
4. Style – effective word choice and professional tone.
5. Conventions – spelling, grammar, writing mechanics.

03.06 - BASIS OF ADMISSION TO NON-DEGREE PROGRAMS

Enrolled students, graduates and external applicants may be interested in taking certain subject(s) from the published undergraduate or post graduate subjects' list for refreshment,

continuing education or to meet certain requirements other than obtaining a degree. Interested personnel may use the online application indicating "NON DEGREE" and just enter the subject's code. No official transcripts or Personal Statements are required. Applicant will be advised of any prerequisites based on detailed properties of the selected subject.

03.07 - ENGLISH LANGUAGE PROFICIENCY

AUSTC's curriculum is primarily writing-based, so Students must have a competent knowledge of English communication skills for admission to the University and to benefit from instruction offered by THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY. All course textbooks and materials are printed in English. Assignments are to be submitted in English. Many course assignments include written papers. Faculty mentors correspond with Students and critique coursework in English. Students who demonstrate poor language skills upon admission will be required to take additional English composition courses. Also, re-evaluation of writing skills may be necessary during the Student's program if faculty report difficulty in communicating with the Student or assess deficient writing skills. If a Student is required to successfully complete English composition courses, they may be required to put their current course(s) on hold. This applies to both undergraduate and graduate Students.

Applicants whose primary language is not English, applicants from countries where English is not the primary language, applicants who earned degrees from universities where English was not the language of instruction, or applicants THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY has found to be deficient in English are required to submit the results of the Test of English as a Foreign Language (TOEFL). A minimum TOEFL score of 450 on the written test (or a minimum TOEFL score of 133 on the computer test) is required for undergraduate applicants, and a minimum TOEFL score of 500 on the written test (or a minimum TOEFL score of 173 on the computer test) is required for graduate applicants. Applicants can make arrangements for this test by writing to TOEFL/TSE Service, P.O. Box 6151, Princeton, NJ 08541-6151, USA. Information is also available on the Internet at www.toefl.org. Test scores must be sent directly from the testing agency to the Registrar at THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY.

03.08 - ACCEPTANCE TO THE UNIVERSITY

Upon receipt of the Application for Admission materials, the University will evaluate the applicant's experience and goals to assure that the desired degree program is appropriate. The academic evaluation includes a review of the applicant's educational intent, prior college work, professional experiences, future goals, and writing skills.

Applicants will be notified of their admission status and the requirements for the degree program. The Applicant has 30 days to accept his/her enrollment, request and make payment arrangements. Upon acknowledgement of the degree plan and receipt of initial payment, the Student is enrolled in the University. Tuition payment options are specified in the enrollment agreement.

03.09 - NON-DISCRIMINATION POLICY

AUSTC welcomes all adult Students and does not discriminate on the basis of race, color, national origin, religion, disability, gender, age or in any other way in any of its policies,

practices, or procedures involving applicants, Students, faculty, employees and the public.

03.10 – CREDIT TRANSFERABILITY TO OTHER FACILITIES:

The transferability of credits you earn at the American University for Science and Technology is at the complete discretion of an institution to which you may seek to transfer.

Acceptance of the degree you earn in the American University for Science and Technology is also at the complete discretion of the institution to which you may seek to transfer.

If the credits or degree that you earn at this institution are not accepted at the institution to which you seek to transfer, you may be required to repeat some or all of your coursework at that institution. For this reason you should make certain that your attendance at this institution will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending the American University for Science and Technology to determine if your credits or degree will transfer.

The transferability of credits earned at other facilities' transfer to The American University for Science and Technology are a subject for pre-admission evaluation. Even though credits obtained at accredited and state approved universities are generally acceptable, and assessment may be conducted to examine equivalency to AUSTC applied curriculum and syllabus.

The American University for Science and Technology has not entered into an articulation or transfer agreements with any other college or university at the time of making this catalog. Any change shall be inserted to this catalog and shall be posted on our web site www.austc.us when occurs.

03.11 - ACCREDITATION AND EMPLOYMENT:

Accreditation is voluntarily and is not required for a university to operate and grant recognized degrees, while it is a trusted measure of quality. Many accredited universities are in a level much less than others that are not yet accredited for a reason or another.

Private sector's employers conceder degrees obtained from non accredited institutions as good as those obtained from accredited institutions, as long as the degree holder is capable to proof that he has the required knowledge and training.

Governmental agencies in the United States of America including the state of California have a policy to fill their governmental positions with graduates of accredited institutions only.

If student's objective is to join or to get promoted at a governmental job in the United States of America, he/she should seek enrollment and graduation from an accredited university because state approval shall not be enough for such a particular purpose.

The above does apply to international students and/or graduates as each respected country has its own laws and regulations. International students are advised to check their targeted

work destination's laws to assure that attending The American University for Science and Technology shall meet their goals.

04 TUITION AND FEES

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY, based on its mission, goals and as a public charity nonprofit organization, keeps tuition fees within an affordable level and applies easy payment plans in addition to institutional fee waiver to allow those of limited income, pursue post-secondary education without financial strains.

AUSTC adapts Tuition per credit basis. The student pays only for the credit taken at the American University for Science and Technology after credit transfer from other facilities as determined during admission and enrollment process.

When the student qualifies for credit transfer, he/she pays $5.00 for each transferred semester unit. Financial plan recipients are exempted from credit transfer fees.

Institutional fee waiver covers 25% to 75% of tuition fees based on student's financial need and is determined at enrollment time after full review of submitted documents as detailed later in this catalog.

Financial fee waiver recipients are eligible for interest free payment plan equal to all other students, which is an another assistance to allow them pay the remaining tuition after deduction of granted assistance in easy monthly payments.

Student's enrollment agreement clearly shows the required and transferred credit; and the related payable tuition and fees.

04.01 - Tuitions scale during the period covered by this catalog:

Bachelor's degree programs	Distance	$120.00 / Semester Unit
	Traditional	$200.00 / Semester Unit
Master's / Doctoral degree programs	Distance	$240.00 / Semester Unit
	Traditional	$400.00 / Semester Unit
Training and Single Course Programs		$200.00 / 16 Clock Hours

04.01.01 Estimated Charges for Full Program Tuition:

Bachelor's degree	Distance	(120 Semester Units)	120 X 120 = $14,400.00
	Attended	(120 Semester Units)	200 X 120 = $24,000.00
Master's Degree	Distance	(44 Semester Units)	44 X 240 = $10,560.00
	Attended	(44 Semester Units)	44 X 400 = $17,600.00
Doctoral Degree	Distance	(60 Semester Units)	60 X 240 = $14,400.00
	Attended		60 X 400 = $24,000.00

If student is qualified for credit transfer, tuition shall be calculated to only cover credits taken at AUSTC. Maximum transferable credits are 88 credit for undergraduate programs, and only 8 for graduate programs.

04.02 Tuition Payment Options:

In general, all payment options are interest free, while a discount is granted to students in case of full program tuition payment in advance or full program tuition payment within three months from date of enrollment. (Institutional Fee Waiver recipients are eligible.)

Full Payment in Advance: Lerner decides to make a full payment of tuition for the whole program as one payment in advance and at enrollment time receives 10% of his/her tuition as advance payment discount.

Two Equal Monthly Payments in Sequence: Lerner decides to pay his/her full program tuition in two sequential monthly payments within the first three months after date of acceptance as one payment at enrollment month and the second payment within thirty days from first payment; receives (5%) as pay in advance discount.

Interest free Monthly Payment Plan: this payment plan is offered to all students unless full payment with special discount is selected, and it is applied spontaneously without any other processing than signing the enrollment agreement and acceptance of financial responsibilities as included.

- In this plan, the student pays 20% of the full program tuition as a down payment;
- Remaining value is to be paid in 16 equal interest free monthly payments.
- If student completes all the academic requirements, his/her remaining unpaid balance becomes immediately due, and must be paid before graduation processing.

Administrative Fees

Credit Transfer	$10.00	Per Transferred Credit Unit
Course Drop/Cancel Fee	$25.00	Per course
Course Add Fee	$25.00	When adding a course
Withdrawal Fee	$50.00	To be paid at time of withdrawal submission
Check Return or Deny	$25.00	Per Check
Reevaluation of Credit Transfer	$50.00	If occurs after enrollment
Official Transcript Fee	$10.00	Per transcript
Diploma Replacement Fee	$50.00	Per Diploma

04.03 - STUDENT'S RIGHT TO CANCEL

04.03.01 the student has the right to cancel his/her enrollment agreement and obtain a refund of charges paid through attendance at the first class session, or the seventh business day after enrollment, whichever is later.

04.03.02 to cancel an enrollment, the student is required to notify the registrar's office in writing. The date the notification is postmarked or emailed is the effective date of the withdrawal/cancellation notice.

04.03.03 Cancellation of enrollment and refund of any access tuition paid to the University must be based on a written, dated and signed notice from the student to the registrar.

04.04 – TUITION AND FEES REFUND POLICY

04.04.01 Students who withdraw from the program through attendance at the first class session, or the seventh business day after enrollment, whichever is later will obtain 100% refund of all paid charges.

04.04.02 If student withdraws after the first class session or after the seventh business day after enrollment, a prorated refund pursuant to section 94919(c) or 94920(d) or 94927 of the CALIFORNIA PRIVATE POSTSECONDARY EDUCATION ACT OF 2009 (California Education Code, Title 3, Division 10, Part 59, Chapter 8) shall apply no less than the total amount owed by the student for the portion of the educational program provided subtracted from the amount paid by the student, calculated as follows:

(1) The amount owed equals the daily charge for the program (total institutional charge, divided by the number of days or hours in the program), multiplied by the number of days student attended, or was scheduled to attend, prior to withdrawal.

(2) All refundable amounts paid by the student in excess of what is owed as calculated above shall be refunded.

(3) Except as provided herein, all amounts that the student has paid shall be subject to refund unless the enrollment agreement and the refund policy outlined in the catalog specify amounts paid for an application fee or deposit not more than $250.00, books, supplies, or equipment, and specify whether and under what circumstances those amounts are non-refundable.

(4) For purposes of determining a refund under the Act and this policy, a student shall be considered to have withdrawn from an educational program when he or she withdraws or is deemed withdrawn in accordance with the withdrawal policy stated in this catalog.

04.04.03 If an institution has collected money from a student for transmittal on the student's behalf to a third party for a bond, library usage, or fees for a license, application, or examination and the institution has not paid the money to the third party at the time of

the student's withdrawal or cancellation, the institution shall refund the money to the student within 45 days of the student's withdrawal or cancellation.

04.04.04 the institution shall refund any credit balance on the student's account within 45 days after the date of the student's completion of, or withdrawal from, the educational program in which the student was enrolled. For purposes of this subdivision and section 94919(d) of the Code, "day" means calendar day.

04.04.05 the institution shall maintain a cancellation and withdrawal log, kept current on a monthly basis, which shall include the names, addresses, telephone numbers, and dates of cancellations or withdrawal of all students who have cancelled the enrollment agreement with, or withdrawn from, the institution during the calendar year. Note: Authority cited: Sections 94803, 94877 and 94885, Education Code. Reference: Sections 94885, 94919 and 94920, Education Code.

All refunds are based on the amount due for the current courses and previous courses attempted, less a withdrawal processing fee of $50. The University will refund the amount of any overpayment. The Student is responsible for paying any amount due to the University as a result of underpayment. Application fee, STRF and Credit Transfer Processing fees are not refundable.

04.05 - STUDENT TUITION RECOVERY FUND (STRF)

Enrolled student must pay the state-imposed assessment for the Student Tuition Recovery Fund (STRF) if all of the following apply:

1. The student is a California resident, or is enrolled in a residency program, and prepay all or part of tuition either by cash, guaranteed student loans, or personal loans, and

2. Student’s total charges are not paid by any third-party payer such as an employer, government program or other payer unless the student has a separate agreement to repay the third party.

The student is not eligible for protection from the STRF and is not required to pay the STRF assessment, if either of the following applies:

1. The student is not a California resident, or is not enrolled in a residency program, or

2. The student’s total charges are paid by a third party, such as an employer, government program or other payer, and you have no separate agreement to repay the third party."

State of California created the Student Tuition Recovery Fund (STRF) to relieve or mitigate economic losses suffered students who are California residents, or enrolled in a residency program attending certain schools regulated by the Bureau for Private Postsecondary Education.

The student may be eligible for STRF if he/she is a California resident or is enrolled in a residency program, prepaid tuition, paid the STRF assessment, and suffered an economic loss as a result of any of the following:

1. The school closed before the course of instruction was completed.

2. The school's failure to pay refunds or charges on behalf of a student to a third party for license fees or any other purpose, or to provide equipment or materials for which a charge was collected within 180 days before the closure of the school.

3. The school's failure to pay or reimburse loan proceeds under a federally guaranteed student loan program as required by law or to pay or reimburse proceeds received by the school prior to closure in excess of tuition and other costs.

4. There was a material failure to comply with the Act or this Division within 30 days before the school closed or, if the material failure began earlier than 30 days prior to closure, the period determined by the Bureau.

5. An inability after diligent efforts to prosecute, prove, and collect on a judgment against the institution for a violation of the Act.

05.01 Distance Instruction Policy and Procedure

Distance education does not require the physical presence of students and faculty at the same location but provides for interaction between students and faculty by means as telecommunication, correspondence, electronic and computer augmented educational services and postal service

(5) Educational programs offered through distance education are appropriate for delivery through distance education methods;

a. The American university for science and technology assures that all degree programs are within the range of self-monitoring and self-pacing to cover subjects that need the minimum or no one-on-one training at all.

i. School of business and technology management offers bachelor's, master and doctoral degree programs at concentrations that does not require one on one training or hands on practice.

ii. School of Education offers only post graduate degree programs in areas of concentration that are general in nature and aim to polish teacher's abilities and prepares them to take over administrative and leadership positions at the field of basic and postsecondary education as well as leadership of technology education.

iii. School of Social and Behavioral Science offers post graduate degree programs to professionals who have received formal training and already licensed to practice. The only undergraduate offered is in general psychology.

iv. School of Engineering does not accept fresh high school graduates but only offers bachelor's degree programs to associate engineers who have completed an associate engineering degree program and received all the required one-on-one and hands-on engineering technology training. Those associate engineers are an appropriate ground to start from towards a graduation with all the required academic engineering knowledge, added to the previously obtained training and experience to end with a successfully graduated engineer, ready for the work market and safely practices the profession

(6) Assessment of each student, prior to admission, in order to determine whether he/she has the skills and competencies to succeed in a distance education environment.

a. All Applicants must complete and submit to the university a pre-admission questionnaire that will assess student's willingness and ability to complete the program and that he/she meets the technology requirements, technology comfort level, dedicated learning time and schedule; and learning style.

b. All undergraduate degree programs applicants are required to proof ability
    i. TOEFL exam pass level is required to proof English language fluency
    ii. Show last obtained transcript with concentration on related subjects
        1. English language, mathematics and arts proficiency for those applicants to the school of Business and technology management
        2. English language art and proficiency for applicants to Psychology
        3. English language and mathematics and computer driving proficiency for applicants to computer science
        4. Associate degree at field of engineering concentration and proof of hand on training for applicants to engineering programs.
c. All postgraduate degree applicants are required to submit a transcript at the same field of concentration from an accredited or state approved school showing GPA not less than 2.5 out of 4

(7) Insurance that the materials and programs are current, well organized, designed by faculty competent in distance education techniques and delivered using readily available, reliable technology;
    a. The American University for Science and Technology maintains a comprehensive database application to manage a listing of all offered degrees' subjects and each department chairman carries out the responsibility of updating textbook listing to assure currency of the textbook that is required not to be more than two years old unless the specific reference is the latest on the subject.
    b. Listing is very well organized and managed by department chairman in coordination with department's professors and associate professors.
    c. If a staff member creates a textbook or a reference on the subject, it is published through an official publisher and pushed to the market in order to be available to our students as well as the community.
    d. Subjects are applied utilizing state of art methodologies including video lectures library, online views of open books, e-books; and video conferencing

(8) Meaningful interaction with faculty who are qualified to teach using distance education methods;
    a. Faculty staff members are academically qualified with enough background implementing distance learning methodologies.
    b. The American University for Science and Technology procures and implements state of art internet communication methods to assure excellent direct contact between faculty and students.

c. All students are assigned email address under the domain name of the university and are arranged in groups related to degrees and subjects to simplify invitation to online lectures and conferences as well as webinars.
d. Bidirectional contact is available to students and faculty through email or messaging system as well as regularly held video conferences.

(9) Maintaining clear standards for satisfactory academic progress;
a. Enrolled students are classified into groups, and assigned to a faculty mentor per group for each subject.
b. Each faculty mentor directly communicates with his assigned students and represents the university at all academic and administrative aspects related to his subject.
c. Every subject curriculum includes a number of assignments to be completed within a given time frame each.
d. Each completed assignments is reviewed and scored at the same or next business day of submission, and reported to subject's professor who audit the scoring, issue a letter grade and submit the result to the chief academic officer who approves the grade and refer the document to the registrar in order to response to the student.
e. Faculty mentor discusses the results of assignments with his/her group of students during the very next conference after last submitted and scored submission on the current assignment.
f. At end of subject's course work, students are individually given the choice either to submit a comprehensive report on the subject for review scoring and grading or to set for three hours monitored exam.
g. Monitored exams are held at school's premises or in student's respected areas or countries of residence after coordination to assign a monitor, who may be a faculty mentor at student's area/country or an assigned monitor from school's alumni.
h. All answers must be submitted to the subject's assigned mentor in a secured envelop without any access from the monitor whose job is only to monitor the exam and assure that it is done fairly and within the preset three hours' time limit.
i. Comprehensive reports minimum pass score is 75% while monitored exams are treated traditionally.

(10) Timely complete student evaluations of learning outcomes by duly qualified faculty, which are appropriate for use with the distance education methods used, and evaluated by duly qualified faculty.
a. Qualified faculty review and score student's submitted assignments, comprehensive reports or monitored exam answers immediately at the same or next business day of submission.
b. Scores are submitted to subject's professor for review and grading

c. Scores and grades are reported to Dean/CAO for approval and submission to registrar for insertion to student's academic historical record
d. Graduation projects, thesis and dissertations are reviewed by a formed committee on the subject and reported to professor then to CAO
e. Elapse days from submission to response back to student with results must be in a period of time that does not exceed ten business days from the date of submission.

(11) Employment of a sufficient number of faculties to assure that

a. The institution's response to, or evaluation of, each student lesson is returned to the student within 10 days after the lesson is received by the institution;

b. The institution's response to, or evaluation of, each student project or dissertation is returned to the student within the time disclosed in the catalog; and

c. The American University for Science and Technology Maintains a computerized record of the dates on which lessons, projects, and dissertations were received and responses were returned to each student.

05.02 - Specific Provisions for Instruction Not in Real Time

(A) The American University for Science Technology as a provider of distance educational programs where the instruction is not offered in real time transmits the first lesson and any materials to any student within seven days after the institution accepts the student for admission, receipt of student's signed enrollment agreement and receipt of student's first payment.

(b) The student has the right to cancel his/her enrollment agreement and receive a full refund before the first lesson and receipt of materials, if any.

- Cancellation is effective on the date written notice of cancellation is sent to the university.
- The American University for Science and Technology shall make the refund pursuant to rules and as described in the signed enrollment agreement.
- If the student has received his/her first lesson and materials before an effective cancellation notice was received at the registrar's office, the American University for Science and Technology shall make a refund within 45 days after the student's return of the materials.

(c) The American University for Science and Technology shall transmit all of the lessons and other materials to the student if the student:

- Has fully paid for the educational program; and
- After having received the first lesson and initial materials, requests in writing that all of the material be sent.

(d) If The American University for Science and Technology transmits the balance of the material as the student requests, the institution shall remain obligated to provide the other educational services it agreed to provide, such as responses to student inquiries, student and faculty interaction, and evaluation and comment on lessons submitted by the student, but shall not be obligated to pay any refund after all of the lessons and material are transmitted.

06 - RECORDKEEPING AND RECORDS' RETENTION POLICY

06.01 - RECORDKEEPING:

(1) The American University for Science and Technology maintains a safely secured computerized database system that includes all students' financial and academic data in a controlled environment following the maximum safety and confidentiality data mining methods.

a. Secured storage area is assigned in the network dedicated server
b. Access to data is secured and maintained with a sophisticated access control mechanism
c. Regularly generated backup files are saved separately in a fire proof secured area

(2) Financial and Academic documents are filed in separate charts while copies of financial records are filed together with Hard copies of academic documents in a the unified record filing system that is maintained in parallel with the paperless computerized archive.

(3) The American University for Science and Technology adapts unit file linked references filing system that issues a serial number to each student at his/her first enrollment and considers this issued number as the unit file number and the unique reference link for this particular student's documents.

(4) Any document related to the same student carries the same reference link number as the main identifier, even if a local serial identifier is issued to any activity record.

(5) All records related to the same person are filed in the same chart following in chart partitioned organization filing method that makes a section for personal data,

another for financial, a third for administrative and the main section for academic documents.

(6) If the same person returns for another degree program, a new serial and degree code are assigned and an out-guide is created and inserted at the filing location related to the new serial number with a pointer to the main reference link number to assure double referencing.

(7) Actual academic documents are chronologically filed in the same chart separated according to degree program, while financial and administrative documents are filed in a straight forward chronological filing method.

(8) All hard copy records are securely maintained and filed in an access controlled area to assure confidentiality of students' personal, financial and academic information.

(9) Both of paperless filing server and paper records filing archive are located at the same location of the university at 18345 Ventura Boulevard. Suite 210, Tarzana, CA 91356.

06.02 – RECORDS' RETENTION

(1) Records are retained in the active filing area for 50 years from date of enrollment and subsequently transferred to a fireproof and safe accessible warehouse

a. Transcripts as well as all other academic data files and hardcopies are permanent and may not be destroyed
b. Records transfer to warehouse is only a space saving process, and is not a transfer to an inactive filing,
c. All records either in the active files or safe accessible warehouse are maintained in a method to keep them all secured, fire protected and retrievable

07 - ACADEMIC SUPPORT SERVICES

07.01 - AUSTC LIBRARY (ELECTRONIC EDUCATION RESOURCE CENTER)

The Electronic Education Resources Service (ELRS) assists undergraduate and graduate Students, as well as, faculty mentors and University staff in their research activities. The ELRS provides the following library services.

Online Courseware

This collaborative service in coordination with MIT provides an access to a wide range of knowledge classified to majors and schools of study. This service is provided to all students, faculty and guests absolutely free of charge. Users may access the services from AUSTC website to browse a listing leads to a rich source of lectures, discussions, guidance and exams in formats of TEXT, HTML, PDF in addition to Media records of lectures as audio/video or audio only. The audio/video provides an actual recording of lectures and discussions on the subject that allows actual attendance and ability to control and repeat the lecture up to full understanding which is a step ahead of actual attendance that only provides a onetime chance of living attendance.

Congress Library (the Online Books)

This service is a very handy source of knowledge that provides an access to online books, where student, researcher, faculty or guest may browse an index and select a major of concern to display an up to date listing of available books and information resources. Users may browse or download the subject of concern absolutely free of charge.

National Academies Press

This is a major source of knowledge that provides an extensive variety of textbooks, articles, research papers, and literatures. User may select a major topic to visit a very well managed list of materials. Users may read the selected book online, order a hardcopy and pay for purchase right from AUSTC website, or just pay a very little value to download a DPF format of the same book to be a valuable EBook reference on user's desktop or laptop.

Internet Library

This service is available to public, and AUSTC provides it as a link to allow students, researchers, faculty and guests get an access to the valuable source of knowledge which is highly appreciated as a very handy tool and source of supporting knowledge. Information is classified by subject to simplify searching and obtainment of knowledge from its main source.

07.02 - STUDENT AND ALUMNI SERVICES

Student and Alumni Services supports Students in achieving their educational goals by introducing Students to AUSTC practices and procedures, monitoring Students' progress to insure studies are continuing and assisting Students with non-academic concerns. Once a Student graduates from AUSTC, Student and Alumni Services will offer continued support through the AUSTC Alumni Service which provides Alumni resources, and allows Alumni to share news, published works, promotions and wisdom with current AUSTC Students.

07.03 - ACADEMIC ADVISOR

An academic advisor is assigned to guide the Student through the chosen program of study. The academic advisor approves all course requests to ensure that courses taken will meet the degree program requirements. Students should contact their academic advisor about academic questions related to the degree program.

07.04 - FACULTY MENTOR

Each enrolled student is assigned a faculty mentor for each course at THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY. The name of mentor and the mentor's contact information is on the Course Registration Information (CRI), sent to student via e-mail from the Registrar. Students are required to contact their faculty mentors any time they may have questions about course assignments, course concepts, or related information. The preferred way of contacting mentors is via the AUSTC email address assigned to each mentor and included in (CRI). Students may also choose to contact mentors via phone.

07.05 - STEPS TO EARNING YOUR DEGREE

The University assigns a faculty mentor for each course. Once tuition has been paid, accounting notifies the registrar to issue the course and to send an email to Student giving the course details and syllabus. Students may not post an assignment to AUSTC prior to the course start date. Students are responsible for purchasing their own textbooks either as a bulk package contains all textbooks or gradually while completing requirements. In order to simplify textbook purchasing, AUSTC coordinated with MBS direct and established a virtual book store that provides textbooks using subject reference, with availability of used books that makes book purchasing less costly. An additional service is provided to international students Due to the fact that of having difficulties finding textbooks in their respected countries, AIUC in coordination with MBS Direct sends each international student a package includes all textbooks and materials during enrollment process and after payment of costs.

Additional instructions, communications, questions, and answers are handled personally between the Student and faculty mentor by class discussion forums, AUSTC's messaging system, email, telephone, or by fax. As the course progresses, the Student incrementally submits assignments to the faculty mentor for evaluation and feedback.

The focus of active self-education is to encourage Students to incorporate the course knowledge into their personal situations using faculty mentors as resources and facilitators in the process of education. Students demonstrate mastery of the course material and its personal relevance by completing assignments, term papers, examinations, or participating in class discussion forums as required. Upon completion of the course requirements, the Student receives a course grade.

When all academic, financial, and administrative requirements are completed, the degree is conferred. Graduation ceremonies are held in Los Angeles, California; Students and guests are invited to attend.

07.06 – PROGRAM AND COURSE START DATE

The program start date is the start date of the first course for the Student's program. Courses begin the first of each month. Once the 16 week course term has begun, a Student can only add/drop courses within the first 7 days of the course term. After the allowed add/drop period, a Student cannot begin a new course until the start of the next 16-week term. Students may request their next term course at any time during their current term (up to the 21st day of the last month of the current term). The course outline / syllabus will be available on the Student's subject package as soon as the course is issued. However, course work cannot be submitted until the course start date.

07.07 - COURSE LENGTH AND COMPLETION

Courses are to be completed within a 16-week term. Students may complete the course early with the mentor's approval and begin another course before the 16-week term is complete.

If a course is not completed within the 16-week term, and the mentor does not post a final grade within 5 days of the course end date, an Incomplete will automatically be issued. If an Incomplete is issued, the Student must complete the course and a final grade must be posted within the next 25 days.

If the mentor posts no final grade, an "F" will automatically be issued.

An Incomplete grade does not extend the course end date.

08 - ACADEMIC POLICES

08.01 - ENROLLMENT

A Student is expected to maintain enrollment until the program is completed. Enrollment in a course means that the Student has requested and made payment arrangements for his/her next course, and the course has been issued with the course starting on the next qualifying start date of the new course term. See SECTION 04.05 for information on Breaks and SECTION 04.06 for information on Leave of Absence.

Students must be current in their financial obligations to the University in order for a course request to be processed. Students who are delinquent in payments cannot receive accounting approval for their next course. Failure to maintain enrollment will result in dismissal of the Student.

Students utilizing tuition assistance programs through their employers must ensure timely receipt of necessary forms and funds in order to maintain active enrollment in their AUSTC studies.

08.02 - BREAKS

A Student may take a "break" between course terms (a single "break" is defined as a period of 30 days between the ending of a course and the start of the next course). Up to three breaks (i.e., 90 days) are allowed within a Student's individual three-term cycle. After a break, Students will continue with their degree program and will restart their program on a new course term cycle.

If a break is longer than 90 days, the Student will be withdrawn. When resuming studies, after a withdrawal, the Student will need to re-apply and be subject to the terms and conditions at the time of restart.

08.03 - LEAVE OF ABSENCE

Students may take one 30-day Leave of Absence per 16-week term. The Request for a Leave of Absence must be submitted through the Course Review section of the Students' website (Request Leave TAB), and include sufficient information on the reason for the leave (maximum of 250 characters). A Leave of Absence will not be granted in the final month of a course term, except in emergency situations approved by the department chair. Taking a leave of absence while enrolled in a course term WILL NOT extend the course end date; however it will prevent the Student from being dismissed for lack of progress because there has been no instructional activity. Students may not submit coursework during a leave of absence.

08.04 - Students in Active Military

MLOA - A Military Leave of Absence (MLOA) is available, with advisor approval, to Students who are deployed by the United States military and whose specific critical assignments will not permit them to continue their AUSTC studies for a period of time. A copy of the Student’s military orders, a letter from his/her commanding officer, or other documentation will be required to support the request for military leave.

If the MLOA is for more than 30 days, the Student must be withdrawn from the course. Students on an MLOA will have access to their Student site except the Student will not have the ability to upload assignments and will not have access to the databases. When they return from their critical military duty, the Student will re-enroll and be reissued the course(s), with the same faculty mentor if available. Students on military leave return to their studies without financial penalty.

08.05 - ATTENDANCE REQUIREMENTS / INSTRUCTIONAL ACTIVITIES

Because the University offers courses through distance education, it does not require formal, on-campus or classroom attendance and therefore does not have a physical residence requirement. The Student is required to enroll in courses and make progress towards completing the degree requirements in order to maintain active status.

Students are expected to be involved in a minimum of one scheduled instructional activity per week. To meet this expectation, Students should make contact with the faculty mentor on a weekly basis through one of the following methods:

- Posting of an assignment (e.g., paper, project, etc.) in the Course Work area of the Student's course website
- Posting of an assignment to share with the faculty mentor and other Students in the course website (e.g., a review of a book or article, a proposal for a research study, a presentation in the form of a PowerPoint presentation file, reporting on participation in a research study, etc.).
- Participation in a threaded discussion in the course website (e.g., commenting on a discussion question posted by the faculty mentor, providing feedback to another Student, etc.).
- Viewing instructional materials (e.g., a PowerPoint presentation prepared by the faculty mentor, a streaming audio or video presentation, etc.).

Students must use the AUSTC messaging system to contact faculty mentors. Students who fail to make contact within the time period of one month may be withdrawn from the course by AUSTC.

Military Students:

Military Students may have special circumstances that inhibit their ability to academically participate on a weekly basis. Such Students should contact their faculty mentor, through AUSTC's messaging system, to establish a schedule for submitting their coursework. The Student should also notify Student Affairs (and their academic advisor so that AUSTC can provide additional support, as needed, for the Student to complete his/her academic program.

08.06 - ACADEMIC INTEGRITY

All assignments, exams, term papers, and other projects submitted to faculty mentors must be the Student's own work. Faculty may submit coursework to Third party for originality evaluation. The submission of another person's work represented as that of the Student's without properly citing the source of the work will be considered plagiarism. To avoid plagiarism, student should not "copy and paste" into any assignments without using quotation

marks and citing in APA format the source of the material.

The faculty mentor has the prerogative to challenge a Student's work, and to ask a Student to resubmit an assignment or to retake an exam. Students may be asked to have a proctor present when they take an exam. Faculty mentors have the academic freedom to reject questionable work and not assign a grade to the corresponding assignment. When the first incident of plagiarism is discovered, faculty mentors may assign an unsatisfactory grade for the assignment or for the entire course.

The first incident of plagiarism will result in a formal warning. AUSTC may conduct an investigation to review past assignments submitted by the Student in this and prior courses. AUSTC reserves the right to change past grades awarded by the University if plagiarism is subsequently found on assignments for such courses. If additional incidences of plagiarism are found, the Student will be informed of the cases and Academic Standards will review the situation.

Any further incident of plagiarism detected by a faculty mentor will result in the academic dismissal of the Student.

08.07 - STUDENT INTERACTION

There are many ways for Students, AUSTC staff, and faculty mentors to interact with each other:

- Bulletin Board – General comments, questions or concerns-may be posted on the Bulletin Board by the general public, Students, faculty mentors and AUSTC staff.
- Discussion Forum – Ongoing general topic conversations may be viewed and commented on by Students, faculty mentors and AUSTC staff.
- Course Forum – The course forum is a "course specific" discussion area where the course faculty mentor and fellow classmates post comments related to the specific course topics.
- Message Center – This communication system is for all electronic messages between Students, faculty mentors, and University staff. Primarily established as an online application and modified to be through cellular messaging which is much convenient to staff and students.
- Student List – Directory listing of all AUSTC Students who have chosen to display their information available to Students, faculty mentors and AUSTC staff.
- Mentor List -- Directory listing of all current faculty mentors available to Students, faculty mentors and AUSTC staff.
- Staff Directory – Directory listing of the AUSTC staff available to Students, faculty mentors and AUSTC staff.

08.08 - STUDENT CONTACT INFORMATION

Students must report any changes to their contact information, including address, telephone numbers, or email address. Name changes must be documented and coordinated with the Registrar in writing.

AUSTC will not release any Student information except for the Student's name, degree earned and date of graduation, without a written authorization from the Student specifying the information to be provided and the approved recipient(s).

Note: A Student who does not want his or her name, degree or other information used in the University newsletter, graduation program or other publications, must notify the Registrar in writing.

08.09 - SEMESTER CREDITS

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY awards credit earned based on semester credits. Most courses carry 4 semester credits. It is expected that a Student taking a 4-credit course will need to spend approximately 9-12 hours per week on education experiences such as reading and study, research, faculty mentor-Student interaction, demonstration of defined education outcomes through assignments, papers and projects; examinations; class discussions; and assessment of performance.

08.10 - TEXTBOOKS

Appropriate textbooks, course syllabi, and course outlines are used for each course. Required texts are indicated in the course outline and on the study plan by title and ISBN. Students are responsible for purchasing textbooks. AUSTC's online textbook supplier is MBS Direct. A direct link is available on the AUSTC website to the textbook provider source at http: //www.mbsdirect.net. Students only need to search by course code to order the correct book and edition. MBS Direct also offers previously-used books for some texts. MBS Direct provides international shipping and expedited shipping within 48 hours. Students having difficulty finding needed textbooks may seek university's assistance.

08.11 - COURSE MATERIALS TO INTERNATIONAL STUDENTS

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY adapts a policy of bulk textbook and materials order and supply to international students in coordination with a selected bookstore. International students may order their textbooks directly from the bookstore, or seek the university's assistance if they face any difficulty making the order.

If a student selects textbooks' purchase assistance, he/she is obligated to pay full costs of textbook purchase and services in advance after receiving total cost's determination.

08.12 – FREE REDISTRIBUTION OF DONATED TEXTBOOKS AND MATERIALS

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY has a charitable used book collection and redistribution program where students donate their used materials and the university gives them away free of charge to enrolled students until all distributed. Students may pick up the free materials or order them and pay shipping costs only as paid to courier.

08.13 - INTERNATIONAL STUDENTS STUDYING IN THE UNITED STATES

The American University for Science and Technology recognizes that distance Students may reside in locations that may not have an easy access to educational resources. Applied distance education methods assists international students to access unlimited libraries and video captured life lectures on all subjects through our website www.austc.us.

The American University for Science and Technology is not currently authorized to issue I-20 documents. International Students with a visa status other than F-1, as well as those F-1 visa Students attending and residents at another university approved as a study site for students who are not United States citizens, may be eligible for study at AUSTC.

An enrolled international student who is visiting the United States, is invited and welcomed to meet his/her academic advisors and department chair, but travel is not required.

The American University for Science and Technology does not require on-campus or classroom regular attendance and, therefore, does not have a physical residence requirement. The institution does not have housing facilities.

08.14 - GRADING SYSTEM

Unless otherwise specified for a particular department or program, the University awards letter grades in recognition of academic performance of each course. Grade points are used to calculate G.P.A.

A+	4.00 grade points
A	**3.75** grade points
B+	3.50 grade points
B	3.00 grade points
B-	2.75 grade points
C+	2.50 grade points
C	Lowest graduate passing grade 2.00 grade points
C-	1.75 grade points
D+	(undergraduate only) 1.50 grade points
D	Lowest undergraduate passing grade 1.00 grade points
D-	(Undergraduate only) 0.50 grade points
F	Fail 0.00 grade points
S	**Satisfactory** indicates completion of a dissertation course or practicum course with academic work equivalent to a B grade or better. The grade does not contribute to the calculation of G.P.A
U	**Unsatisfactory** indicates completion of a dissertation course or practicum course with academic work equivalent to less than a B grade. A Student who receives a "U" may not be allowed to continue with the program. The grade does not contribute to the calculation of G.P.A.
CX	**Cancel** indicates cancellation of a course requested by the Student before the course start date.
DR	**Dropped** course during the add/drop period (first week of the course session).
W	**Withdrawal** from a course requested by the Student within the first 2 months of a course session. The Student's request to withdraw from a course must be sent by AUSTC's messaging system to his/her academic advisor. After the first 2 months of a course session, but before the course end date, a withdrawal may be granted only with a passing status in the course or the department chair's approval. A Student may not withdraw from a course after the faculty mentor has submitted a grade.
I	**Incomplete** indicates that a Student has not satisfied the requirements for a course by the end date; a grade of Incomplete is entered unless the faculty mentor posts a letter grade. Thirty (30) calendar days later, the "I" grade changes an "F" grade unless the faculty mentor has posted a letter grade.
R	**Retaken**. An "R" grade is indicated on the transcript when the course grade has been superseded by a later grade. Only the later grade will be used in computing the G.P.A.

08.15 - WRITING SCORES

In addition to a content letter grade, a numerical writing score (1-4) will be given on each assignment with substantial writing. These writing standards are defined in AUSTC's Writing Rubric.

08.16 - DROP A COURSE

Students may drop a course during the first week of the course session. The Student may replace the dropped course with another course (see drop-add fee in Financial Information). The replacement course must be completed in the same course session, i.e. the course start and end dates of the replacement course will be the same as those of the dropped course.

Students who notify their academic advisor of their request to drop a course after the first week of the course session but prior to the end of the 2nd month will receive a "W" (Withdrawal) grade for the incomplete course. Students who drop a course after completing two months of a course session will receive a letter grade, A through F, based on the work completed to date.

08.17 - REPEATED COURSES

Any course in which a letter grade was earned can only be repeated one time.

THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY considers a grade of "D" to be the minimum passing grade for undergraduate courses, although an overall GPA of 2.0 (or "C") is required for graduation. A grade of "C" is the minimum-passing grade for graduate courses, although an overall GPA of 3.0 ("B") or better is required for graduation. A Student has the option of repeating the course or enrolling in an alternate course of equal credit (if such an alternate is available) that will meet the degree program requirements. The Student's academic advisor must agree with the course request. Whether the course is repeated or an alternate course is taken, the Student will be required to pay tuition for the course and to complete all course requirements.

If a course is repeated, the original course grade will be changed to an "R" (retaken) and only the later grade will be used in computing the cumulative grade point average. If an alternate course is taken, the grade for both courses will appear on the Student's transcript and both grades will be used in computing the cumulative grade point average.

08.18 - STUDENTS RIGHT TO APPEAL A GRADE

A Student may appeal a course grade issued by a faculty mentor. The appeal must be made to the faculty mentor from whom the grade was received in writing and must be postmarked or emailed no later than 15 days after the Student received notification of the grade. If the appeal is denied, or if the faculty mentor does not respond within 15 days after receiving the appeal, the Student may appeal directly to the department chair within an additional 15-day period. The department chair will render a final decision on the grade within 15 days after receiving the Student's appeal.

08.19 - SATISFACTORY ACADEMIC PROGRESS

Students at THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY must maintain satisfactory academic progress toward completion of their degree program. Satisfactory academic progress will be evaluated for all AUSTC Students on a quarterly basis. Students are considered to be making satisfactory academic progress if they meet all of the following conditions:

- Maintain a cumulative grade point average sufficient to meet graduation requirements. Undergraduate Students must maintain at least a "C" average, or 2.0 GPA on a 4.0 scale. Graduate Students must maintain at least a "B" average, or 3.0 GPA on a 4.0 scale.
- Complete at least 67% of the total number of AUSTC credits attempted with a minimum passing grade.
- Complete the AUSTC degree program within the maximum allowed number of attempted credits. At AUSTC, this is defined as no more than 150% of the number of credits required to complete a degree program. For bachelor's degrees, Students may take a maximum of 180 semester credits. For master's degrees, Students may take a maximum of 60 semester credits. The maximum number of semester credits includes the number of semester credits accepted in transfer from other institutions (i.e., the number of semester credits that will be applied towards the degree) plus the number of semester credits attempted at AUSTC, including any leveling courses required for graduate Students.
- All AUSTC credits attempted will apply towards the Satisfactory Academic Progress measures. Attempted credits include those courses receiving grades (A-F, S/U), as well as repeated, "R", withdrawal, "W", incomplete, "I", and in-progress courses, "IP". Cancelled "CX" and dropped "DR" courses are not counted as attempted credits. Grades of "I" (incomplete), "IP" (in-progress), "W" (withdrawn), "F" (failing), and "U" (unsatisfactory) are not considered passing. "D" grades are also not considered passing for graduate Students.

08.20 - PROBATION/DISMISSAL DUE TO LACK OF SATISFACTORY ACADEMIC PROGRESS

Students found not making satisfactory academic progress will be placed on probation or dismissed according to the following set of events:

- The first time a Student is found not making satisfactory academic progress, he/she will be placed on "Probation-1" status. The reason(s) for probation will be noted in the Student's academic record. The Student will have until the next quarterly review of Satisfactory Academic Progress to rectify the situation.
- If the Student is found not meeting satisfactory academic progress requirements in the next quarterly review, but the Student has made progress towards achieving the minimum satisfactory academic progress requirements, the Student may be placed on "Probation-2" status. The reason(s) for probation will be noted in the Student's academic record. The Student will have until the next quarterly review of Satisfactory Academic Progress to rectify the situation.
- The Student will be dismissed if one of the following conditions exists: the Student is found not making satisfactory academic progress in the next quarterly review after "Probation-1" status is given; OR the Student is found not making satisfactory academic progress in the next quarterly review after "Probation-2" status is given. The reason(s) for unsatisfactory progress will be noted in the Student's academic record. The Student's degree program status will be indicated as "Dismissed-SAP".

Students will receive written notification when they are placed on "Probation-1", "Probation-2", or "Dismissed-SAP" status. This notification will be sent via AUSTC's messaging system or other means that can be documented and/or verified of attempt to notify.

When mitigating circumstances are involved in a Student's failure to maintain satisfactory academic progress, the Student may appeal the decision that he or she has not complied with the academic progress requirements. Examples of mitigating circumstances may include documented serious illness or severe injury, or death of an immediate family member. To appeal, the Student must submit a letter to the Chief Academic Officer within 30 days after the Student received notification of the probation or dismissal. The letter must include the reason(s) why satisfactory academic progress is not being made and any documentation that supports the rationale for the appeal. Appeals may be accepted without provision, or they may be accepted provisionally, entailing a probationary period in which the Student must earn a given number of credits and/or earn a specified GPA. Appeals may also be denied. It is the Student's responsibility to initiate any appeal.

Any Student who fails to maintain satisfactory academic progress may appeal the probation or dismissal actions regardless if he is receiving financial aid or not. The appeal must be sent to the Chief Academic Officer in writing, and must be postmarked or emailed no later than 30 days after the Student was notified of the academic probation or dismissal.

08.21 - ACADEMIC PROBATION

A Student whose coursework does not adhere to academic integrity will be placed on probation status; that includes notification to the Student that may be made by mail, fax, email,

AUSTC's messaging system, in conversation with the Student in person or by telephone. A complete record of the notification must be made and inserted in the Student's file.

08.22 - ACADEMIC DISMISSAL

A Student may be dismissed from the University for:

- Failure to maintain continuous enrollment;
- Failure to keep current with financial obligations (causing non-continuous enrollment);
- Failure of submitted coursework to adhere to academic integrity in a subsequent offense after having been issued a formal warning about plagiarism
- Falsification of any work or records submitted for review or academic credit;
- Sexual misconduct; or
- Other unacceptable behavior or violation of University policy
- Unsatisfactory grades that are not included in the GPA calculation, including "U" grade in a dissertation course or practicum.

Students may be placed on probation or immediately dismissed for violation of ethical standards in their studies, examinations, presentation of papers, coursework and dissertations.

The notice of dismissal will be sent by email and mail. A copy will be kept in the Student's file.

08.23 - APPEAL OF ACADEMIC PROBATION OR ACADEMIC DISMISSAL

Students who have been dismissed stemming from failure to keep current with financial obligations to the University must first pay the outstanding balance due.

A Student has the right to appeal academic probation or dismissal to the Chief Academic Officer. The appeal must be in writing and must be postmarked or emailed no later than 30 days after the Student received notification of the academic probation or dismissal. After receiving the Student's appeal request, Academic Standards will review the academic probation or dismissal, and will make a recommendation regarding the appeal to the Chief Academic Officer. Within 15 days of receiving the Student's appeal, the Chief Academic Officer shall render a decision. The Chief Academic Officer's decision will be final.

08.24 - STUDENT CONDUCT

The University has established the following Code of Conduct for Students and graduates as a body and as individuals that they should:

1. Reflect the integrity of the University, its programs and all associated with the University in behavior, activities and actions.
2. Strive to fulfill professional responsibilities with honesty and integrity.
3. Support the principle of due process and equal treatment under the law.
4. Obey laws.
5. Adhere to ethical academic practices in their studies, examinations, and presentation of papers, theses and dissertations.
6. Maintain the standards and seek to improve the effectiveness of the profession through continuing professional and personal development.

7. Honor all contracts until fulfillment or release.
8. Pursue appropriate means to correct those laws, policies and procedures that are not consistent with sound educational goals.

08.25 - SEXUAL MISCONDUCT

It is the policy of THE AMERICAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY that sexual misconduct, including assault, harassment, or inappropriate behavior by Students, faculty mentors, or University staff shall not be condoned nor tolerated. Anyone who believes that he or she is the recipient of such behavior shall immediately contact the Chief Academic Officer or the President with a written account and details of the incident(s) so that an appropriate investigation can be made. All communications will be held in the strictest confidence and the constitutional rights of the individuals involved will be protected.

08.26 - TRANSCRIPTS

A complete set of the Student's records, including a transcript of grades, is kept in a permanent file. Transcript copies may be ordered from the Registrar at a cost of $5 each. The University will not honor requests for transcripts unless requested in writing by Students who have fulfilled all financial obligations to the University.

08.27 - JOB PLACEMENT ASSISTANCE

The University does not provide or guarantee job placement to Students upon program/course completion or upon graduation.

Some employers including the Government agencies at the state of California prefer holders of accredited degrees, while many other employers do not care about degree accreditation, but the attended educational training programs and ability to fulfill requirements of the position.

08.28 - LICENSING AND CREDENTIALS

Most professional organizations, societies, states and licensing jurisdictions have specific requirements for licensure, membership or certification. If licensing or credentialing is a major objective, Students are advised to first check the standards of their particular states, school districts, professional associations and agencies for specific license requirements. The University does not represent that its courses or programs of study meet any licensing requirements.

09 - Financial Aid Policies and Procedures

09.01 - Introduction

The American University for Science and Technology is a (501)(C)(3) Public Charity Organization that does not receive Title IV aid funding or MGI Bill benefits while applies Self-Funded Financial Aid programs stem from a belief that student aid services should facilitate and foster the successful academic participation of financially needy students

As part of its commitment to help students have a positive university experience, the university provides this information to help students better understand their relationship with AUSTC self-funded financial aid.

It is the goal of the Financial Aid Office to provide students with the most current policy information affecting their financial aid while at The American University for Science and Technology. Accordingly, as regulations change or university practices evolve, this policy will be updated.

The American University for Science and Technology is approved by the State of California Bureau for Private Postsecondary Education (BPPE) as a post-secondary degree granting facility offers Bachelor's, Master's and Doctoral degrees from schools of Business and Technology Management, Engineering, Science, Education and Behavioral and Social Sciences.

09.02 - Minimum Academic Year Definition

Academic programs offered at The American University for Science and Technology are calculated in units and measured by semesters, even though students may speed up through early completion and continue with additional subjects either to catch previously missed or cut future requirements towards graduation.

09.03 – Financial Aid Programs Offered

In addition to AUSTC's commitment to apply low cost tuition which is usually about 50% of regularly applied at for profit post-secondary facilities, AUSTC develops customized financial-aid packages based on student's qualifications, financial need, and the availability of allocated funds. Every student package may include any or a combination of the following major financial aid programs:

- **Gift aid** does not require repayment and is divided into three categories:
    - **Grants** (which recognize financial need)
    - **Scholarship and Awards** (which recognize academic merit, special talents, or other achievements)

- **Interest free payment plan**

- **Loans** must be repaid (usually after graduation) and can come from private lenders and university sources when allocated funds are available.

- **Work-study** allows students to earn money for college expenses while gaining valuable skills - often in their intended field.

09.04 - Ability to Benefit (ATB)

Any student who has not graduated from high school or received a GED and would like to join AUSTC undergraduate degree programs must demonstrate an ability to benefit from university enrollment. The American University for Science and Technology's Assessment Center will guide students through the process which must be completed before the student can be admitted.

09.05 - Packaging Policy

When a student applies for financial aid, the funds will usually come from more than one account allocation in AUSTC budget where some of them are donations and controlled funds and others are planned financial aid policy self-funded allocations. This combination of allocation resources is referred to as packaging. All financial aid attempts are always subject to availability of budget allocated funds.

09.06 - Available Financial Aid Sources

Every institution has the option of which kind of financial aid programs to offer to its students. The American University for Science and Technology is currently follows self- funded allocations.

- Unrestricted Community Charitable Donations' Fund (UCCDF) which is a community donation without donors' conditions to be spent in a specific activity, and are allocated to support students' financial aid.
- Restricted Community Charitable Donations' Fund (RCCDF) which is a community donation restricted by donors to be spent for students' financial aid.
- AUSTC Charitable Commitment, which is a case by case award of budget funded scholarships, awards or waiver.
- Work-Study Program (WS)
- Private Lenders' Loans

09.07 - Definition of Financial Need

Student financial aid is packaged (given financial aid from several of the programs for which a student is eligible) based on the student's financial need. Financial need is determined by a student's Expected Family Contribution (EFC) as compared to The American University for Science and Technology's Cost of Attendance (COA).

AUSTC defines the neediest students as those whose EFC = $0.

09.08.01 - Resources Included in Award Packaging

Financial aid packages are awarded as 25% up to 75% of tuition after deduction of credit transfer if any, and are funded from the following resources:

1. Restricted Community Charitable Donations' Fund (RCCDF) while allocated funds are available and are granted on first come first served.

2. Unrestricted Community Charitable Donations' Fund (UCCDF) while allocated funds are available and are granted on first come first served.

3. AUSTC Self-Funded Institutional Aid which is awarded to those students who qualify for the financial assistance while allocated RCCDF and UCCDF allocations are given away to other qualified students as described above.

The above listed resources may be utilized together as an award packing to serve the largest possible number of qualified students.

09.08.02 - Resources Not Included in Award Packaging

The American University for Science and Technology's financial aid packaging does not include loans (student, parent, or alternative). Information about our loan program is provided upon request.

The American University for Science and Technology is a 4-year or more postsecondary facility; students should note that loans are limited to lenders' conditions and amounts. Cost of attendance as shown on student's enrollment agreement is the only considered value for loan amount purposes.

The American University for Science and Technology does not include Work-Study Program (WS) in the initial financial aid package. Eligible students are awarded WS funds on a first come, first served basis. The American University for Science and Technology allocates a limited amount of this type of fund.

The American University for Science and Technology does not include the Academic Competitiveness Grant (ACG) in the student's initial financial aid package. This is awarded to students on an individual basis after reviewing their eligibility.

09.09 - Verification Policy

09.09.01 - Verification Process

Each year AUSTC financial aid office designates financial aid recipients whose documentation will be verified. The American University for Science and Technology financial aid verification

committee verifies every identified file as part of its own verification process. Financial aid recipients' files are verified all year using the same format of verification worksheet designed by The Department of Education.

09.09.02 - Verification Documentation

A dependent student is required to provide copies of the student's signed Federal parent's tax return as well as the student's signed Federal personal tax return. An independent student is required to provide the student's signed Federal personal tax return and that of the student's spouse, if the student is married. If prepared by a tax preparer the student and/or parents must sign the tax document.

The American University for Science and Technology, when possible, will attempt to gather income information from the parents of dependent students who reside out-of-the-country.

09.09.03 - Secondary Verification

The American University for Science and Technology uses a secondary verification process specific to the campus. For example, the University verifies all students who answer yes to the question "Are you a ward of the court?" If a student is independent only because they answered yes to this question, then the University will require documentation to support this.

09.09.04 - Eligibility Changes Resulting from Verification

If the verification process results in a change of a student's financial aid eligibility, The American University for Science and Technology repackages the student for financial aid based on their new eligibility status and notifies the student with a new award letter.

Corrections are made in the Local Financial Aid System and sent a hard copy to Registrar's office and Central Records Area for processing and documentation. Students are notified of corrections through receipt of an acknowledgment form from student's financial aid office.

09.10 - Eligibility Issues

09.10.01 - Citizenship Documentation

The American University for Science and Technology uses any acceptable documentation in the Federal and/or state laws for US citizens or residents.

09.10.02 - Conflicting Data

If in the process of reviewing a student's financial aid file, The American University for Science and Technology's Financial Aid Office notices conflicting data, the conflict must be resolved before awarding can take place.

09.10.03 - Resolving Conflicting Data

The process of resolving the conflicting data is for the Financial Aid Office to:

1. Send notification to students
2. Have a phone conversation with the student.
3. Request agency certification

09.10.04 - Timelines

The American University for Science and Technology will not award a student financial- aid (including the Institutional Fee Waiver) until the student replies and the conflicting data is resolved. Additionally, if conflicting data turns up even after the first disbursement to a student, the conflicting data must be resolved before additional disbursements can be made.

09.11 - Deadlines

09.11.01 - Financial Aid Deadlines and Priority Dates

The American University for Science and Technology publishes deadlines and priority dates for various programs in the Financial Aid Handbook, on the Web, and other public postings.

09.11.02 - Late Documents

The American University for Science and Technology does not accept documents that have passed a hard deadline. If there are extenuating circumstances, the student should talk to a Financial Aid officer and the decision is made on a case by case basis by the Financial Aid Program Manager.

09.12 – Student's Rights and Responsibilities

09.12.01 - Rights

Students at The American University for Science and Technology applying for, and receiving financial aid, have a right to the following:

1. Information on all financial assistance available.
2. Disclosure of application deadlines for each financial aid program, and for any supporting documentation.
3. Specific information regarding fees, tuition, and the refund policy for those who drop out of school (withdraw).
4. An explanation of how students are selected for receipt of financial aid, and how financial need is determined. This process includes a consideration of costs of tuition and fees, books and supplies, personal and miscellaneous expenses, etc., plus the student's income and assets, parental contribution, other financial aid (such as scholarships) and so on.
5. Knowledge of what resources are considered in the calculation of student need.
6. Knowledge of how a financial aid package is determined.
7. An explanation of various programs awarded in the student's financial aid package. If a student feels unfairly treated, a reconsideration of the award may be requested.

8. Knowledge of how The American University for Science and Technology determines whether students are making "satisfactory academic progress" and the consequences of not meeting this requirement.

09.12.02 - Responsibilities

Students at The American University for Science and Technology applying for and receiving financial aid are responsible for the following:

1. Reviewing and considering all information about The American University for Science and Technology's academic programs before enrolling.
2. Completing all the application forms accurately and completely and submitting them to the right place on time. If this is not done, financial aid could be delayed. Since errors may cause misunderstanding and misrepresentation of information provided, errors must be corrected before any financial aid can be received. Intentional misreporting of information on application forms for federal financial aid is a violation of the law and is considered a criminal offense subject to penalties under the U.S. Criminal Code, and subjects the student's application to denial. Additionally, regulations require that all cases of suspected fraud emanating from misrepresentation, be reported to the Office of the Inspector General.
3. Promptly returning all additional documentation, verification, corrections and/or new information requested by either the Financial Aid Office or the agency or agencies to which an application was submitted.
4. Reading and understanding all forms that the student is asked to sign.
5. Notifying the loan holder (if the student has a loan) of changes in the name, address or school enrollment status.
6. Performing the work that is agreed upon in accepting a university work-study award.
7. Knowing and complying with the deadlines for application or reapplication for aid.
8. Repaying financial aid funds if it is determined that the student was ineligible to receive the funds.
9. Knowing that if a student obtains a loan to pay for an educational program, the student will be responsible to repay the full amount of the loan plus interest, less the amount of any refund to the lender, and if the student has received federal student financial aid funds, the student is entitled to a refund of the money not paid from federal student financial aid program funds.

09.13 – Self-Funded Institutional Fee Waiver

The self-funded Institutional Fee Waiver Program is available to any California resident who meets the financial eligibility requirements or qualifies through another program. California state law pertaining to the Institutional fee waiver allows universities discretion in certain areas. These are The American University for Science and Technology's practices with regards to the Institutional fee waiver policies.

1. The university's Financial Aid Office considers the summer session a "trailer" for the academic year. If a student applies for Institutional fee waiver for the summer session of 2011, the student is in effect applying for financial aid for the 2010-2011 academic year, not the 2011-2012 academic year.
2. If a student wants to qualify for the Institutional fee waiver, the student must submit the institutional fee waiver application with the appropriate supporting documentation.
3. If The American University for Science and Technology Admissions enrolls a student without a social security number, the student may receive Institutional fee waiver as long as they are a California resident and otherwise qualify for the program.
4. If a student signs the Institutional fee waiver application and reports a registered domestic partnership, The American University for Science and Technology does not require additional documentation to verify the student's status.
5. If a student is independent only under the Institutional fee waiver application criteria, The American University for Science and Technology accepts the information on the signed application without requiring any additional documentation.
6. In order to qualify under for the Institutional fee waiver, The American University for Science and Technology accepts the following documentation:
    a. TANF cash assistance – the student must provide a current or previous month copy of their benefits and a letter from the county confirming that the student receives assistance during the time of application.
    b. SSI/SSP – the student must provide a current or previous month printout clearly stating their monthly benefits.
    c. General Assistance – the student must provide a current or previous month printout from the county confirming that the student will receive assistance during the period of time for which the student is requesting financial aid. Evidence of the student receiving food stamps or Medi-Cal is not enough.
7. If a student requests an adjustment be made to the student's/family's income for the Institutional fee waiver then the student must request special condition consideration. Professional judgment is not used by The American University for Science and Technology for the Institutional fee waiver application alone. Any consideration will be in the context of a broader determination of a student's eligibility for all types of financial assistance.
8. If after verification is completed, it is discovered that the student is not eligible, then the Institutional fee waiver will be removed and the student will be responsible for all fees.
9. The American University for Science and Technology requires all eligible students to self-certify their information and does not collect any additional documents unless conflicting information presents itself upon receipt of a FAFSA.
10. The Institutional fee waiver is considered an award in the package of financial aid to cover the enrollment fees.
11. Students must provide documentation demonstrating eligibility for the Dependents of Law Enforcement or Fire Suppression Personnel Fee Waiver. The American University for Science and Technology requires a letter from the appropriate public agency indicating that the student is the surviving spouse, registered domestic partner or the child, natural or adopted, of a deceased person who met all of the requirements of Education Code Section 68120 (5.6.1).

The letter must be on agency letterhead and indicate for the deceased person, that:

a. He or she was a resident of California;
b. He or she was employed by a public agency;
c. His or her principal duties consisted of active law enforcement service or active fire suppression and prevention;
d. He or she was killed in the performance of active law enforcement or active fire suppression and prevention duties.

12. The American University for Science and Technology establishes all students' eligibility for the Institutional fee waiver program the same day the student's application is complete unless conflicting or incomplete information is provided. The last day to establish eligibility for the Institutional fee waiver for the fall, spring, and summer semesters is the last day of the summer semester.
13. The American University for Science and Technology will reimburse students for fees if the student establishes Institutional fee waiver eligibility after having paid the fees. Students have until the last day of the summer semester to request reimbursement for fall, spring and summer fees.

If The American University for Science and Technology determines that a student is eligible for the Institutional fee waiver program at the time of application, and later discovers that they are ineligible, AUSTC will pursue the repayment of fees.

09.14 - Satisfactory Academic Progress

Regulations require that all financial aid recipients make satisfactory academic progress and remain in good academic standing. Academic progress is reviewed each semester, prior to the student's first disbursement for the following academic year. In addition, students who do not complete any units in the semester will be terminated from financial aid as soon as grades or withdrawals are available.

09.14.01 - Determining Enrollment Status:

Prior to each disbursement, the Financial Aid Office will verify the number of units a student is enrolled in. Based on the verified unit enrollment, a determination is made as to whether the student is eligible for additional funds. For purposes of the satisfactory academic progress, units attempted mean the number of units the student is enrolled in at the time of the final disbursement for the semester.

In determining whether or not a student is making satisfactory academic progress, the student's enrollment status is defined as the number of units the student was enrolled in at the time of the final disbursement for the semester.

If the student is enrolled in 12 or more units when his or her final disbursement for the semester is made, the student is considered to be full-time.

If the student is enrolled in 9 to 11.5 units when his or her final disbursement for the semester is made, the student is considered to be 3/4 time.

If the student is enrolled in 6 to 8.5 units when his or her final disbursement for the semester is made, the student is considered to be ½ time.

If the student is enrolled in .5 to 5.5 units when his or her final disbursement for the semester is made, the cost of attendance will be adjusted and the student is responsible to complete all units enrolled.

Completed units means that credit was received for the units enrolled. Classes in which a student receives a grade of "U", "CX", "DR", "W", "I" or "R" will not be counted as completed classes for satisfactory academic progress, but will be counted as units attempted.

In all enrollment categories, the student is expected to maintain a 2.0 (C average) cumulative grade point average (GPA).

By the end of each semester, to be considered in making satisfactory progress toward the educational goal, students must complete the minimum number of units required for their enrollment status with a 2.0 GPA at the conclusion of each term, as indicated below:

ENROLLMENT STATUS	UNIT COMPLETION REQUIREMENT
Full-time (12 + units/semester)	9 units
¾ time (9 to 11.5/semester)	8 units
½ time (6 to 8.5 units/semester)	6 units
Less than ½ time (0.5 to 5.5 units/semester)	all units enrolled

Units earned from credit transfer are not counted for financial aid purposes.

09.14.02 - Maximum Time Length and 180 Unit Limitations:

Regulations allow students to receive aid for 150% of the published length of an undergraduate program. The American University for Science and Technology publishes in its catalog that students can earn their Degree by completing the required credits in full. Students at The American University for Science and Technology, therefore, may receive aid for a maximum of 120 semester units (120 X 150%= 180 semester nits). Once a student has attempted 120 semester units at The American University for Science and Technology (including accepted transfer credits), he/she is no longer eligible to receive financial aid.

A student may receive financial aid until a total of 180 semester units have been attempted, regardless of how much aid has been received. Up to 30 units of remedial coursework and all ESL courses will be deducted. A student who has been terminated from financial aid due to attempting over 180 units may appeal to the Financial Aid Advisory Committee, provided the student is eligible to enroll at The American University for Science and Technology.

A student is allowed to transfer up to 88 semester units to another postsecondary education if he decides to continue his degree program in a facility other than The American University for Science and Technology. It is the student's responsibility to monitor the number of units they take so that they do not make him/her-self ineligible for transfer to his/her preferred university.

09.14.03 - Repeated Course Work:

Credits for repeated courses count only once as credits earned and only once in a student's GPA; however, these credits are counted as attempted credits for each repeated course and also counts towards maximum time length limitations (120 semester units). The most recent grade for any repeated course is used in calculating GPA.

09.14.04 - Non-Degree Course Work:

The American University for Science and Technology non-degree courses are considered the same as credit courses for tuition, and for academic standing with the exception that the grades assigned for non-degree course work are not included in GPA calculations. Credits for non-degree course work are included in the calculation of the 75%-completion requirement and in the maximum limit of 120 credits attempted.

It is the student's responsibility to request transcripts from previously attended institutions, if the student chooses to apply any of those units toward the current educational objective. Upon the student's request, transcripts from post-secondary facilities that are state approved or regionally accredited will be evaluated for use toward the student's current educational objective. All units applicable toward the current education objective will be counted when calculating the maximum time frame for financial aid. All units attempted, although earned before the student was receiving financial aid, will be considered toward the maximum time frame.

09.15 - Financial Aid Suspension and/or Termination:

Students who have exceeded their maximum time frame, have not completed the required number of units, or have a cumulative grade point average less than 2.0, will be terminated from financial aid. Students who have been terminated because of insufficient units completed or a grade point average deficiency will not receive further financial aid until they have made up the deficiency or filed and received an approved reinstatement petition.

If a student has been attending The American University for Science and Technology without the benefit of financial aid, the student has been held to the regular university standards for good standing. Pursuant to Section 55756 of Title 5, California Code of Regulations, students on academic probation shall be subject to dismissal from university if their cumulative grade point average is less than 2.0 in all units attempted in each of three consecutive semesters, excluding summer, or if their cumulative grade point average is less than 1.0 in each of two consecutive semesters attended, excluding summer. The student must be reinstated by the

American University for Science and Technology Readmission Committee to be able to continue at The American University for Science and Technology.

09.16 - Appeal Procedures

Any student who has been terminated from financial aid may submit a written appeal to the Financial Aid Advisory Committee (FAAC). Each appeal will be reviewed and approved or denied based on the student's individual circumstances, and his or her proposed course of action. If the written appeal is denied, the student may appeal that decision in person to the Financial Aid Advisory Committee. This decision of the Financial Aid Advisory Committee is final.

09.17 - Fraud

A student who attempts to obtain financial aid by fraud will be referred to the Dean of Admissions for disciplinary action and suspended from financial aid for unsatisfactory conduct. The University will report such instances to local law enforcement agencies, to the California Student Aid Commission and/or to the Federal Government, Office of Inspector General. Restitution of any financial aid received in such a manner will be required.

09.18 - STUDENT LOAN DEFERRMENT

Loan deferment requests, if any, are processed by the AUSTC Registrar's office. Student must obtain a Deferment Request Form from the Lender and submit it to AUSTC for processing. AUSTC has no control over deferment decisions made by Lenders.

09.19 - FINANCIAL OBLIGATIONS

Upon completion of the degree program, all outstanding financial balance is due and payable immediately. A Student may not graduate, nor receive any degree diploma or transcript, until all unpaid financial accounts have been satisfied.

09.19.01 - DEFAULT OF FINANCIAL OBLIGATIONS

If the Student's financial obligations are in default, defined as not paying a financial obligation within 30 days of due date, AUSTC may declare the entire balance due without further notice. That amount must then be paid immediately. Failure to pay the unpaid balance within 10 days may result in any or all of the following:

a) Denial of registration, transcripts, diplomas, grades and graduation;

b) Assignment of the account for collection; and

c) Reporting the delinquent account status to a credit bureau.

Furthermore, if this account is turned over for collection, the Student is obligated to pay AUSTC's collection expense. If a lawsuit or other action is filed, the Student agrees to pay AUSTC's attorney's fees as fixed by the trial court. If any party appeals any part of the trial court's decision, the Student promises to pay AUSTC's attorney's fees for the appeal as fixed by the appellate court.

10 – MINIMUM DEGREE REQUIREMENTS BY TYPE OF PROGRAM

10.01 - INFORMATION RESEARCH COURSES

ALL students are required to take information resources subject as the first taken at AUSTC or transfer it from a recognized postsecondary educational facility.

10.02 - GENERAL EDUCATION

AUSTC's General Education program for undergraduate degree programs has been designed to provide lifelong Students with those tools, skills and knowledge fundamental to successful, scholarly bachelor degree studies and for enhancing personal future effectiveness in all aspects of life.

10.02.01 - UNDERGRADUATE GENERAL EDUCATION REQUIREMENTS

AUSTC requires that all undergraduate students satisfactorily complete 40 semester units to include a course of Information Literacy, 2 College English courses, a College Mathematics course, two Humanities courses, two Natural Sciences courses, two Social and Political Sciences courses and three General Education electives.

10.02.02 - Undergraduate General Education Curriculum:

Code	General Studies Subjects	Semester Units
ALS 1007	Information Research Methods	1
LS 1009	College Algebra	3
HU 1007	Modern American History	3
HU 1009	World's Religions	3
LS 1002	English Composition I	3
LS 2002	English Composition II	3
NS 1002	Introduction to Meteorology	3
NS 1004	Controversial Environmental Issues	3
NS 1006	Health and Nutrition	3
PS 1002	U.S. Government	3
SS 1004	Sociology	3
SS 1007	Psychology of Business	3
LS 1004	Introduction to Statistics	3
LS 1006	Logic and Critical Thinking	3

10.03 - BACHELOR'S DEGREE PROGRAMS

Students are required to successfully complete a minimum of 124 Semester Units to graduate with a bachelors' degree from AUSTC. It is possible for any student to transfer up to 88 undergraduate semester units if attended at a recognized postsecondary educational facility. Minimum credit taken at AUSTC must be 32 semester units or more to be granted a bachelors' degree.

Undergraduate curriculum must be or exceeds the following:

40 credits - General Education subjects

24 Credits - Business Fundamental Subjects

21 credits - Business Administration Core subjects

36 credits - Accounting Concentration subjects

3 credits - Graduation case Study

10.04 - MASTER'S DEGREE PROGRAMS

Students are required to successfully complete a minimum of 45 Semester Units to graduate with a masters' degree from AUSTC. It is possible for any student to transfer up to 8 graduate semester units if attended at a recognized graduate educational facility. Minimum credit taken at AUSTC must be 32 semester units or more to be granted a masters' degree.

Masters' Degree curriculum must be or exceeds the following:

2 Credits - ALS 6010 (Required)

10 Credits - Fundamental Subjects

10 Credits - Core Subjects

21 Credits - Specialty Subjects

2 Credits - Thesis

10.05 - DOCTORAL DEGREE PROGRAMS

Students are required to successfully complete a minimum of 60 Semester Units and submit a publishable concept paper and a doctoral dissertation in a topic related to student's selected advanced specialty focus. It is possible for any student to transfer up to 8 graduate semester units if attended at a recognized graduate educational facility. Doctoral degree students are not required to take Information Research Strategies subject if previously attended at AUSTC graduate program.

Doctoral Degree curriculum must be or exceeds the following:

2 Information Research Strategies (Optional, if not taken earlier)

10 Credits - Fundamental subjects

10 Credits - Core subjects

30 Credits - Advanced specialty subjects

2 Credits - Submission of Concept Paper,

2 Credits - Comprehensive Exam

6 Credits - Dissertation

10.06 – SINGLE SUBJECT NON-DEGREE STUDY

Many serious Students enter studies not intending to obtain a new degree, but rather to enhance personal and professional knowledge. They may want to advance in their present career, acquire the background to make a career change, or make up academic deficiencies before entering a degree program. If the Student later applies for admission to a degree program, such non-degree study will be evaluated as to whether the coursework will be applied to the degree requirements. Minimum enrollment requirements for a degree program must be satisfied after the Student is accepted into the AUSTC degree program. Tuition for non-degree study is charged at the current semester credit rate at time of course enrollment.

11 - DEGREE PROGRAMS

11.01 - SCHOOL OF BUSINESS AND TECHNOLOGY MANAGEMENT

Undergraduate Program (BS, Business Administration

Major Concentrations:

Accounting
Applied Computer Science
Business Administration
Management
Management of Construction Projects
Marketing

Graduate Programs (MBA/PhD)

Specializations:

Applied Computer Science
Electronic Commerce
Financial Management
Health Care Administration
Human Resources Management
International Business
Management
Management of Engineering and Technology
Management Information Systems
Public Administration

11.01.01 – BS, BUSINESS ADMINISTRATION

Objectives of the BSBA Degree Program

The objectives for the Bachelor of Business Administration degree program are:

- To provide Students with the knowledge and skills necessary to understand and function effectively in a business and administrative organization;
- To familiarize students with the fundamental bodies of theoretical and applied knowledge of business represented in the core courses;
- To provide Students an opportunity to concentrate their education in areas such as accounting, management, and marketing as represented in upper level courses;
- To enable Students to integrate formal academic education with their business related experiential education to meet their personal and professional needs;
- To encourage Students to experience self-improvement and professional growth, and
- To expose Students to the global business environment**.**

REQUIREMENTS

(Total 124 Semester Units at least)

40 credits - General Education subjects

24 Credits - Business Fundamental Subjects

21 credits - Business Administration Core subjects

36 credits - Accounting Concentration subjects

3 credits - Graduation case Study

OVERVIEW OF THE CONCENTRATIONS

Accounting

Accounting is the process of systematically collecting, analyzing, and reporting financial information. Accounting is the language of business. In modern society, it is impossible to manage a business without accurate and up-to-date information supplied by a firm's accountants. Managers, lenders, suppliers and stockholders rely on information contained in three fundamental reports: the balance sheet, income statement, and a statement of cash flows.

Applied Computer Science

We live in a growing and rapidly changing information society. Until businesses began using computers, data was transformed into information manually. Computers are an essential part of transforming data into information in every aspect of our daily lives. Computers are used to control the nerve centers of automobiles, toys, and even the human heart. Applied Computer Science is a discipline that uses basic computational theories and techniques to solve practical information retrieval, analysis and dissemination problems for business and industry.

Management

Managers have to plan for the future, implement their plans in the present, and evaluate results against what has been accomplished in the past. Operations managers are concerned with present and future sales levels and with the availability of resources. Marketing managers need to have detailed information about their firm's product mix. Human resources managers must be aware of anything that pertains to their firm's employees. Administrative managers are responsible for the efficient and effective use of human, financial and material resources. Managers need a well-rounded background in marketing, financial analysis, human relations, and information systems.

Marketing

The business activities that make up a firm's marketing efforts are those directly concerned with satisfying customers' needs. The basic approach to marketing is defined by the mix of four elements: product, price, distribution, and promotion. A firm that understands marketing will enhance the creation of utility for the purchase of its products. Leaders who plan the future of their firms are challenged to find a marketing strategy that makes sense. Change is occurring at an accelerated rate: today is not like yesterday, and tomorrow will be different from today. Three developments have great influence on marketing strategy: globalization, technological advances, and deregulation.

CURIICULUM

General Knowledge (40 Semester Units):

As detailed in (section 10.02) above

Fundamental Subjects Curriculum (24 Semester Units):

Code	Subjects	Semester Units
BUS 4121	Human Resource Management And Development	3
BUS 4122	Organizational Behavior	3
BUS 4123	Principles of Marketing	3
BUS 4124	Business Statistics	3
BUS 4125	Introduction to Business	3
BUS 4126	Basic Business law	3
BUS 4127	Principles of Economics	3
BUS 4128	Business Process Analysis	3

Core Subjects Curriculum (21 Semester Units):

All Business Administration Concentrations other than accounting

Code	Subjects	Semester Units
BUS 4130	Foundation of Financial Management	3
BUS 4131	Business Statistics	3
BUS 4132	Rules of Marketing and Public Relations	3
BUS 4133	Developing Management Skills	3
BUS 4134	Practical Business Accounting	3
BUS 4135	Essentials of Marketing Management	3
BUS 4136	Essentials of Human resources Management	3

Accounting Core Subjects (21 Semester Units):

Code	Core Subjects	Semester Units
AC 4130	Accounting Principles I	3
AC 4131	Accounting Principles II	3
AC 4132	Accounting Theory/Practice I	3
AC 4133	Accounting Theory/Practice II	3
AC 4134	Managerial/Cost Accounting I	3
AC 4135	Foundations of Taxation	3
AC 4136	Advanced Accounting	3

BUSINESS ADMINISTRATION CONCENTRATION CURRICULUM:

Code	Subjects	Semester Units
BUS 4142	Small Business Management	3
BUS 4143	Manufacturing Planning and Control	3
BUS 4144	Product Design and Development	3
BUS 4145	Marketing Research	3
BUS 4146	Advertising Principles and Practice	3
BUS 4147	Promotion and Marketing Communications	3
BUS 4148	Retail Management	3
BUS 4149	Sales Force Management	3
BUS 4150	Project Management	3
BUS 4151	Operations Strategy	3
BUS 4140	Administrative Office Management	3
BUS 4141	Introduction to Material Management	3

ACCOUNTING CONCENTRATION CURRICULUM

AC 4140	Accounting Systems	3
AC 4141	Principles of Finance	3
AC 4142	Managerial/Cost Accounting II	3
AC 4143	Intellectual Property Management	3
AC 4144	Attestation and Assurance	3
AC 4145	Applied Portfolio Management	3
AC 4146	Investment Analysis and Portfolio Management	3
AC 4147	Advanced Financial Management	3
AC 4148	Derivatives and Financial Engineering	3
AC 4149	Financial Risk Management and Financial Engineering	3
AC 4150	Governmental and Not-for-Profit Accounting	3
AC 4151	Global Finance	3

APPLIED COMPUTER SCIENCE CONCENTRATION CURRICULUM

Code	Subjects	Semester Units
ACS 4140	Introduction to Business Programming	3
ACS 4141	Business Development	3
ACS 4142	Computer Administration	3
ACS 4143	Visual Basic Programming	3
ACS 4144	Networking and Internet	3
ACS 4145	Computer Networking	3
ACS 4146	Web Technology and Development	3
ACS 4147	Web Programming	3

ACS 4148	Information Technology Management	3
ACS 4149	Business Process Analysis	3
ACS 4150	Business Database Systems	3
ACS 4151	Systems Analysis and Design	3

MANAGEMENT CONCENTRATION CURRICULUM

Code	Subjects	Semester Units
MGT 4140	Business Communications	3
MGT 4141	Organizational Behavior	3
MGT 4142	Foundation of Financial Management	3
MGT 4143	Business Statistics	3
MGT 4144	Developing Management Skills	3
MGT 4145	Managerial Accounting	3
MGT 4146	Essentials of Marketing Management	3
MGT 4147	Essentials of Human resources Management	3
MGT 4148	Money, Banking and Financial Market	3
MGT 4149	Supervisory Management	3
MGT 4150	Administrative Office Management	3
MGT 4151	Small Business Management	3

MANAGEMENT OF CONSTRUCTION PROJECTS CURRICULUM

Code	Subjects	Semester Units
CPM 4140	Essentials of Human resources Management	3
CPM 4141	Project management for construction	3
CPM 4142	Drafting and Plan Reading	3

CPM 4143	Building Services Engineering	3
CPM 4144	Surveying and Setting Out Technology in Construction	3
CPM 4145	Construction Documents and Specification	3
CPM 4146	Construction Accounting & Financial Management	3
CPM 4147	Project Management	3
CPM 4148	Finite Elements	3
CPM 4149	Project Planning, Scheduling and Control	3
CPM 4150	Construction Safety and Health	3
CPM 4151	Quality Improvement	3

MARKETING CONCENTRATION CURRICULUM

Code	Subjects	Semester Units
MK 4140	Integrated Supply Chain Management	3
MK 4141	Business Communications	3
MK 4142	Marketing Essentials	3
MK 4143	Rules of Marketing and Public Relations	3
MK 4144	Marketing Research	3
MK 4145	Essentials of Marketing Management	3
MK 4146	Small Business Management	3
MK 4147	Advertising Principles and Practice	3
MK 4148	Retail Management	3
MK 4149	Sales Force Management	3
MK 4150	Developing Management Skills	3
MK 4151	Introduction to Digital Marketing	3

11.01.02 – MASTER OF BUSINESS ADMINISTRATION (MBA)

Students in graduate business administration programs must demonstrate competency in those subject areas that define the fundamental breadth of understanding of the discipline. Competency can be demonstrated through prior undergraduate, graduate coursework and successfully completing prescribed courses at AUSTC.

Degree requirements:

2 Credits - Information Research Strategies
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis or Case Study

Satisfying the fundamental and core requirements is a prerequisite for enrolling in the specialty courses in business. *Courses taken to satisfy the fundamental requirements may not be counted towards a specialization while core subjects are a component of specialty curriculum.*

11.01.02.01 - MBA Specialties Overview:

Applied Computer Science

The Applied Computer Science Specialization is the discipline of designing methods for solving problems by means of computers. The curriculum is designed to provide preparation for professional careers in the areas of Software and Network Administration. Admission is open to holders of any Bachelor's degree or the equivalent who have computer and industrial/business experience.

Electronic Commerce

The Electronic Commerce specialization is designed for Students who want to become proficient in conducting business on the Internet and/or the World Wide Web. Online marketing, Web-based applications, enabling methodologies and tools for online payment and transactions are included in the curriculum.

Health Care Administration

With the growing concern over health care and the economical delivery of health care services, there is an increasing requirement to bring managerial expertise to the health care industry. Health care administrators are in demand at entry and for advanced managerial positions in hospitals, in health maintenance organizations, in health insurance companies, and in governmental, public health, voluntary, and social service agencies. This specialization develops the essential managerial perspective and skills for this industry.

Human Resources Management

Throughout history the challenge to managers has been to manage the organization's human resources to achieve peaceful, productive and profitable organizational outcomes. This specialization studies the interrelationships between human resources and the business organization, equipping the manager to function as a HRM specialist in business, industry, and service organizations.

International Business

The global economy requires that domestic and foreign business managers have the knowledge of cultural, economic, political and legal environments of business and the necessary managerial skills for making management decisions in an international context. This specialization focuses on the essential elements required to understand and manage international organizations.

Financial Management

The lifeblood of every organization - private, public, religious or corporate - is its financial resources. Managers must know how to manage and allocate resources in order to ensure long-term profitability and organizational health. This specialization concentrates on developing these essential skills.

Management

This specialization is for the manager-generalist who must understand how the key parts of an organization function and interrelate. Effective enterprise results when the manager-generalist organizes the efforts of specialists in order to accomplish organizational outcomes. Students gain the conceptual overview of modern theory and practice in each of the key areas of management.

Management of Engineering and Technology

The engineering and technology manager brings together technical expertise with management know-how, which creates a synergism between technology and business in order to improve organizational outcomes.

Management Information Systems

The Management Information Systems (MIS) specialization is a user-friendly graduate specialization designed for administrators and managers. It is for managers who recognize that success in today's competitive environment requires an understanding of management and how managers use computer information systems to enhance the management process and business outcomes. The MIS specialization combines and applies the best from both disciplines: computer systems and management. Admission is open to holders of any Bachelor's degree or the equivalent who have industrial and/or business experience and who recognize that managers need expertise in both management and information systems. Knowledge of computer programming is not a requirement.

Public Administration

Managers possessing the wide range of skills in public administration are meeting the challenges in government management at the local, state and federal levels. For practicing public administrators as well as those seeking entry into public administration, this specialization focuses on acquiring the administrative knowledge and skills in such diverse areas as budgeting, government relations, personnel policies, politics, and urban planning.

Specializations in Applied Computer Science, Electronic Commerce, Financial Management, Health Care Administration, Human Resources Management, International Business, Management, Management of Engineering and Technology, Management Information Systems, and Public Administration

11.01.02.02 - M.B.A. Objectives and Requirements:

The objectives for the Master of Business Administration degree program are to:

1. Present managers and prospective managers with the conceptual overview of modern theory and practice in each of the key areas of managerial responsibility;
2. Integrate this formal academic education with business related experiential education so that

meaningful personalized education results;

3. Enable Students to experience self-improvement and professional growth; and
4. Expose Students to international business.

M.B.A. Degree Requirements and Course Sequence:

The Master of Business Administration degree program emphasizes traditional business administration and management studies at the graduate level. Students must complete a minimum of 45 semester credits in business or other approved graduate courses. All students must take Information Strategies course at AUSTC or transfer it from a previously attended at a recognized postgraduate educational facility. Fundamental and core subjects must be successfully completed at AUSTC before enrollment for any of the specialties as listed below.

2 Credits - Information Research Strategies
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis or Case Study

Core and specialty subjects count for required specialty credit (Total of 31 Semester Units), while fundamental subjects may not count as a specialty.

MBA CURRICULUM

GENERAL STUDIES:

Code	General Studies Subjects	Semester Units
ALS 6010	Information Research Strategies	2

FUNDAMENTAL:

Code	Fundamental Subjects	Semester Units
BUS 5120	Financial Reporting and Control	2
BUS 5121	Financial Risk Management and Decision Making	2
BUS 5122	Derivative Securities	2
BUS 5123	Business Process Management	2
BUS 5124	Operations Strategy	2

CORE:

Code	Core Subjects	Semester Units

BUS 5130	Operations Strategy	2
BUS 5131	Global Operations and Supply Chain Management	2
BUS 5132	Project Management	2
BUS 5133	Business Process Simulation	2
BUS 5134	Managing Behavior in Organizations	2

SPECIALTIES:

Business Administration

Code	Subjects	Semester Units
BUS 5140	Business and Corporate Strategies	3
BUS 5141	Launching Entrepreneurial Ventures	3
BUS 5142	Growing and Managing New Ventures	3
BUS 5143	Managing Innovation and Technology	3
BUS 5144	Strategic Managerial Processes	3
BUS 5145	Corporate Social Responsibility & Business Ethics	3
BUS 5146	Managing Change	3

Applied Computer Science Specialization

Code	Subjects	Semester Units
ACS 5140	Theory of Computation	3
ACS 5141	Distributed Systems	3
ACS 5142	Systems Design and Integration	3
ACS 5143	Systems Quality and Reliability	3
ACS 5144	Systems Project Management	3
ACS 5145	Business Database Management	3
ACS 5146	Web Applications and Server Administration	3

Electronic Commerce Specialization

Code	Subjects	Semester Units
ECM 5140	Introduction to E-Commerce	3
ECM 5141	E-Commerce Concepts	3
ECM 5142	Monitoring Web-Based Applications and Infrastructure	3
ECM 5143	Managerial Electronic Commerce	3
ECM 5144	Electronic Payment Systems	3
ECM 5145	Supply Chain Logistics Management	3
ECM 5146	E-Commerce Marketing for Internet	3

Financial Management Specialization

Code	Subjects	Semester Units
FIN 5140	Investment Analysis and Portfolio Management	3
FIN 5141	Financial Markets and Institutions	3
FIN 5142	International Finance, Transactions, Policy, and Regulation	3
FIN 5143	Financial Risk Management and Financial Engineering	3
FIN 5144	Accounting for Nonprofit Organizations	3
FIN 5145	Financial Management : Theory & Practice	3
FIN 5146	Managerial Accounting	3

Health Care Administration Specialization

Code	Subjects	Semester Units
HCA 5140	Health Care Financial Management	3
HCA 5141	Health Care Politics, Policy and Services	3
HCA 5142	Healthcare Strategic Planning	3
HCA 5143	Implementing Continuous Quality Improvement In Health Care	3
HCA 5144	Health Care Ethics	3
HCA 5145	Comparative Health Care Systems	3
HCA 5146	Assessment And Planning In Health Programs	3

Human Resources Management Specialization

Code	Subjects	Semester Units
HRM 5140	Human resources Information systems	3
HRM 5141	Strategic Compensation in Human Resources Management	3
HRM 5142	Labor Relations	3
HRM 5143	Leadership: Theory and Practice	3
HRM 5144	Managing Human resources for Innovation and Change	3
HRM 5145	Human Resource Management in Public Service	3
HRM 5146	Employment Law for Human Resource Practice	3

International Business Specialization

Code	Subjects	Semester Units
IB 5140	International Business	3
IB 5141	The Cultural Dimension of International Business	3
IB 5142	International Human resources Management	3
IB 5143	International Business Law	3
IB 5144	Global Business Strategic Management	3
IB 5145	International Economics	3
IB 5146	International Marketing	3

Management Specialization

Code	Subjects	Semester Units
MGT 5140	Organizational Behavior and Management	3
MGT 5141	Managerial Economics & Business Strategy	3
MGT 5142	Retail Management -	3
MGT 5143	Strategic Management Theory : An Integrated Approach	3
MGT 5144	Operations Management	3
MGT 5145	Managerial Accounting	3
MGT 5146	Organizational Development	3

Management of Engineering and Technology Specialization

Code	Subjects	Semester Units
MET 5140	Technology, Management, and Society	3
MET 5141	Industrial Organization: Theory and Practice	3
MET 5142	Technology Management: Activities and Tools	3
MET 5143	Managing Research and Development Organizations	3
MET 5144	Project Management	3
MET 5145	Managing Human resources for Innovation and Change	3
MET 5146	Process Technology Equipment and Systems	3

Management Information Systems Specialization

Code	Subjects	Semester Units
MIS 5140	Management Information Systems	3
MIS 5141	Information Systems Project Management	3
MIS 5142	Fundamentals of Database Management Systems	3
MIS 5143	Decision Support and Business Intelligence Systems	3
MIS 5144	Telecommunications and Business Strategy	3
MIS 5145	Systems Analysis and Design	3
MIS 5146	IT Systems Management	3

Public Administration Specialization

Code	Subjects	Semester Units
PUB 5140	Introduction to Public Administration	3
PUB 5141	The Practice of Government Public Relations	3
PUB 5142	Strategic Managerial Processes	3
PUB 5143	Public Budgeting Systems	3
PUB 5144	Essentials Of Public Health Management	3
PUB 5145	Public and Non-Profit Private Sector Partnership	3
PUB 5146	Accounting for Nonprofit Organizations	3

RESEARCH:

All MBA students are required to submit an independent research and scholar reporting on a selected topic specifically selected from related subjects. The department schedules and coordinates a number of seminars and meeting to assist students selecting the topics and fine tune their work, up to reporting. Credit is granted based on the quality of final product after evaluation of correctness, simplicity and clarity, amount of work done, amount of referencing and materials used and optimality factors.

Code	Activity	Semester Units
RES 5699	Thesis	2

11.01.03 Ph.D., Business Administration

The Ph.D. program in Business Administration is a research-based program. In addition to advanced course work, students work closely with faculty to conduct research on business issues of national and global importance.

The program prepares students for faculty positions at research colleges and universities. The Ph.D. program is highly selective—only a small number of students are accepted each year. To be admitted, applicant must demonstrate both academic merit and research capabilities.

Admission requirements: GMAT or GRE, a master's degree, original online application, a statement of purpose, a resume, three letters of recommendation, and transcripts of all previous degrees are required. Applicants with diverse academic backgrounds and previous industry experience are encouraged to apply.

Due to the selectivity of the programs, new admissions to the doctoral program must be limited to a small number each year. Since applicants are evaluated by the doctoral faculty in each of the specialization areas independently, all applicants must specify a single area of specialization on the application form. Completed application packages must be received by February 1.

Applicants for whom English is not the native language will be expected to score 575 (paper-based), 233 (computer-based), or 91 (IBT) or above on the TOEFL and to meet the University minimum on each of the four sections of the exam. Students may substitute the IELTS (minimum score of 6.5) for the TOEFL.

The GMAT or GRE scores and master's grade point average are not the sole criteria for admission. However, those with master's grade point averages of less than 3.20 on a 4.00 point scale or those who score lower than 600 on the GMAT or GRE have a low probability of admission.

11.01.03.01 - Ph.D., Business Administration's Objectives:

- Acquire advanced knowledge relevant to student's areas of specialization.
- Develop advanced academic research skills for students' areas of specialization.
- Be well prepared for the instructional responsibilities of higher education.
- Present at and attend academic conferences.
- Produce quality, co-authored scholarly papers with faculty level quality.
- Qualify graduates to be ready for strategic and corporate level positions.

11.01.03.02 - Ph.D., Business Administration's Requirements:

Students must have a broad understanding of the major disciplines that comprise the study of business administration and their application to organizational settings. If applicant does not have this prerequisite knowledge, he/she may be required to complete up to 12 credits of prerequisite course work in the following areas: behavioral science applications to business administration (management or marketing), financial economics (economics or finance), statistics, and accounting. These prerequisite courses are not included for program credit. Students with previous course work in these areas are normally exempted. There are other avenues for an exemption. Students should discuss these alternatives with the doctoral program director.

The advanced course work phase entails a minimum of 60 credit hours of advanced course work and research beyond the master's degree. Students who haven't previously taken Information Research Strategies must attend 2 semester units of the subject as the first to be taken at AUSTC in addition to the required 60 semester units. Student may transfer up to 8 semester credits from another accredited or recognized higher educational facility.

2 Credits from Information Research Strategies (Optional, if not taken earlier)

10 Credits form Fundamental

10 Credits from Core subjects

30 Credits from Advanced specialty subjects

2 Credits from Submission of Concept Paper,

2 Credits - Comprehensive Exam

6 Credits – Dissertation

Student will write two major papers of publishable quality under the guidance of professors. This phase culminates in written and oral comprehensive examinations covering area of specialization, research methods, and other areas deemed appropriate by the doctoral dissertation committee.

After passing the comprehensive examination, doctoral candidates enter the dissertation research phase and engage in significant research under the supervision of their major professor and the doctoral committee.

Doctoral dissertation research is expected to make a major contribution to the state of knowledge in the candidate's field. The dissertation defense is a final oral examination administered according to procedures established by the Graduate School.

11.01.03.03 - Ph.D., Business Administration – Curriculum

Fundamental Subjects (10 Semester)

Code	Subjects	Semester Units
RES 6120	Statistical Modeling and Analysis for Complex Data Problems	2
RES 6121	Optimal Experimental Design	2
RES 6122	Mathematical Modeling	2
RES 6123	Research Methods and Design	2
RES 6124	Dissertation Planning, Writing, and Defending	2

Core Subjects:

Code	Subjects	Semester Units
BUS 6130	Business Process Management	2
BUS 6131	Operations Strategy	2
BUS 6132	Project Management	2
BUS 6133	Business and Corporate Strategies	2
BUS 6134	Managing Change	2

Management Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
MGT 6140	Managerial Economics & Business Strategy	3
MGT 6141	Financial Management : Theory & Practice	3
MGT 6142	Strategic Management Theory : An Integrated Approach	3
MGT 6143	Operations Management	3
MGT 6144	Leadership in Organizations	3
MGT 6145	Managerial Communication : Strategies and Applications	3
MGT 6146	Entrepreneurship	3
MGT 6147	Business and Management Consulting	3
MGT 6148	Organizational Development	3
MGT 6149	Crisis Management	3

Applied Computer Science Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
ACS 6140	Decision Support and Expert Systems	3
ACS 6141	E-Commerce Concepts	3
ACS 6142	Concepts of Database Management	3
ACS 6143	Integrated Business Processes with ERP Systems	3
ACS 6144	Monitoring Web-Based Applications and Infrastructure	3
ACS 6145	Managerial Electronic Commerce	3
ACS 6146	Electronic Payment Systems	3
ACS 6147	Network Defense: Security and Vulnerability Assessment	3
ACS 6148	Data Mining Concepts and Techniques	3
ACS 6149	Computer Networking	3

Electronic Commerce Advanced Specialty Subjects (30 credits or more)

Code	Concentration / Specialty / Focus Subjects	Semester Units
ECM 6146	Localization Strategies for E-Business	3
ECM 6140	E-Commerce Concepts	3
ECM 6148	Monitoring Web-Based Applications and Infrastructure	3
ECM 6147	Managerial Electronic Commerce	3
ECM 6144	Electronic Payment Systems	3
ECM 6149	Supply Chain Logistics Management	3
ECM 6142	E-Commerce Marketing for Internet	3
ECM 6141	E-Commerce for Entrepreneurs	3
ECM 6145	Integrated Supply Chain Management	3
ECM 6143	Electronic Commerce Research Project	3

Engineering and Technology Management Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
MET 6140	Managing Human resources for Innovation and Change	3
MET 6141	Principles of Productivity and Operation Management	3
MET 6142	Operations Research	3
MET 6143	Quality Management for Organizational Excellence	3
MET 6144	Process Technology Equipment and Systems	3
MET 6145	Technology, Management, and Society	3
MET 6146	Industrial Organization: Theory and Practice	3
MET 6147	Technology Management: Activities and Tools	3
MET 6148	Managing Research and Development Organizations	3
MET 6149	Project Management	3

Financial Management Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
FIN 6140	Investment Analysis and Portfolio Management	3
FIN 6141	Financial Markets and Institutions	3
FIN 6142	International Finance, Transactions, Policy, and Regulation	3
FIN 6143	Foundations of Financial Management	3
FIN 6144	Accounting for Nonprofit Organizations	3
FIN 6145	Quality Concepts in Financial Management	3
FIN 6146	Financial Statement Analysis	3
FIN 6147	Accounting for Nonprofit Organizations	3
FIN 6148	Financial Management Research Project	3
FIN 6149	Electronic Payment Systems	3

HealthCare Administration Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
HCA 6140	Health Care Financial Management	3
HCA 6141	Health Care Politics, Policy and Services	3
HCA 6142	Healthcare Strategic Planning	3
HCA 6143	Health Care Grants	3
HCA 6144	Implementing Continuous Quality Improvement In Health Care	3
HCA 6145	Essentials Of Managed Health Care	3
HCA 6146	Health Care Ethics	3
HCA 6147	Comparative Health Care Systems	3
HCA 6148	Assessment And Planning In Health Programs	3
HCA 6149	Health Care Administration Research Project	3

International Business Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
IB 6140	International Business	3
IB 6141	International Marketing	3
IB 6142	International Business Law	3
IB 6143	Total Quality Management in International Business	3
IB 6144	The Cultural Dimension of International Business	3
IB 6145	International Economics	3
IB 6146	Global Business Strategic Management	3
IB 6147	Operations Strategy	3
IB 6148	Supply Chain Logistics Management	3
IB 6149	International Business Administration Research Project	3

Management Information Systems Advanced Specialty Subjects (30 credits or more)

Code	Concentration / Specialty / Focus Subjects	Semester Units
MIS 6140	Management Information Systems	3
MIS 6141	Information Systems Development	3
MIS 6142	Database Management Systems	3
MIS 6143	Decision Support and Business Intelligence Systems	3
MIS 6144	Telecommunications and Business Strategy	3
MIS 6145	Local Area Networks Switching and Wireless	3
MIS 6146	Total Quality Management in MIS	3
MIS 6147	Wide Area Networks (WAN)	3
MIS 6148	IT Systems Management	3
MIS 6149	Management Information Systems Research Project	3

Public Administration Advanced Specialty Subjects (30 credits or more)

Code	Subjects	Semester Units
PUB 6140	The Practice of Government Public Relations	3
PUB 6141	Public Urban Politics in a Global Age	3
PUB 6142	Regional Planning for Contemporary Urban Regions	3
PUB 6143	Public Budgeting Systems	3
PUB 6144	Essentials Of Public Health Management	3
PUB 6145	Public Program Evaluation	3
PUB 6146	Complex Public Organizations	3
PUB 6147	Public Personnel Management	3
PUB 6148	Healthcare Strategic Planning	3
PUB 6149	Quality Management in Public Administration	3

Research Activities

Code	Activity	Semester Units
RES 7160	Concept Paper	2
RES 7161	Doctoral Comprehensive Examination	2
RES 7162	Doctoral Dissertation Research I	2
RES 7163	Doctoral Dissertation Research II	2
RES 7164	Doctoral Dissertation Research III	2

11.02 - SCHOOL OF EDUCATION

11.02.01 – MASTER OF EDUCATIONAL LEADERSHIP

The Master of Education program is suited for Students who want to combine a strong understanding of current theory and practice in education and/or organizational leadership with their personal needs and career focus. The Master of Education also provides Students with the foundational knowledge and skills necessary for doctoral level study.

Students who are planning on pursuing state licensing or certification are advised to check with state or national requirements before selecting a course of study.

All Educational Leadership Master's degree students are required to take (ALS6010 – Information Research Strategies) as the first subject at AUSTC or provide an acceptable evidence to have it transferred from previously attended at a recognized graduate educational facility;

After successful completion or transfer of (ALS 6010) all students are required to attend and successfully complete fundamental and core subjects before being qualified to enroll to an educational leadership specialty program and consequentially submit a thesis or case study related to the selected specialty.

11.02.01.01 - SPECIALTIES OVERVIEW

- Educational Leadership
- Organizational Leadership
- Higher Education Leadership
- Education Technology Management
- Exceptional Student Education
- Instructional Leadership
- Teacher Leadership

Educational Leadership

The School of Education at AUSTC is committed to preparing educational leaders and scholars through a comprehensive program of study in educational leadership addressing the ever-changing conditions and emerging issues within the context of education. Dedicated to the University's mission of providing excellence in teaching, research, and service the Program promotes a broad array of values, knowledge, and skills essential to renew and improve education in the 21st Century. Students pursuing the specialization in Educational Leadership engage in study related to the setting in which they are interested in working. The specialization in Educational Leadership allows Students to pursue a coherent set of structured education experiences including traditional coursework, research, and professional practice to achieve education outcomes.

Organizational Leadership

Organizational Leadership appeals to Students who are focused on developing the competencies required of organizational leaders. The strategically crafted courses serve to enhance Student's commitment to the understanding and practice of leadership. Grounded in research, facilitated by leadership practitioner faculty and customized for maximum professional impact, the AUSTC Leadership course of study is appealing to Students who currently serve as or want to become change agents within their organization. This specialization has broad appeal, and Students whose professional goal is organizational consulting or a generalist leadership position in corporate, government, not-for-profit, or community organization find the curriculum to be especially appealing and relevant.

Higher Education Leadership

The specialization in higher education offers M.Ed. Students with an opportunity to pursue studies in higher education. Students pursuing the higher education specialization are usually seeking to develop their leadership skills and/or desire to move into faculty roles in higher education. They may already work at a community college or university and are seeking job advancement. They may wish to pursue a faculty position by continuing their studies at the doctoral level. Coursework may be tailored to complement interests and professional aspirations within the higher education environment.

Education Technology Management

Technology Management in Education (LTM) is designed for education professionals who are developing their leadership role in the field of educational technology. Focus of the program is in establishing a knowledge base and application of new technologies, current research in the field and designing curriculum and instruction through technology integration and instructional planning. Students will develop skills and knowledge to advance their instructional effectiveness in varied settings through application of technology theory and practice. Technology Management in Education is designed for educational trainers, teachers and supervisors.

Exceptional Student Education

The Exceptional Student Education specialization is designed to prepare graduates to teach and work with individuals with various types of disabilities. The specialized curriculum prepares Students to teach students with mental, physical, behavioral and education disabilities, as well as work in a variety of related fields. The course offerings within the ESE specialization covers a wide spectrum of issues relating to individuals with disabilities, including the development and characteristics of students, individual education differences, instructional strategies, social development, and language development. The curriculum encompasses education environments, instructional planning, assessment, professional and ethical practices, and collaboration.

Instructional Leadership

The specialization in Instructional Leadership and Supervision at AUSTC provides a solid foundation for Students with the desire to improve the instructional capacity of schools and increase student achievement. Instructional leadership, not just by the principal but by others in both formal and informal leadership roles play a pivotal role in leading instructional improvements to enhance student education and achievement.

Through the efforts of accomplished instructional leadership experts, the IL specialization focuses on improving the effectiveness of individuals in instruction-related leadership roles, including lead teachers, department chairs, building and district administrators, and program coordinators.

Teacher Leadership

The specialization in Teacher Leadership prepares Students with a knowledge base, skill set, and competencies necessary to assume diverse leadership roles in the educational enterprise. Teacher Leadership is about energizing and mobilizing the "sleeping giant"-the untapped attributes and contributions of teachers to strengthen student performance and increase student achievement. Teacher Leadership offers Students the opportunity to develop their understanding of teaching and education; to augment their understanding of school culture; to challenge the barriers to school reform and change; to build collaborative coalitions, and to create new system paradigms. Teacher Leadership is geared to Students who wish to extend their professional influence beyond their classrooms without leaving the teaching profession.

11.02.01.02 - Objectives of the Masters of Education Program

1. A major objective of the M.Ed. is to provide knowledge and enable Students to develop individual leadership skill sets for solving particular educational problems, whether in teaching, supervision, or administration, while keeping solutions in balance with organizational, community, or school system needs and expectations.

2. A second objective is to facilitate students' acquisition of sound principles and techniques essential to working effectively in a wide range of instructional or organizational settings.

11.02.01.03 - Master of Education Degree Requirements

Required = 46 Semester Units

Maximum Credit Transfer = 8 Semester Units

Minimum Taken at AUSTC = 38 Semester Units

2 Credits from ALS 6010 Information Research Strategies (Required)

10 Credits from Fundamental Subjects

10 Credits from Core Subjects

21 Credits from Specialty Subjects

3 Credits from Thesis or Case Study

11.02.01.04 - Certification and Licensing

The School of Education serves educational leaders by providing graduate studies in education to reach worldwide populations. The M.Ed. program is designed to reach national and international markets and does not purport to provide licensure or certification in any particular state or country.

There are several reasons why an educator would want to pursue a graduate degree in education that does not lead to state licensing or certification. For instance:

- Desire to "move up" steps on the salary schedule.
- Improve skills and professionalism in general or to pursue "leadership" position out of the classroom (school-based or district level).
- To be perceived as a "teacher leader" through advanced degree (already has a bachelor's degree and certification).
- Better meet the needs of increasingly diverse students.
- Does not work in a traditional K-12 classroom environment (trainer, educational consultant, etc.)

Certification requirements vary by state and district. Students are advised to contact their state department of education for guidance in obtaining certification or licensure or local school district for approval in fulfilling district level incentive programs. Students entering the M.Ed. degree program must follow program outlines listed for their specialization and must comply with program requirements for degree candidacy and completion.

11.02.01.05 - MASTER OF EDUCATION - CURRICULUM

All specialties' students are required to take Information Research Strategies or have it transferred from a recognized graduate educational facility and then successfully complete the following fundamental and core subjects before being qualified to select and attend specialty curriculum as detailed below.

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental Subjects

Code	Subjects	Semester Units
ED 5120	Philosophy of Education	2
ED 5121	School Law	2
ED 5122	Instructional Supervision and Leadership	2
ED 5123	Policy Studies for Educational Leaders	2
ED 5124	Improving Schools Through Action Research	2

Core subjects:

Code	Subjects	Semester Units
ED 5130	School Leadership and Administration	2
ED 5131	School Finance	2
ED 5132	Leadership: Theory and Practice	2
ED 5133	Education and Social Change	2
ED 5134	Policy Studies for Educational Leaders	2

Specialty subjects:

Each specialty counts 21 semester units and is attended after successful completion of fundamental and core subjects. Core subjects add to specialty credits to count a total of 31 semester units, while fundamental subjects may not count as specialty. Students may qualify for graduation after completion of the above and submission of satisfactorily accepted thesis or case study.

Educational Leadership

Code	Subjects	Semester Units
ED 5140	Improving Schools Through Action Research	3
ED 5141	School Safety	3
ED 5142	Instructional Supervision and Leadership	3
ED 5143	The School Counseling and School Social Work Treatment	3
ED 5144	Measurement and Assessment in Teaching	3
ED 5145	School Based Leadership	3
ED 5146	School and Community Relations	3

Organizational Leadership

Code	Subjects	Semester Units
OL 5140	Building Organizational Capacity	3
OL 5141	Quality Management for Organizational Excellence	3
OL 5142	Organizational Culture and Leadership	3
OL 5143	Law and Ethics in Educational Leadership	3
OL 5144	Theory and Practice of Organizational Leadership	3
OL 5145	Executive Coaching	3
OL 5146	Organizational Development	3

Higher Education Leadership

Code	Subjects	Semester Units
LHE 5140	Higher Education Policy	3
LHE 5141	For Profit Colleges and Universities	3
LHE 5142	Budget and Financial Management in Higher Education	3
LHE 5143	Organization and Governance in Higher Education	3
LHE 5144	Academic Leadership for Higher Education	3
LHE 5145	Foundations of Distance Education	3
LHE 5146	Community College Leadership and Administration	3

Education Technology Management

Code	Subjects	Semester Units
ETM 5140	Educational Application of Internet	3
ETM 5141	Instructional Design	3
ETM 5142	Educational Technology Planning and Management	3
ETM 5143	Educational Application of Media and Technology	3
ETM 5144	Information Technology Project Management	3
ETM 5145	Teaching and Learning with Technology	3
ETM 5146	Administering the School Library Media Center	3

Exceptional Student Education

Code	Subjects	Semester Units
ESE 5140	Introduction to Special Education	3
ESE 5141	Characteristics of Learning Disabled Students	3
ESE 5142	Strategies for Teaching Learners with Special Needs	3
ESE 5143	Learning Disabilities and Related Mild Disabilities	3
ESE 5144	Management of Students with Behavioral Problems	3
ESE 5145	Teaching Students with Language Disabilities	3
ESE 5146	Transition Planning for Students with Disabilities	3

Instructional Leadership

Code	Subjects	Semester Units
IL 5140	Creation and Transfer of Knowledge	3
IL 5141	Instructional Leader as Advocate and Decision Maker	3
IL 5142	School and Community Relations	3
IL 5143	Instructional Supervision and Leadership	3
IL 5144	Measurement and Assessment in Teaching	3
IL 5145	Supervision of Curriculum	3
IL 5146	Instructional Design	3

Teacher Leadership

Code	Subjects	Semester Units
TL 5140	Teachers as Servant Leaders	3
TL 5141	Teacher as a Change Agent	3
TL 5142	Teaching Management	3
TL 5143	Standards and Practice of Teacher Leadership	3
TL 5144	Teacher Leadership Technology	3
TL 5145	Teacher as a Mentor	3
TL 5146	Innovation and Change	3

RESEARCH:

All MBA students are required to submit an independent research and scholar reporting on a selected topic specifically selected from related subjects. The department schedules and coordinates a number of seminars and meeting to assist students selecting the topics and fine tune their work, up to reporting. Credit is granted based on the quality of final product after evaluation of correctness, simplicity and clarity, amount of work done, amount of referencing and materials used and optimality factors.

Code	Activity	Semester Units
RES 5699	Thesis	2

11.02.02 Ph.D., Education

The American University for Science and Technology offers Ph.D. in education which prepares educational practitioners for new professional roles as educational leaders, mentors, and scholars.

The program is grounded in the knowledge bases of school teaching and learning.

11.02.02.01 - Ph.D., Education: Objectives

1) Develop and employ collegial relationships through professional collaboration;

2) Acquire and apply the skills and processes of scholarly inquiry;

3) Demonstrate expertise in an area of specialization that advances the mission of American education; and

4) Implement professional practices that promote progress in educational settings.

Designed for professionals involved in prekindergarten through adult education, the doctoral program admits 12 to 15 students per year.

This cohort-based research program is for students who previously earned a master's degree in education or an allied field or have earned at least 30 graduate credits from an accredited or recognized institution.

11.02.02.02- Ph.D., Education: REQUIREMENTS

The program requires a minimum of 60 credits beyond the master's degree. All students are required to take (ALS 6010 Information Research Strategies) as the first subject taken at AUSTC or provide an enough evidence to transfer the subject from a recognized graduate educational facility.

The graduate-level work must include four credits in each of the following areas:

- Educational foundations;
- Curriculum; and
- Research

A major segment of each student cohort will be made up of practicing teachers and administrators who are committed to developing advanced teaching, leadership, and research skills.

Admission requirements:

Graduate Record Exam (GRE) scores no older than 5 years, official transcripts, curriculum vitae, and letters of recommendation are required.
Before being qualified for enrollment to advanced specialty curriculum, students must take and successfully pass fundamental and core subjects.

Field-based research explores community service and service learning in the context of schools. Students gain research expertise to help their development as school leaders through course work and the field research seminars. Scholarly expertise in a professional area is acquired through specialization courses.

All students must complete a doctoral dissertation.

Degree Requirements

Required = 60 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 52 Semester Units

2 Credits from Information Research Strategies (Optional, if not taken earlier)
20 Credits form Fundamental and core subjects
30 Credits from Advanced specialty subjects
2 Credits from Submission of Concept Paper,
2 Credits from Comprehensive Exam
6 Credits from Dissertation

11.02.02.03 – PhD, Education: Curriculum

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental curriculum's Subjects (10 Semester Units)

Code	Subjects	Semester Units
RES 6120	Statistical Modeling and Analysis for Complex Data Problems	2
RES 6121	Optimal Experimental Design	2
RES 6122	Mathematical Modeling	2
RES 6123	Research Methods and Design	2
RES 6124	Dissertation Planning, Writing, and Defending	2

Core Curriculum Subjects (10 Semester Units)

Code	Core Subjects	Semester Units
ED 6130	School Leadership and Administration	2

ED 6131	School Finance	2
ED 6132	School Safety	2
ED 6133	Leadership: Theory and Practice	2
ED 6134	Organizational Development	2

Advanced Specialty Curriculum (30 Semester Units Each)

Technology and E-Learning

Code	Advanced Specialty Subjects	Semester Units
ETM 6140	Educational Application of Internet	3
ETM 6141	Instructional Design	3
ETM 6142	Educational Technology Planning and Management	3
ETM 6143	Educational Application of Media and Technology	3
ETM 6144	Information Technology Project Management	3
ETM 6145	Teaching and Learning with Technology	3
ETM 6146	Administering the School Library Media Center	3
ETM 6147	Educational Leadership and Planning for Technology	3
ETM 6148	Multimedia Communications and Networking	3
ETM 6149	Distance Education: Theory and Process	3

Curriculum and Instruction

Code	Advanced Specialty Subjects	Semester Units
IL 6140	Developing Instructional Strategies and Curriculum	3
IL 6141	Teaching and Learning Foundations	3
IL 6142	Multiple Intelligences	3
IL 6143	Educational Leadership And Student Achievement	3
IL 6144	Foundations of Distance Education	3
IL 6145	Introduction to Special Education	3
IL 6146	Creation and Transfer of Knowledge	3
IL 6147	Instructional Leader as Advocate and Decision Maker	3
IL 6148	School and Community Relations	3
IL 6149	Instructional Design	3

Educational Leadership

Code	Subjects	Semester Units
ED 6140	Improving Schools Through Action Research	3
ED 6141	Instructional Supervision and Leadership	3
ED 6142	Education and Social Change	3
ED 6143	The School Counseling and School Social Work Treatment	3
ED 6144	Measurement and Assessment in Teaching	3
ED 6145	Policy Studies for Educational Leaders	3
ED 6146	School Based Leadership	3
ED 6147	School and Community Relations	3
ED 6148	Supervision of Curriculum	3
ED 6149	Innovation and Change	3

Higher Education Leadership

Code	Subjects	Semester Units
LHE 6140	Adult Education	3
LHE 6141	Higher Education Policy	3
LHE 6142	Academic Transformation	3
LHE 6143	For Profit Colleges and Universities	3
LHE 6144	Budget and Financial Management in Higher Education	3
LHE 6145	Organization and Governance in Higher Education	3
LHE 6146	Transnational Higher Education	3
LHE 6147	Academic Leadership for Higher Education	3
LHE 6148	Foundations of Distance Education	3
LHE 6149	Community College Leadership and Administration	3

Organizational Leadership

Code	Subjects	Semester Units
OL 6140	Human Resource Management And Development	3
OL 6141	Organizational Development	3
OL 6142	Innovation and Change	3
OL 6143	Conflict Resolution and Mediation	3
OL 6144	Building Organizational Capacity	3
OL 6145	Quality Management for Organizational Excellence	3
OL 6146	Organizational Culture and Leadership	3
OL 6147	Law and Ethics in Educational Leadership	3
OL 6148	Theory and Practice of Organizational Leadership	3
OL 6149	Executive Leadership in Nonprofit Organizations	3

Technology Management

Code	Subjects	Semester Units
ETM 6140	Educational Application of Internet	3
ETM 6141	Instructional Design	3
ETM 6142	Educational Technology Planning and Management	3
ETM 6143	Educational Application of Media and Technology	3
ETM 6144	Information Technology Project Management	3
ETM 6145	Teaching and Learning with Technology	3
ETM 6146	Administering the School Library Media Center	3
ETM 6147	Educational Leadership and Planning for Technology	3
ETM 6148	Multimedia Communications and Networking	3
ETM 6149	Distance Education: Theory and Process	3

Teachers Leadership

Code	Concentration / Specialty / Focus Subjects	Semester Units
TL 6140	Executive Coaching	4
TL 6141	Innovation and Change	4
TL 6142	Teachers as Servant Leaders	4
TL 6143	Teacher as a Mentor	4
TL 6144	Teacher as a Change Agent	4
TL 6145	Teaching Management	4
TL 6146	Standards and Practice of Teacher Leadership	4
TL 6147	Teacher Leadership Technology	4
TL 6148	Teacher's Role in Implementing Cooperative Learning	4
TL 6149	Educational Leadership and Planning for Technology	4

Exceptional Student Education

Code	Subjects	Semester Units
ESE 6140	Introduction to Special Education	3
ESE 6141	Assessment of Student Achievement	3
ESE 6142	Characteristics of Learning Disabled Students	3
ESE 6143	Transition Planning for Students with Disabilities	3
ESE 6144	Strategies for Teaching Learners with Special Needs	3
ESE 6145	Learning Disabilities and Related Mild Disabilities	3
ESE 6146	Management of Students with Behavioral Problems	3
ESE 6147	Teaching Students with Language Disabilities	3
ESE 6148	Innovation and Change	3
ESE 6149	Conflict Resolution and Mediation	3

Research (10 Semester Units)

Code	Activity	Semester Units
RES 7160	Concept Paper	2
RES 7161	Doctoral Comprehensive Examination	2
RES 7162	Doctoral Dissertation Research I	2
RES 7163	Doctoral Dissertation Research II	2
RES 7164	Doctoral Dissertation Research III	2

11.03 - SCHOOL OF SOCIAL AND BEHAVIORAL SCIENCE

School of Social and Behavioral Science offers undergraduate Bachelor of Arts in General Psychology (BA) and a Master of Arts in Psychology (MA) with specialties in Health Psychology/Behavioral Medicine, Industrial/Organizational Psychology and Marriage and Family Therapy.

11.03.01 - BACHELOR OF ARTS IN GENERAL PSYCHOLOGY

11.03.01.01 - OBJECTIVES OF THE B.A. IN PSYCHOLOGY DEGREE PROGRAM

The objectives for the Bachelor of Arts in Psychology degree program are to:

(1) Introduce Students to the field of psychology and behavioral studies;
(2) Familiarize Students with the fundamental theoretical and applied knowledge of psychology;
(3) Provide Students with a basic understanding of human behavior to better understand themselves and their relationships with others;
(4) Enable Students to integrate formal academic education with their personal experiences so that education is meaningful, personalized, and relates to their personal or professional needs, and
(5) Expose Students to the diversity of the global environment.

11.03.01.02 - B.A. IN PSYCHOLOGY DEGREE REQUIREMENTS:

Required = 124 Semester Units
Maximum Credit Transfer = 88 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

40 Credits of general Subjects
24 Credits of Fundamental Psychology Subjects
21 credits of Core Psychology subjects
36 credits of Concentration Psychology subjects
3 credits of Graduation case Study

11.03.01.03 - UNDERGRADUATE PSYCHOLOGY CURRICULUM

All students are required to take 2 semester units of ALS 1007 Information Research Methods as the first taken subject at AUSTC or provide an acceptable evidence to transfer it from a recognized postsecondary educational facility. Before being qualified for enrollment to psychology concentration subjects, student should successfully complete 38 semester units of general studies in addition to 45 semester units of fundamental and core psychological subjects as described below.

General Knowledge:

As detailed in (section 10.02) above

Psychology Fundamental curriculum (24 Semester Units)

Code	Fundamental Subjects	Semester Units
PSY 4120	Introduction to Psychology	3
PSY 4121	Theories and Techniques of Counseling and Psychotherapy	3
PSY 4122	Behavior Modification	3
PSY 4123	Developmental Psychology	3
PSY 4124	Psychology Tools and Technology	3
PSY 4125	Psychology of Trauma	3
PSY 4126	Experimental Methods & Statistics I	3
PSY 4127	Experimental Methods & Statistics II	3

Psychology Core Curriculum (21 Semester Units)

Code	Core Subjects	Semester Units
PSY 4130	Theories of Personality	3
PSY 4131	Abnormal Psychology	3
PSY 4132	History and Systems of Psychology	3
PSY 4133	Physiological Psychology	3
PSY 4134	Cross-Cultural Psychology	3
PSY 4135	Directed Psychology Research	3
PSY 4136	Application of Treatment Models	3

After successful completion of fundamental and core subjects students may continue the curriculum taking psychology concentration subjects as described below:

Psychology Concentration Curriculum (36 Semester Units)

Code	Subjects	Semester Units
PSY 4140	Motivation and Emotion	3
PSY 4006	Persuasion and Attitude Change	3
PSY 4008	Industrial Organizational Psychology	3
PSY 4012	Social Psychology	3
PSY 4013	Judgment and Decision Making	3
PSY 4014	Environmental Psychology	3
PSY 4020	Human Factors Psychology	3
PSY 4022	Human Performance	3
PSY 4023	Cognitive Psychology	3
PSY 4024	Cognitive Neuroscience	3
PSY 4028	Learning and Memory	3
PSY 4038	Psychology and Law	3

All students are required to submit a graduation research project to qualify for graduation.

11.03.02 - MASTER OF ARTS IN PSYCHOLOGY

Students in the graduate psychology programs (M.A.) must take (ALS 6010 Information Research Strategies) as the first taken course at AUSTC or transfer it from a recognized graduate educational facility. Psychology Specialty programs require 46 credits including 2 credits from Information Research Strategies, 10 credits from Fundamental subjects, 10 credits from core specialty subjects and 21 credits from selected specialty subjects. Family/Marriage Therapy and the specialty of Health Psychology and Behavioral Medicine require 61 credits including 2 Credits from Information Research Strategies, 10 Credits from fundamental subjects, 10 credits from specialty core subjects and 36 credits from selected specialty subjects. All specialty students must submit a thesis that counts 3 credits.

All students are eligible to transfer up to 8 semester units from another recognized graduate educational facility after submission of an acceptable evidence of successful attendance and completion.

11.03.02.01 – M.A., ORGANIZATIONAL PSYCHOLOGY

OBJECTIVES

The objectives of the Masters programs are to:

1. Enable individuals to continue their formal professional education at the graduate level in the behavioral science of psychology;
2. Provide the knowledge and skills for professional growth such as advancement in employment, status, and position;
3. Encourage personal growth, self-improvement, intellectual accomplishment, and global awareness;
4. Enable individuals to integrate formal academic education with individual and community problems so that meaningful personalized education takes place; and
5. Prepare and encourage individuals to continue their education in psychology at the doctoral level.

REQUIREMENTS

Required = 46 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
3 Theses

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Psychology Fundamental Subjects:

Code	Subjects	Semester Units
PSY 5120	Human Behavior and the Social Environment	2
PSY 5121	Cognition, Emotion and Motivation	2
PSY 5122	Human Performance	2
PSY 5123	Judgment and Decision Making	2
PSY 5124	Advanced Statistical Analysis and Design	2

Core Subjects (10 Semester Units)

Code	Core Subjects	Semester Units
PSY 5130	Counseling Theories and Strategies	2
PSY 5131	Ethics in Counseling and Psychotherapy	2
PSY 5132	Psychology of Learning	2
PSY 5133	Sensation and Perception	2
PSY 5134	Human Factors Psychology	2

Specialty Subjects (24 Semester Units)

Code	Concentration / Specialty / Focus Subjects	Semester Units
IOP 5140	Organizational Behavior and Management	3
IOP 5141	Work Motivation and Attitudes	3
IOP 5142	Organizational Development	3
IOP 5143	Conflict and Negotiation	3
IOP 5144	Psychology of Decision Making	3
IOP 5145	Executive Coaching and Development	3
IOP 5146	Industrial Organizational Psychology	3
IOP 5147	Industrial / Organizational Psychology Practicum	3

11.03.02.02 - M.A., Health Psychology and Behavioral Medicine

Health Psychology/Behavioral Medicine is a newly developed and an important area of research, teaching, and clinical practice. It is a study of the total matrix of factors influencing the psychological and physical health of people and takes a bio-psychosocial approach in accounting for illness and behavioral health, and develops essential knowledge and skills for this vital area.

REQUIREMENTS:

Required = 61 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 53 Semester Units

2 Credits - ALS 6010 (Required)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
36 Credits - Specialty Subjects
3 Credits - Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental Subjects:

Code	Subjects	Semester Units
PSY 5120	Human Behavior and the Social Environment	2
PSY 5121	Cognition, Emotion and Motivation	2
PSY 5122	Human Performance	2
PSY 5123	Judgment and Decision Making	2
PSY 5124	Advanced Statistical Analysis and Design	2

Core Subjects:

Code	Core Subjects	Semester Units
HBM 5120	Research Methods for the Behavioral Sciences	2
HBM 5121	Psychopharmacology	2
HBM 5122	Group Therapy	2

HBM 5123	Trance work: Practice of Clinical Hypnosis	2
HBM 5124	Posttraumatic Stress Disorder	2

Specialty Subjects

Code	Concentration / Specialty / Focus Subjects	Semester Units
HBM 5140	Psychology of Chronic Illness	3
HBM 5141	Behavioral Medicine I	3
HBM 5142	Behavioral Medicine II	3
HBM 5143	Essentials of Pain Management	3
HBM 5144	Psychopharmacology	3
HBM 5145	Positive Psychology	3
HBM 5146	Physiological Psychology	3
HBM 5147	Health Care Grants	3
HBM 5148	Essentials Of Managed Health Care	3
HBM 5149	Comparative Health Care Systems	3
HBM 5150	Assessment And Planning In Health Programs	3
HBM 5151	Health Psychology/Behavioral Medicine Practicum	3

Fundamental subjects do not count as specialty credit while core subjects are actually a part of the specialty curriculum that must be taken right after fundamental studies and before taking a specialty.

After successful completion of Industrial/Organizational fundamental, core and specialty subjects, students must submit a thesis on a selected topic related to the specialty.

Thesis must be evaluated as a satisfactory to qualify for receiving its credit and qualify for graduation.

11.03.02.03 – M.A. PSYCHOLOGY, MARRIAGE AND FAMILY THERAPY

The MFT program is designed to provide an integrated education experience for adult Students seeking training in marriage and family therapy. Students in the program will critically analyze a broad range of theories of marriage and family therapy. The program's training prepares Students for therapeutic and educational work in a variety of settings including mental health centers, public service agencies, correctional institutions, industry, medical settings, and private practice. Licensing requirements vary between countries and states. If licensing is an objective, candidates must review licenser's requirements.

REQUIREMENTS:

Required = 61 Semester Units

Maximum Credit Transfer = 8 Semester Units

Minimum Taken at AUSTC = 44 Semester Units

2 Credits ALS 6010 (Required)

10 Credits Fundamental Subjects

10 Credits Core Subjects

36 Credits Specialty Subjects

3 Credits Thesis

CURRICULUM:

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental Subjects (10 Semester Units)

Code	Subjects	Semester Units
PSY 5120	Human Behavior and the Social Environment	2
PSY 5121	Cognition, Emotion and Motivation	2
PSY 5122	Human Performance	2
PSY 5123	Judgment and Decision Making	2

PSY 5124	Advanced Statistical Analysis and Design	2

Core Subjects (10 Semester Units)

Code	Core Subjects	Semester Units
PSY 5130	Counseling Theories and Strategies	2
PSY 5131	Ethics in Counseling and Psychotherapy	2
PSY 5132	Psychology of Learning	2
PSY 5133	Sensation and Perception	2
PSY 5134	Human Factors Psychology	2

Specialty Subjects (36 Semester Units):

Code	Subjects	Semester Units
MFT 5140	Human Communication	3
MFT 5141	Positive Psychology	3
MFT 5142	Brief Marriage and Family Therapy	3
MFT 5143	Advanced Techniques for Counseling and Psychotherapy	3
MFT 5144	Couples Therapy	3
MFT 5145	Therapy with Children and Adolescents	3
MFT 5146	Counseling Theories and Strategies	3
MFT 5147	Family Systems Theories	3
MFT 5148	Family Therapy : Concepts and Methods	3
MFT 5149	Psychological Tests and Measurements	3
MFT 5150	Practicum I	3
MFT 5151	Practicum II	3

11.03.03 PH.D., PSYCHOLOGY AND BEHAVIORAL SCIENCES

This degree program is offered to psychologists who obtained their bachelor's and master's degree in psychology and behavioral science; and actually practice the profession either in the United States or overseas.

The Ph.D. Program in School of Behavioral and Social Sciences at American University for Science and Technology strives to provide expert quality training to develop broadly educated psychologists. The doctoral program, as compared to the specialist program, provides more advanced training in applied skills and has a heavier emphasis on scientific inquiry.

The purpose of the doctoral program is to educate trainees who will promote the highest quality psycho-educational and mental health services. The program is based on the scientist-practitioner model of psychology.

Our goal is to educate psychologists who integrate their knowledge of scientific principles with their applied clinical. This integrated approach to science and practice promotes the development of complementary skills fostering a career-long process of psychological investigation, intervention, and evaluation. As scientist-practitioners, our doctoral alumni are able to distinguish fact from opinion in the application of psychological principles to human behavior, to use existing theory and techniques to develop innovative practice in the field, and to develop research to address applied issues.

Graduates are educated to assume a variety of leadership positions in professional psychology. As health care providers, graduates deliver a variety of psychological services directly to children, parents, and families. Graduates may be supervisors of other psychologists and administrators responsible for the development, implementation, and evaluation of educational and mental health programs. As educators, some graduates of the doctoral program will supervise and educate students enrolled in pre-service training at universities and advance the state of scientific knowledge. Regardless of the setting in which graduates will work, they are able to function as scientist-practitioners well versed in collaborative problem-solving.

In addition, doctoral trainees are immersed in the discipline of developmental psychopathology. As such, they are familiar with clinical work and research designs that focus on multiple pathways of development, and view professional practice from a risk and resilience perspective. They seek to find variables that moderate children's multi-final trajectories, thereby identifying potential buffers or protective factors that may inform prevention and intervention.

11.03.03.01 - OBJECTIVES: PH.D., BEHAVIORAL SCIENCES AND PSYCHOLOGY

The objectives of the program are to:

- Enable individuals to continue their formal professional education at the graduate level in the behavioral science of psychology towards additional understanding of theories and practice;
- Provide research and editorial skills,
- Encourage personal growth, self-improvement, intellectual accomplishment, and global awareness; and
- Enable individuals to integrate formal academic education with individual and community problems so that meaningful personalized education takes place

11.03.03.02 – PHD, PROGRAM REQUIREMENTS:

Students must have a broad understanding of the major disciplines that comprise study of behavioral sciences and their application to organizational, clinical and analytical settings. Graduates with Master's degree in Psychology and Behavioral Science are expected to meet the prerequisites and knowledge obtained through out AUSTC's Bachelor of Arts and Master's degree in Psychology. If the required knowledge is not reflected in student's submitted academic transcripts, he/she must take the missing subjects to qualify for admission without adding any credit towards Ph.D. graduation.

Ph.D. degree course work phase entails a minimum of 60 credit hours of advanced work beyond the master's degree. Student may transfer up to 8 credits from an accredited or recognized graduate school.

Curriculum includes up to 10 Credits of fundamental subjects, 10 Credits of core subjects and 32 Credits or more of focused advanced specialty subjects.

I addition to course work students are required to submit a concept paper and a publishable quality dissertation under the guidance of professors. This phase culminates in written and oral comprehensive examinations covering area of specialization, research methods, and other areas deemed appropriate by the doctoral dissertation committee.

Doctoral dissertation research is expected to make a major contribution to the state of knowledge in the candidate's field. The dissertation defense is a final oral examination administered according to procedures established by the Graduate School.

Required = 60 Semester Units

Maximum Credit Transfer = 8 Semester Units

Minimum Taken at AUSTC = 52 Semester Units

2 Information Research Strategies (Optional, if not taken earlier)

20 Credits - Fundamental and core subjects

30 Credits - Advanced specialty subjects

2 Credits - Submission of Concept Paper,

2 Credits - Comprehensive Exam

6 Credits - Dissertation

11.03.03.03 - CURRICULUM

ALS 6010 Information Research Strategies must be the first subject taken at AUSTC If not previously taken or transferred from a recognized graduate educational facility.

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental Subjects (10 Semester Units)

Code	Subjects	Semester Units
RES 6120	Statistical Modeling and Analysis for Complex Data Problems	2
RES 6121	Optimal Experimental Design	2
RES 6122	Mathematical Modeling	2
RES 6123	Research Methods and Design	2
RES 6124	Dissertation Planning, Writing, and Defending	2

Core Subjects (10 Semester Units)

Code	Core Subjects	Semester Units
PSY 6130	Positive Psychology	2
PSY 6131	Social Psychology	2
PSY 6132	Dynamic Psychotherapy	2
PSY 6133	Personality Theories	2
PSY 6134	Research Methods for the Behavioral Sciences	2

After successful completion of fundamental and core subjects, student may select to enroll for one of the following areas of specialty focus:

Psychology and Behavioral Science Focus Subjects (30 Semester Units)

Code	Subjects	Semester Units
PSY 6140	Multicultural Psychology	3
PSY 6141	The Psychology of Learning and Motivation	3
PSY 6142	Cognitive Psychology	3
PSY 6143	Psychology of Attitudes and Attitude Changes	3
PSY 6144	Sensation and Perception	3
PSY 6145	Psychology of Gender	3
PSY 6146	Positive Psychology Coaching	3
PSY 6147	School Psychological Consultation	3
PSY 6148	Adult Development and Aging	3
PSY 6149	Applied Psychology Project	3

Industrial and Organizational Psychology Focus Subjects (30 Semester Units)

Code	Subjects	Semester Units
IOP 6140	Psychological Tests and Measurements	3
IOP 6141	Organizational Industrial Psychology	3
IOP 6142	Survey Research	3
IOP 6143	Organizational Behavior and Management	3
IOP 6144	Family Therapy : Concepts and Methods	3
IOP 6145	Applied Statistics	3
IOP 6146	Organizational Industrial Psychology	3
IOP 6147	Multivariate Statistics	3
IOP 6148	Applied I/O Psychology Project	3
IOP 6149	Industrial / Organizational Psychology Practicum	3

Health Psychology and Behavioral Medicine Focus Subjects (30 Semester Units)

Code	Subjects	Semester Units
HBM 6140	Advances in Psychology Research	3
HBM 6141	Psychology of Chronic Illness	3
HBM 6142	Behavioral Medicine I	3
HBM 6143	Behavioral Medicine II	3
HBM 6144	Pain Management	3
HBM 6145	Psychopharmacology	3
HBM 6146	Physiological Psychology	3
HBM 6147	Counseling Theory and Practice	3
HBM 6148	Health Psychology/Behavioral Medicine Practicum	3
HBM 6149	Applied Health Psychology/Behavioral Medicine Project	3

Marriage and Family Therapy Focus Subjects (30 Semester Units)

Code	Subjects	Semester Units
MFT 6140	Brief Marriage and Family Therapy	3
MFT 6141	Advanced Techniques for Counseling and Psychotherapy	3
MFT 6142	Couples Therapy	3
MFT 6143	Therapy with Children and Adolescents	3
MFT 6144	Family Systems Theories	3
MFT 6145	Family Therapy: Concepts and Methods	3
MFT 6146	Abnormal Child Psychology	3
MFT 6147	Conducting Psychological Testing and Assessment	3
MFT 6148	Practicum I	3
MFT 6149	Practicum II	3

After successful completion of information research strategies, fundamental subjects, core and focus specialty subjects, all doctoral degree students must take research activities' curriculum as follows:

Doctoral Research Activities (10 Semester Units)

Code	Activity	Semester Units
RES 7160	Concept Paper	2
RES 7161	Doctoral Comprehensive Examination	2
RES 7162	Doctoral Dissertation Research I	2
RES 7163	Doctoral Dissertation Research II	2
RES 7164	Doctoral Dissertation Research III	2

11.04 - School of Engineering

The School of Engineering is a diverse community of scholars, learners, and professional staff dedicated to the development and application of advanced technologies, and working together to enhance the quality of life for all.

We are creative problem solvers, innovators, inventors, and entrepreneurs, applying our skills for the advancement of knowledge, service to our community, and the economic development of the state of California and beyond.

We prepare our graduates to be global leaders in a wide range of engineering disciplines and to create new knowledge, products, and services.

Targeted students' population: Due to the applied method of education at AUSTC, and to assure that students have received the required fundamental engineering studies and hands on training, only graduates of accredited or recognized engineering associate degree programs are accepted for admission to engineering undergraduate degree programs.

Expected Student Outcomes: As designed to meet market requirement and professional measures, graduates receiving baccalaureate degrees in all engineering disciplines will demonstrate:

1. Ability to apply knowledge of mathematics, science, and engineering
2. Ability to design and conduct experiments, as well as to analyze and interpret data
3. Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4. Ability to function on multi-disciplinary teams
5. Ability to identify, to formulate, and to solve engineering problems
6. Ability to Understand professional and ethical responsibilities
7. Ability to communicate effectively
8. Ability to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice, Recognition of the need for, and an ability to engage in, life-long learning and knowledge of contemporary issues

Engineers from all fields are heavily involved in the solution of technological and socio-technological problems; industry's needs are for balanced teams of both men and women from different engineering areas. Therefore, the school's goal is to stimulate our students to become creative, responsible engineers, aware of the social implications of their work, and flexible enough to adjust to the rapid changes taking place in the world and, consequently, in all branches of engineering. The School of Engineering offers undergraduate majors in civil, architectural, electrical, mechanical engineering and computer science.

Based on the fact that all accepted students to engineering undergraduate programs are primarily graduates of accredited or recognized engineering associated degree programs, fundamental engineering subjects are transferred from the associate degree after an in-depth review of each associate degree program. Usually, associate degree graduates qualify for transfer of up to 60 semester units, and may expand to 88 semester units for those who attended superior technical diploma after associate degree graduation.

Because the same fundamental concepts underlie all branches of engineering, all applicants transcripts are reviewed against the listing of fundamental engineering subjects that are usually included in freshman-year and first year's courses, and the choice of a specific engineering major is specified in comparison to associate degree specialty to admit new students directly to third year's program unless certain associate degree graduates miss a number of fundamental engineering subjects, then they may be delayed until the required subjects are taken at AUSTC.

All of the engineering curricula are based on an intense study of mathematics and basic sciences supporting the fundamentals of each engineering discipline. Those principles are applied to the understanding and solution of problems of current interest and importance in the field. Each curriculum is designed to provide the knowledge and ability necessary for practice, or for successful graduate study.

Entering engineering students who have chosen a specific major should follow the particular program listed in this section.

To meet graduation requirements, students enrolled in the School of Engineering (SOE) must satisfactorily complete all courses of the degree program in which they are enrolled and obtain a grade point average of 2.00 or better in all required science, mathematics, and engineering courses (including professional electives). At the discretion of the dean, students who do not demonstrate satisfactory progress may be required to leave the SOE.

Student Advisement: Engineering students are advised by engineering faculty members. While the student is in University School, advising takes place at AUSTC; once the student is transferred to the SOE, advising takes place at the departmental level. The office of the Associate Dean of Engineering provides non-routine advising, while faculty mentors are the main contact and advisory panel.

11.04.01- Civil and Constructional Engineering

The Department of Civil and Constructional Engineering offers a curriculum leading to the Bachelor of Engineering (BE.) degree in civil engineering or Architectural Engineering. The department also offers the Master of Engineering (ME.)

Department Mission Statement: Consistent with the missions of the American University for Science and Technology and the School of Engineering (SOE), the Department of Civil and Constructional Engineering: seeks to prepare students to practice professionally in the national and international marketplace in the field of Civil and Constructional Engineering through the provision of high quality undergraduate and graduate educational programs and research opportunities; provides an environment that encourages and supports faculty career development and professional/ community service. Program mission is **c**onsistent with the mission of the Department of Civil and Constructional Engineering, the BE Program will prepare graduates for successful careers, advanced studies at the graduate level, and lifelong learning based upon a solid foundation of technical ability, high standards of professional ethics, and strong communication skills.

11.04.01.01 - PROGRAM OBJECTIVES:

1) Produce graduates who are able to successfully practice civil engineering.

2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: environmental engineering, geotechnical engineering, structural engineering, transportation engineering, water resources engineering.

3) Prepare graduates for personal and professional success with awareness of and commitment to their ethical and social responsibilities, and diversity, both as individuals and in team environments.

4) Prepare graduates to be interested in, motivated for, and capable of pursuing continued lifelong learning through further graduate education or other training programs in engineering or related fields.

Program Description: Civil Engineers and Architects are responsible for researching, developing, planning, designing, constructing, and managing many of the complex systems and facilities essential to modern civilization. These include environmental engineering systems; water supply and pollution control systems; all types of transportation systems, from pipelines to city streets; structural systems from residential buildings to city skyscrapers, power plants, and offshore platforms; and all types of geotechnical systems from foundations to dams. Civil engineers play important roles in planning and administration with government agencies at all levels, especially those dealing with public works, transportation, environmental control, water supply, and renewable energy.

The curriculum provides students with an excellent background to pursue graduate study or to enter directly into professional practice in industry or government after graduation.

As students are all associate engineers who transferred a total of 60 semester units or more from other accredited or recognized postsecondary engineering education facilities, they have completed and obtained the credit equivalent to the freshman and sophomore years including

mathematics, chemistry, physics, and engineering science common to all engineering curriculums as well as mechanics of materials and two laboratories.

Students attend the last two years at AUSTC to develop a proficiency in environmental engineering, geotechnical engineering, structural engineering, architectural engineering and transportation engineering. They can also meet their own professional goals through the selection of professional electives in these areas as well as construction management. Professional electives are selected in consultation with the student's advisor.

11.04.01.02 - BACHELOR OF CIVIL ENGINEERING:

REQUIREMENTS:

Required = 142 Semester Units
Maximum Credit Transfer = 88 Semester Units
Minimum Taken at AUSTC = 54 Semester Units

40 Credits - Basic General Studies (ALS 1007 must be the first taken at AUSTC),
27 Credits - Fundamental Architectural Engineering Subjects
27 Credits - Core Civil Engineering Subjects
48 Credits - Civil Engineering Concentration Subjects
3 Credits - Graduation Project

CURRICULUM:

GENERAL KNOWLEDGE:

As detailed in (section 10.02) above

Fundamental (27 Semester Units):

Code	Subjects	Semester Units
ARCE 4120	Architecture Principles	3
ARCE 4121	Introduction to Building Information Modeling	3
ARCE 4122	Fundamentals of Engineering Thermodynamics	3
ARCE 4123	Fundamentals of Structural Analysis	3
ARCE 4124	Structural Concrete Design	3
ARCE 4125	Soil Mechanics and Foundations	3
ARCE 4126	Construction Equipment and Methods	3
ARCE 4127	Before Building: Site Planning in the Digital Age	3
ARCE 4128	Engineering Ethics and Professional Practice	3

Civil Engineering Core (48 Semester Units):

Code	Subjects	Semester Units
CE 4130	Civil Engineering	3
CE 4131	Civil Engineering Materials	3
CE 4132	Structural Analysis	3
CE 4133	Transportation Engineering	3
CE 4134	Water Resources Planning and Management	3
CE 4135	Bituminous Materials	3
CE 4136	Matrix Structural Analysis	3
CE 4137	Structural Concrete Design	3
CE 4138	Structural Timber Design	3

Civil Engineering Concentration (48 Semester Units):

Code	Subjects	Semester Units
CE 4140	Topological Quantum Field Theory And Four Manifolds	3
CE 4141	GIS and Cartographic Modeling	3
CE 4142	Mathematical Foundation of Geodesy	3
CE 4143	Geodesy	3
CE 4144	Urban infrastructure systems	3
CE 4145	Structural analysis and design	3
CE 4146	Hydro-systems engineering	3
CE 4147	Water Resources Planning and Management	3
CE 4148	Bridge design and management	3
CE 4149	Foundation Design: Theory and Practice	3
CE 4150	Structural Concrete Design	3
CE 4151	Managing engineering and construction processes	3

Code	Research Subjects / Activity	Semester Units
RES 4129	Graduation Project	3

11.04.01.03 - BACHELOR OF ARCHITECTURAL ENGINEERING

REQUIREMENTS:

Required = 142 Semester Units
Maximum Credit Transfer = 88 Semester Units
Minimum Taken at AUSTC = 54 Semester Units

40 Credits - Basic General Studies (ALS 1007 must be the first taken at AUSTC),
27 Credits - Fundamental Architectural Engineering Subjects
27 Credits - Core Architectural Engineering Subjects
48 Credits - Architectural Engineering Concentration Subjects
3 Credits - Graduation Project

CURRICULUM:

GENERAL KNOWLEDGE (40 Semester Units)

As detailed in (section 10.02) above

Fundamental (27 Semester Units):

Code	Subjects	Semester Units
ARCE 4120	Architecture Principles	3
ARCE 4121	Introduction to Building Information Modeling	3
ARCE 4122	Fundamentals of Engineering Thermodynamics	3
ARCE 4123	Fundamentals of Structural Analysis	3
ARCE 4124	Structural Concrete Design	3
ARCE 4125	Soil Mechanics and Foundations	3
ARCE 4126	Construction Equipment and Methods	3
ARCE 4127	Before Building: Site Planning in the Digital Age	3
ARCE 4128	Engineering Ethics and Professional Practice	3

Architectural Engineering Core (27 Semester Units):

Code	Subjects	Semester Units
ARCE 4130	Construction and Detailing for Interior Design	3
ARCE 4131	Building Construction Materials	3

ARCE 4132	Fundamentals of Building Construction: Materials and Methods	3
ARCE 4133	Mechanics of Materials	3
ARCE 4134	Fundamentals of HVAC Control Systems	3
ARCE 4135	The Construction of Houses	3
ARCE 4136	Formwork for Concrete Structures	3
ARCE 4137	Introduction to Geometrics	3
ARCE 4138	Landscape Surveying	3

Architectural Engineering Concentration Curriculum (48 Semester Units):

Code	Subjects	Semester Units
ARCE 4141	Matrix Structural Analysis	3
ARCE 4142	Building Specifications and Contracts	3
ARCE 4143	Construction Estimating	3
ARCE 4144	Design of Plumbing, Electricity and Acoustics	3
ARCE 4145	Structural Steel Design	3
ARCE 4146	Architectural Drafting and Design	3
ARCE 4147	Wood and Masonry Design	3
ARCE 4148	Construction Planning and Scheduling	3
ARCE 4149	Construction Safety and Health	3
ARCE 4150	Construction Management	3
ARCE 4151	Sustainable Construction and Design	3
ARCE 4152	Introduction to Consulting Engineering	3

Architectural Engineering Graduation Project (3 Semester Units):

Code	Activity	Semester Units
RES 4129	Graduation Project	3

111.04.01.03 - ME, Architectural Engineering - Construction Management

This degree program targets Architectural, Civil or Constructional Engineers who are interested in obtaining Pragmatic skills and knowledge across functional business areas including marketing, organizational behavior, human resources, management, strategic management, accounting/finance, operations, and information technology.

EDUCATIONAL OBJECTIVES:

It focuses on improving student's ability to

1) Recognize and use modern management techniques, skills and tools;
2) The ability to lead and contribute in cross-functional teams in global and multicultural environments;
3) A thorough understanding of professional, ethical, and social responsibility;
4) Ability to use an array of tools to communicate effectively in relevant venues;
5) Recognition of the need for and the desire to engage in lifelong learning;
6) Hold positions of leadership in a rapidly-changing, technologically-driven business climate;
7) Develop and execute strategic as well as tactical plans;
8) Be starting entrepreneurial companies, managing programs, driving; focused change, and creating value; and
9) Drive collaborative communication and relationship building across organizational, cultural and social lines and stimulate innovation for sustained success.

REQUIREMENTS

To graduate with a Master of Engineering, Architectural Engineering – Construction Management, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transfered)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits – Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental:

Code	Subjects	Semester Units
ARCE 5120	Construction Planning and Scheduling	2
ARCE 5121	Physical Performance of Buildings	2
ARCE 5122	Method of Construction Projects Risk Assessment	2
ARCE 5123	Statics and Strength of Materials for Building Construction	2
ARCE 5124	Control of Traffic Systems in Buildings	2

Core:

Code	Subjects	Semester Units
ARC 5130	Construction Equipment and Methods	2
ARC 5131	Accounting Fundamentals for Construction	2
ARC 5132	Construction Project Scheduling and Control	2
ARC 5133	Legal Environment for Engineers and Architects	2
ARC 5134	Probabilistic Methods for Structural Safety Evaluation	2

Specialty:

Code	Subjects	Semester Units
CME 5140	Construction Management	3
CME 5141	Structural Analysis	3
CME 5142	Construction Cost Estimating	3
CME 5143	Construction Project Administration	3
CME 5144	Construction Materials	3
CME 5145	Advanced Construction Accounting and Finance	3
CME 5146	Project Delivery Systems for Construction	3

Code	Research Subjects / Activity	Semester Units
RES 5699	Thesis	2

11.04.01.04 - ME, Architectural Engineering - Building Systems

This program focuses on building systems in structural design topics such as Plumbing and Fire Protection Design, Building Enclosure Design, HVAC Systems Design, Building Envelope Rehabilitation Engineering, Dynamics of Fire, Fire Protection of Buildings, Computer Modeling of Fire, Energy Conservation Design in Buildings, Communication and Electrical Systems in Buildings, Acoustics and Lighting, Heating and Refrigeration, Measurement and Instrumentation in Architectural Engineering, Structural Probability & Probabilistic Bases of Design and Indoor Air Pollution.

EDUCATIONAL OBJECTIVES:

It focuses on improving student's ability to

1) Recognize and use modern building systems science, techniques, skills and tools;
2) Perform building systems analysis on structures comprised of many types of materials and structural components and subjected to gravity, wind and/or seismic loads.
3) Design building system members and connections using many types of materials and structural components in accordance with current building codes and specifications.
4) Complete a structural engineering project satisfying the complex requirements of modern structures, safety, health and environmental requirement.
5) Demonstrate professional architectural engineering knowledge.

REQUIREMENTS

To graduate with a Master of Engineering, Architectural Engineering – Building Systems, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits – Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Curriculum (10 Semester Units)

Code	Subjects	Semester Units
ARCE 5120	Construction Planning and Scheduling	2
ARCE 5121	Physical Performance of Buildings	2
ARCE 5122	Method of Construction Projects Risk Assessment	2
ARCE 5123	Statics and Strength of Materials for Building Construction	2
ARCE 5124	Control of Traffic Systems in Buildings	2

Core (10 Semester Units)

Code	Subjects	Semester Units
ARC 5130	Construction Equipment and Methods	2
ARC 5131	Accounting Fundamentals for Construction	2
ARC 5132	Construction Project Scheduling and Control	2
ARC 5133	Legal Environment for Engineers and Architects	2
ARC 5134	Probabilistic Methods for Structural Safety Evaluation	2

Specialty (21 Semester Units)

Code	Subjects	Semester Units
CME 5140	Construction Management	3
CME 5141	Structural Analysis	3
CME 5142	Construction Cost Estimating	3
CME 5143	Construction Project Administration	3
CME 5144	Construction Materials	3
CME 5145	Advanced Construction Accounting and Finance	3
CME 5146	Project Delivery Systems for Construction	3

11.04.01.05 - ME, Architectural Engineering - Construction

This degree program Courses focus on structural design topics such as advanced design of structural steel-members and systems; design of light gage-metal members and structures, reinforced concrete-members and structures, wood structures, masonry structures, foundations; and selection of structural systems. Courses on advanced structural, analysis including applications of the finite element-method, structural dynamics, and structural stability, also are presented to provide a broader theoretical background for structural design.

Educational Objectives:

It focuses on improving student's ability to

1) Recognize and use modern construction science, techniques, skills and tools;
2) Perform structural analysis on structures comprised of many types of materials and structural components and subjected to gravity, wind and/or seismic loads.
3) Design structural members and connections using many types of materials and structural components in accordance with current building codes and specifications.
4) Complete a structural engineering project satisfying the complex requirements of modern structures.
5) Demonstrate professional structural engineering knowledge.

REQUIREMENTS

To graduate with a Master of Engineering, Architectural Engineering – Construction, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis

CURRICULUM:

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental (10 Semester Units)

Code	Subjects	Semester Units
ARCE 5120	Construction Planning and Scheduling	2
ARCE 5121	Physical Performance of Buildings	2
ARCE 5122	Method of Construction Projects Risk Assessment	2
ARCE 5123	Statics and Strength of Materials for Building Construction	2
ARCE 5124	Control of Traffic Systems in Buildings	2

Core (10 Semester Units)

Code	Subjects	Semester Units
ARC 5130	Construction Equipment and Methods	2
ARC 5131	Accounting Fundamentals for Construction	2
ARC 5132	Construction Project Scheduling and Control	2
ARC 5133	Legal Environment for Engineers and Architects	2
ARC 5134	Probabilistic Methods for Structural Safety Evaluation	2

Specialty (21 Semester Units)

Code	Subjects	Semester Units
CON 5140	Statics and Strength of Materials for Construction	3
CON 5141	Foundation Design: Theory and Practice	3
CON 5142	Masonry Structural Design	3
CON 5143	Structural Analysis with the Finite Element Method	3
CON 5144	Beam Structures: Classical and Advanced Theories	3
CON 5145	Analysis of Plates and Shells	3
CON 5146	Earthquake Resistant Buildings	3

11.04.01.06 - ME, CIVIL ENGINEERING

This degree program focuses on foundation design topics such as Surveying with Construction and Applications, Structural Analysis, Foundation Analysis and Design, Soil Mechanics and Foundations, Open Channel Hydraulics, Hydro-systems engineering and Management, Traffic and Highway Engineering, Engineering Fluid Mechanics, Design of Wood Structure ASD/LRFD, Seismic Design of Buildings and Bridges, Introduction to Optimum Design, Steel Structure Design and Behavior, CE 5155 Subsurface Hydrology, Contaminant Hydrogeology, Water Resources Engineering

Educational Objectives:

It focuses on improving student's ability to

1) Recognize and use advanced civil engineering science, techniques, skills and tools;
2) Perform foundation analysis on structures comprised of many types of backbone, resources, landscape, materials, and structural components.
3) Design foundation and structural members and connections using many types of materials and structural components in accordance with current building codes and specifications.
4) Complete a civil engineering project satisfying the complex requirements of modern structures.
5) Demonstrate professional Civil engineering knowledge.

REQUIREMENTS

To graduate with a Master of Engineering, Civil Engineering, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Fundamental (10 Semester Units)

Code	Subjects	Semester Units
ARCE 5120	Construction Planning and Scheduling	2
ARCE 5121	Physical Performance of Buildings	2
ARCE 5122	Method of Construction Projects Risk Assessment	2
ARCE 5123	Statics and Strength of Materials for Building Construction	2
ARCE 5124	Control of Traffic Systems in Buildings	2

Core (10 Semester Units)

Code	Subjects	Semester Units
CE 5130	Pre-stressed Concrete Design	2
CE 5131	Concrete and Masonry Building Systems	2
CE 5132	Advanced Structural Timber Design	2
CE 5133	Structural Dynamics	2
CE 5134	Project Delivery Systems for Construction	2

Specialty (21 Semester Units)

Code	Subjects	Semester Units
CE 5140	Bridge Design and Construction	3
CE 5141	Highway Design	3
CE 5142	Transportation Planning	3
CE 5143	Airport Planning and Design	3
CE 5144	Railroad Track Engineering and Design	3
CE 5145	Stochastic Hydrology	3
CE 5146	Water Resources Planning and Management	3

11.04.02 - COMPUTER SCIENCE

The Bachelor of Engineering (BE) degree in computer science is offered by the Department of Electrical and Computer Engineering (ECE). Specialization in computer science is also available within the Master of Engineering (ME) and Doctor of Philosophy (Ph.D.) programs.

11.04.02.01 – BE., COMPUTER SCIENCE

EDUCATIONAL OBJECTIVES:

The objectives of the computer-engineering program at AUSTC are the following:

(1) Produce graduates who are able to practice computer engineering to serve local and international industries.

(2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: computer hardware and software design, embedded systems, computer network design, system integration, electronic design automation.

(3) Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.

(4) Prepare graduates who are capable of maintaining and improving their technical competence through lifelong learning, including entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

REQUIREMENTS

Required = 133 Semester Units
Maximum Credit Transfer = 88 Semester Units
Minimum Taken at AUSTC = 45 Semester Units

40 Credits - Basic General Studies (ALS 1007 must be the first taken at AUSTC),
27 Credits - Fundamental Electrical Engineering Subjects
27 Credits - Core Computer Science Subjects
36 Credits - Computer Science Concentration Subjects
3 Credits - Graduation Project

CURRICULUM

GENERAL KNOWLEDGE (40 Semester Units)

As described (Section 10.02) above

FUNDAMENTAL (27 Semester Units)

Code	Fundamental Subjects	Semester Units
EE4120	Basic Electronics	3

EE 4121	Circuits I	3
EE 4122	Circuits II	3
EE 4123	Calculus with Technology I	3
EE 4124	Calculus with Technology II	3
EE4125	Electronic Devices & Circuits	3
EE4126	Digital Electronics and Microprocessor Fundamentals	3
EE 4127	Communication Systems	3
EE4128	Programmable Logic Devices	3

CORE (27 Semester Units)

Code	Core Subjects	Semester Units
CS 4130	Introduction to Computer Science	3
CS 4131	Programming Languages: Principles and Practices	3
CS 4132	Data Abstraction and Problem Solving with Java	3
CS 4133	Operating System Concepts and Essentials	3
CS 4134	C++ Programming Language	3
CS 4135	Data Structure and Algorithms in C++/ Part I	3
CS 4136	Data Structure and Algorithms in C++/ Part II	3
CS 4137	JAVA Programming	3
CS 4138	Data Structure in JAVA	3

CONCENTRATION (36 Semester Units)

Code	Concentration / Specialty / Focus Subjects	Semester Units
CS 4140	Computer Networking	3
CS 4141	Service-Oriented Architecture and Design Strategies	3

CS 4142	Systems Analysis and Design	3
CS 4143	TCP/IP Protocol Suite	3
CS 4144	Information Technology Project Management	3
CS 4145	Analysis and Design of Information Systems	3
CS 4146	Introduction to Artificial Intelligence	3
CS 4147	Visual Basic Programming	3
CS 4148	Advanced Visual Basic Programming	3
CS 4149	Data Structure in JAVA	3
CS 4151	Robotics	3
CS 4150	Software Engineering Theory and Practice	3

RESEARCH (3 Semester Units)

Code	Research Subjects / Activity	Semester Units
RES 4129	Graduation Project	3

11.04.02.02 - ME, COMPUTER SCIENCE

Courses focus on computer engineering in specialty level including related electrical engineering and communication theories, Operating System design and concepts, Network Security Assessment, Data Structure, Robotics, Data Mining Techniques, Algorithms and software engineering with an optional exposure to design of microprocessor based control systems.

Educational Objectives:

It focuses on improving student's ability to

1) Recognize computer systems structural analysis on software comprised of many types of methods and structural components and subjected to logic based on engineering theories.
2) Be able to build, rebuild, review and assess network systems including local, wide and vast area structures
3) Design technical and business applications and connections using many types of techniques and protocols in accordance with state of art practices, methods and tools.
4) Complete a software engineering project satisfying the complex requirements of latest concepts and techniques.
5) Demonstrate professional software engineering knowledge.

REQUIREMENTS

To graduate with a Master of Engineering, Civil Engineering, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Code	Fundamental Subjects	Semester Units
CS 5120	Compiler Design, Theory, and Optimization	2
CS 5121	Theory of Computation	2
CS 5122	Advanced Algorithms	2
CS 5123	Parallel Algorithms	2
CS 5124	Advanced Operating Systems	2

Code	Core Subjects	Semester Units
CS 5132	Mobile Networks	2
CS 5133	Systems Performance Analysis	2
CS 5134	Software/Hardware Design of Multimedia Systems	2
CS 5130	Advanced Computer Architecture	2
CS 5131	Distributed Systems	2

Code	Concentration / Specialty / Focus Subjects	Semester Units
CS 5140	GPU and Multi-core Programming	3
CS 5141	Computer Graphics: Advanced Rendering and Modeling	3
CS 5142	Data Visualization	3
CS 5143	Immersive Virtual Environments	3
CS 5144	Human-Computer Interactions and Usability Testing	3

CS 5145	Advanced Artificial Intelligence	3
CS 5146	Computational Intelligence - Theory and Application	3

Code	Research Subjects / Activity	Semester Units
RES 5699	Thesis	2

11.04.03 - Electrical Engineering

The Bachelor of Engineering (BE) degree in electrical engineering is offered by the Department of Electrical and Computer Engineering (ECE). The department also offers Master's degree (ME) and Doctor of Philosophy (Ph.D.) degree.

Program Description: Since instrumentation is at the heart of modern science and technology, electrical engineers are employed not only in the computer, electronics, communications, and power industries, but also in diverse enterprises such as transportation, the chemical industry, large hospitals, and government laboratories.

The curriculum emphasizes the scientific basis of electrical engineering and the application of mathematical analysis to engineering problems. Work is required in network and systems theory, atomic physics and solid state, electromagnetic theory, and electronics. Creative use of scientific principles in problems of engineering design is stressed, particularly in the senior year. The development of computer hardware and software is a part of many electrical engineering courses.

Capstone Design Courses provide the opportunity to work on a multidisciplinary team in a senior capstone design project.

11.04.03.02 - BE, ELECTRICAL ENGINEERING

EDUCATIONAL OBJECTIVES:

1) Produce graduates who are able to practice electrical engineering to serve state and regional industries, government agencies, or national and international industries.

2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: analog electronics, digital electronics, communication systems, computer-based systems, control systems.

3) Prepare graduates for personal and professional success with awareness of and commitment to their ethical and social responsibilities, both as individuals and in team environments.

4) Prepare graduates who are capable of maintaining and improving their technical competence through lifelong learning, including entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

REQUIREMENTS

Required = 133 Semester Units
Maximum Credit Transfer = 88 Semester Units
Minimum Taken at AUSTC = 45 Semester Units

40 Credits - Basic General Studies (ALS 1007 must be the first taken at AUSTC),
27 Credits - Fundamental Electrical Engineering Subjects
27 Credits - Core Computer Science Subjects
36 Credits - Computer Science Concentration Subjects
3 Credits - Graduation Project

CURRICULUM

GENERAL KNOWLEDGE (40 Semester Units)

As described (Section 10.02) above

FUNDAMENTAL (27 Semester Units)

Code	Subjects	Semester Units
EE 4120	Basic Electronics	3
EE 4121	Circuits I	3
EE 4122	Circuits II	3
EE 4123	Calculus with Technology I	3
EE 4124	Calculus with Technology II	3
EE 4125	Electronic Devices & Circuits	3
EE 4126	Digital Electronics and Microprocessor Fundamentals	3
EE 4127	Communication Systems	3
EE 4128	Programmable Logic Devices	3

CORE (27 Semester Units)

Code	Subjects	Semester Units
EE 4130	Electrical Machinery	3
EE 4131	Communication Systems	3
EE4132	Introduction to Programmable Controllers	3

EE 4133	Power Electronics Fundamentals	3
EE 4134	Introduction to Optical Fiber Communication Systems	3
EE 4135	Digital Design Fundamentals	3
EE 4136	Physics and Technology of Semiconductor Devices	3
EE 4137	C++ and Mat-lab Programming	3
EE 4138	Data Communications	3

CONCENTRATION (27 Semester Units)

Code	Subjects	Semester Units
EE 4140	Instrumentation	3
EE 4141	Computer Architecture and Design	3
EE4142	Programmable Logic Devices	3
EE 4143	Microcomputer Interfacing	3
EE 4144	Digital Signal Processing Applications	3
EE4145	Real-Time Robotics Systems	3
EE 4146	VLSI Circuits Design	3
EE 4147	Industrial Robotic Vision Systems and Advanced Programming	3
EE 4148	Advanced Circuits and Controls	3
EE 4149	In-Vehicle Communication Networks	3
EE 4150	Wireless Communications	3
EE 4151	Electrical Project Development and Troubleshooting	3

Code	Research Subjects / Activity	Semester Units
RES 4129	Graduation Project	3

Minor in Electrical Engineering: Students interested in pursuing a minor in electrical engineering should speak with the department chairperson to discuss course requirements.

11.04.03.03 - ME, ELECTRICAL ENGINEERING

Courses focus on Power Systems, Electromagnets, Electromechanical Motion, Digital Communication, Antennas, Operational Amplifiers, Introduction to Radar Systems, Telecommunications and Data Scheduling and Transmission Strategies.

Educational Objectives:

It focuses on improving student's ability to :

1) Be able to solve an original research problem at the field of electrical engineering.
2) Be able to solve an original research problem at the field of electrical engineering. (six major areas in department including communications, digital systems, electronics, electromagnetics, power systems, and controls)
3) Be able to use experimental and computational skills to solve electrical engineering research problems.
4) Be able to use mathematical skills to solve electrical engineering problems.
5) Become a professional electrical engineer.
6) Demonstrate professional electrical engineering knowledge.

REQUIREMENTS

To graduate with a Master of Engineering, Civil Engineering, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Code	Fundamental Subjects	Semester Units
EE 5120	Test Engineering Fundamentals	2
EE 5121	Electronic Manufacturing	2
EE 5122	Quality Control	2
EE 5123	EMC Test Engineering Fundamentals	2
EE 5124	Digital Hardware Testing	2

Code	Core Subjects	Semester Units
EE 5130	Optical System Design and Testing	2
EE 5131	Advanced Methods in Power Systems	2
EE 5132	Transient Analysis Methods	2
EE 5133	Advanced Electric Machinery and Drives	2
EE 5134	Power System Protection	2

Code	Concentration / Specialty / Focus Subjects	Semester Units
EE 5140	Power System Operations	3
EE 5141	Computer Modeling of Power Systems	3
EE 5142	Distribution Engineering	3
EE 5143	Wind Power	3
EE 5144	Advanced Propulsion for Hybrid Electric Drive Vehicles	3
EE 5145	Engineering Electromagnetic	3
EE 5146	Solar Photovoltaic Science and Engineering	3

Code	Research Subjects / Activity	Semester Units
RES 5699	Thesis	2

11.04.04 - Mechanical Engineering

The Bachelor of Engineering (BE) degree in mechanical engineering is offered by the Department of Mechanical, Industrial, and Systems Engineering (MCISE). The department also offers the Master of Engineering (ME) and Doctor of Philosophy (Ph.D.)

Program Mission Statement: Provide high quality undergraduate and graduate education that will prepare our students for careers as accomplished, productive, and responsible engineers. Conduct high quality research that supports our educational goals, state and national needs, and advances the state of knowledge in our fields of study. Provide professional expertise, service, and outreach to local and national industries and agencies. Promote the intellectual and economic vitality through rigorous academic programs, highly competitive and collaborative research, and a lasting commitment to community outreach activities.

11.04.04.01 - BE, MECHANICAL ENGINEERING

EDUCATIONAL OBJECTIVES:

1) Produce graduates who are able to successfully practice mechanical engineering to serve state, local, national, and international industries and government agencies.

2) Produce graduates with the necessary background and technical skills to work professionally as individuals or in teams in the two major stems of mechanical engineering including mechanical and thermal systems.

3) Prepare graduates for personal and professional success with an understanding and appreciation of ethical behavior, social responsibility, and diversity, both as individuals and in team environments.

4) Prepare graduates to be interested, motivated, and capable of pursuing continued lifelong learning through further graduate education, short courses, or other training programs in engineering or related fields.

REQUIREMENTS

Required = 133 Semester Units
Maximum Credit Transfer = 88 Semester Units
Minimum Taken at AUSTC = 45 Semester Units

40 Credits - Basic General Studies (ALS 1007 must be the first taken at AUSTC)
27 Credits - Fundamental Electrical Engineering Subjects
27 Credits - Core Computer Science Subjects
36 Credits - Computer Science Concentration Subjects
3 Credits - Graduation Project

CURRICULUM

GENERAL KNOWLEDGE (40 Semester Units)
As described (Section 10.02) above

FUNDAMENTAL (27 Semester Units)

Code	Fundamental Subjects	Semester Units
ME 4120	Mechanics of Materials	3
ME 4121	Thermodynamics	3
ME 4122	Integrated Design and Manufacturing	3
ME 4123	Dynamics	3
ME 4124	Fluid Mechanics	3
ME 4125	Heat Transfer	3
ME 4126	Product Realization	3
ME 4127	Engineering Design Processes	3
ME 4128	Statics	3

CORE (27 Semester Units)

Code	Core Subjects	Semester Units
ME 4130	Intermediate Mechanics of Materials	3
ME 4131	Fundamentals of Experimental Stress Analysis	3
ME 4132	Failure of Materials in Mechanics	3
ME 4133	Engineering Biomechanics	3
ME 4134	Principles of Energy Conversion	3

ME 4135	Computational Fluids Engineering	3
ME 4136	Internal Combustion Engines	3
ME 4137	Compressible Flow/Gas Dynamics	3
ME 4138	Mechanical Vibrations	3

CONCENTRATION (36 Semester Units)

Code	Concentration / Specialty / Focus Subjects	Semester Units
ME 4140	Quality Engineering	3
ME 4141	Heating Ventilation Refrigeration and Air Conditioning	3
ME 4142	Fuel Cell Technology	3
ME 4143	Propulsion Systems for Hybrid Electric Vehicles	3
ME 4144	Computer-Aided Design Methods	3
ME 4145	Mechanism Synthesis/Dynamic Modeling	3
ME 4146	Introduction to the Finite Element Method	3
ME 4147	Vehicle Dynamics	3
ME 4148	Advanced Machining Processes	3
ME 4149	Metal Forming Processes	3
ME 4150	Precision Manufacturing and Metrology	3
ME 4151	Production Planning	3

Code	Research Subjects / Activity	Semester Units
RES 4129	Graduation Project	3

11.04.04.02 - ME, MECHANICAL ENGINEERING

This program targets mechanical engineers to upgrade fundamental knowledge in a broad area of Mechanical Engineering disciplines in solving engineering problems (three major areas in the department: thermal/fluids, dynamics/control, and mechanics/materials), Independent Learning & Research, Professional and Career Development, Communication Skills, Societal/Cultural/Global Perspectives and demonstrate an understanding of his/her professional responsibilities in increasingly more diverse societal and global environments..

Educational Objectives:

It focuses on improving student's ability to:

1) Apply fundamental knowledge in a broad area of Mechanical Engineering disciplines in solving engineering problems (three major areas in the department: thermal/fluids, dynamics/control, and mechanics/materials).
2) Demonstrate independent self-learning and research capabilities, which enable students to grow throughout his/her career after graduation.
3) Function effectively as an engineering professional.
4) Communicate effectively with written, oral, and visual means.
5) Understanding professional responsibilities in increasingly more diverse societal and global environments.

REQUIREMENTS

To graduate with a Master of Engineering, Civil Engineering, students are required to complete 45 semester units. Students who attended graduate engineering programs at an accredited or recognized graduate educational facility may qualify for credit transfer up to 8 semester units upon submission of acceptable evidence.

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken at AUSTC or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis

CURRICULUM

Basic Knowledge (2 Semester Units):

Code	Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Code	Fundamental Subjects	Semester Units
ME 5120	Continuum Mechanics/Elasticity	2
ME 5121	Nanoscale Science and Technology	2
ME 5122	Advanced Mechanics of Metals	2
ME 5123	Experimental Stress Analysis	2
ME 5124	Finite Element and Variation Methods in Engineering	2
ME 5125	Principles of Energy Conversion	2
ME 5126	Precision Manufacturing and Metrology	2
ME 5127	Intermediate Dynamics	2

Code	Core Subjects	Semester Units
ME 5130	Mechanics of Composite Materials	2
ME 5131	Advanced Thermodynamics	2
ME 5132	Advanced Fluid Mechanics	2
ME 5133	Computational Fluids Engineering	2
ME 5134	Fuel Cell Technology	2
ME 5135	Phase-Change & Two-Phase Flows	2
ME 5136	Design for Reliability	2
ME 5137	Analytical Vibroacoustics	2

Code	Concentration / Specialty / Focus Subjects	Semester Units
ME 5140	Vehicle Dynamics	3
ME 5141	Micro-manufacturing Processes	3
ME 5142	Data Based Modeling & Control	3
ME 5143	Micro and Nano Fabrication for Energy Applications	3
ME 5144	Experimental Design in Engineering	3
ME 5145	Dynamic Measurement/Signal Analysis	3
ME 5146	Advanced Space Mechanics	3
ME 5147	Distributed Embedded Control Systems	3
ME 5148	Engineering Fracture Mechanics	3

Code	Research Subjects / Activity	Semester Units
RES 5699	Thesis	2

11.04.05 - Ph.D., Engineering Program

The Ph.D. in Engineering Program is committed to providing a high-quality, advanced doctoral level engineering education to students through tailored course work that uniquely transcends the boundaries of traditional engineering disciplines and provides outstanding opportunities for collaborative research. As a result, the educational experience that students receive serves as a strong foundation for exciting and rewarding research and development careers in industry and academia.

The Ph.D. in Engineering Program is a collaborative program that is shared between all engineering departments as focus areas. All program students attend the same fundamental engineering subjects, after which, every student may select focusing on a specific area based on previously obtained educational, research and work experience to continue taking the related subjects and then proceed with research activities to include comprehensive conceptual paper and dissertation.

OBJECTIVES:

1. To enable students to develop as successful professionals for highly competitive positions

2. To prepare students to be effective researchers in civil, architectural, mechanical electrical or computer engineering

3. To enhance visibility of the doctoral programs in civil, architectural, mechanical electrical or computer engineering

Outcomes for each of the program objectives are:

1. To enable students to develop as successful professionals for highly competitive positions, the programs aim to provide a variety of experiences that help students to:

    a. Achieve the highest level of expertise in civil, architectural, mechanical electrical or computer engineering, mastery of the knowledge in their fields and the ability to apply associated technologies to novel and emerging problems

    b. Present research to local and international audiences through publications in professional journals and conference papers given in a range of venues, from graduate seminars to professional meetings

    c. Participate in professional organizations, becoming members and attending meetings

    d. Broaden their professional foundations through activities such as teaching, internships, fellowships, and grant applications

2. To prepare students to be effective researchers in the fields of civil, architectural, mechanical electrical or computer engineering , the programs aim to provide a variety of experiences that help students to:

    a. Become independent researchers in an area of study, developing a substantial expertise in that area that allows them to make an original contribution to it

    b. State a research problem in such a way that it clearly fits within the context of the literature in an area of study and demonstrate the value of the solution to the research problem in advancing knowledge within that area

    c. Apply sound research methods/tools to problems in an area of study and describe the methods/tools effectively

    d. Analyze/interpret research data

    e. Communicate their research clearly and professionally in both written and oral forms appropriate to the field

3. To enhance visibility of the doctoral programs in civil, architectural, mechanical electrical or computer engineering nationally, the programs aim to:

    a. Attract, secure, and retain high-quality students

    b. Enhance doctoral education by creating advanced courses, providing more supportive resources for fellowships, research, travel to conferences, etc. for doctoral students, and providing special mentoring for doctoral students interested in pursuing academic careers

    c. Attract, retain, and support research-active faculty

    d. Provide more support for research-active faculty, such as reduced undergraduate teaching and increased research space

ADMISSION PREREQUISITES

To be considered for admission into the Ph.D. in Engineering Program, a student must first satisfy the admission requirements of the School of Graduate Studies. The student is expected to meet the requirements for admission into the Program as described below:

- M.S. degree from an accredited or recognized engineering program, with a minimum 3.5 grade point average GRE scores (analytical + quantitative = 1300). The average GRE scores among the students enrolled in the Program are 738 (quantitative) and 640 (analytical). Expected score on analytical writing portion of GRE is 4.5
- Statement of Objectives
- Three letters of recommendation

- International students must have a minimum TOEFL (Test of English as a Foreign Language) score of at least 550 (old system) or 213 (new system) or an IELTS (International English Language Testing System) score of 6

Students can help to expedite the admission process by including the following information in their Statement of Objectives: the research focus area of interest; the research that was performed during undergraduate or graduate study; and the name of the faculty with whom the student would like to do research, but only if this has been mutually agreed upon.

REQUIREMENTS

To graduate, students are required to take 62 credits at AUSTC and research work. Each student may qualify for transfer of 8 semester units from previously obtained education and/or training at an accredited or recognized engineering graduate educational facility.

(1) All doctoral students are required to take Information Research Strategies at AUSTC or provide an acceptable evidence to transfer it from a recognized graduate educational facility.
(2) Doctoral Fundamental Curriculum must be successfully completed before taking any specialty subjects
(3) Each Engineering Specialty class must complete its related core and focus specialty curriculum after successful completion of fundamental studies and before starting research activities.
(4) Every doctoral student is required to submit a conceptual paper and set for doctoral comprehensive exam and then get involved in research activities after assignment of doctoral research committees and chairmen.
(5) Each student shall proceed with doctoral research and submit a publishable doctoral dissertation through three stages under full supervision and coordination with doctoral committee.
(6) Student may qualify for graduation after completion of all required curriculum, submit and oral defense of the dissertation.

Required = 62 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 54 Semester Units

2 Information Research Strategies (Optional, if not taken earlier)
10 Credits - Fundamental subjects
10 Credits - Core subjects
30 Credits - Advanced specialty subjects
2 Credits - Submission of Concept Paper,
2 Credits - Comprehensive Exam
6 Credits – Dissertation

PHD, ENGINEERING – CURRICULUM:

General and Fundamental studies:

Code	General Studies Subjects	Semester Units
ALS 6010	Information Research Strategies	2

Code	Fundamental Subjects	Semester Units
RES 6120	Statistical Modeling and Analysis for Complex Data Problems	2
RES 6121	Optimal Experimental Design	2
RES 6122	Mathematical Modeling	2
RES 6123	Research Methods and Design	2
RES 6124	Dissertation Planning, Writing, and Defending	2

PHD SPECIALTIY STUDIES:

ELECTRICAL ENGINEERING

CORE SUBJECTS

Code	Core Subjects	Semester Units
EE 6130	Test Engineering Fundamentals	2
EE 6131	Electronic Manufacturing	2
EE 6132	EMC Test Engineering Fundamentals	2
EE 6133	Digital Hardware Testing	2
EE 6134	Optical System Design and Testing	2

FOCUS SUBJECTS

Code	Concentration / Specialty / Focus Subjects	Semester Units
EE 6140	Statistical Processing Of Radar, Sonar, And Optical Signals	3

EE 6141	Optical Fiber Communications	3
EE 6142	Low-Power High-Resolution Analog to Digital Converters	3
EE 6143	Digital Filters: Basics and Design	3
EE 6144	Electricity from Renewable Resources	3
EE 6145	Electromagnets	3
EE 6146	Electro-Mechanical Modeling of Charged Particulate Systems	3
EE 6147	Operational Amplifiers	3
EE 6148	Introduction to Subsurface Imaging	3
EE 6149	Computer Architecture	3

TELECOMMUNICATION ENGINEERING:

CORE SUBJECTS:

Code	Core Subjects	Semester Units
EE 6130	Test Engineering Fundamentals	2
EE 6131	Electronic Manufacturing	2
EE 6132	EMC Test Engineering Fundamentals	2
EE 6133	Digital Hardware Testing	2
EE 6134	Optical System Design and Testing	2

FOCUS SUBJECTS:

Code	Concentration / Specialty / Focus Subjects	Semester Units
TLM 6141	Fundamentals of DSL Technology	3
TLM 6142	Microwaves and RF Engineering	3
TLM 6143	Antenna Theory and Design	3
TLM 6144	Advanced Topics in Signal Processing	3

TLM 6145	Underwater Acoustics	3
TLM 6146	LTE, WIMAX and WLAN Network Design	3
TLM 6147	Satellite Communications Systems	3
TLM 6148	Telecommunications Network Design and Management	3
TLM 6149	Systems Engineering in Wireless Communications	3
TLM 6140	Network Flaws, Theory and Application	3

CONSTRUCTION ENGINEERING

CORE SUBJECTS

Code	Core Subjects	Semester Units
CON 6134	Pavement Management Systems	2
CON 6130	Decision-Making in Complex Dynamic Systems	2
CON 6131	Introduction to System identification	2
CON 6132	Stability of Earth Structures	2
CON 6133	Engineering with Developing Communities	2

FOCUS SUBJECTS:

Code	Concentration / Specialty / Focus Subjects	Semester Units
STE 6140	Statics and Strength of Materials for Construction	3
STE 6141	Masonry Structural Design	3
STE 6142	Structural Analysis with the Finite Element Method	3
STE 6143	Beam Structures: Classical and Advanced Theories	3
STE 6144	Earthquake Hazard and Seismic Risk Reduction	3
STE 6145	Advanced Reinforced Concrete Structures	3
STE 6146	Advanced Steel and Composite Structures	3

STE 6147	Analysis of Plates and Shells	3
STE 6148	Plastic-Hinge Methods For Framed Structures	3
STE 6149	Earthquake Resistant Buildings	3

CIVIL ENGINEERING:

CORE SUBJECTS

Code	Core Subjects	Semester Units
CON 6134	Pavement Management Systems	2
CON 6130	Decision-Making in Complex Dynamic Systems	2
CON 6131	Introduction to System identification	2
CON 6132	Stability of Earth Structures	2
CON 6133	Engineering with Developing Communities	2

FOCUS SUBJECTS:

Code	Concentration / Specialty / Focus Subjects	Semester Units
CE 6140	Steel Design	3
CE 6141	Public Transit	3
CE 6149	Soil Mechanics and Foundations	3
CE 6142	Storm-water Management and LID	3
CE 6143	Probabilistic Analysis and Reliability	3
CE 6144	Mathematical Modeling of Earth Systems	3
CE 6145	Advanced Soil Mechanics	3
CE 6146	Fundamentals of Soil Behavior	3
CE 6147	Engineering Design Practicum	3
CE 6148	Advanced Structural Concrete Design	3

COMPUTER SCIENCE:

CORE SUBJECTS:

Code	Core Subjects	Semester Units
CS 6130	Information Theory	2
CS 6131	Coding Theory	2
CS 6132	Digital Image Processing	2
CS 6133	Computational Intelligence - Theory and application	2
CS 6134	Compiler Design, Theory, and Optimization	2

FOCUS SUBJECTS:

Code	Concentration / Specialty / Focus Subjects	Semester Units
CS 6140	Theory of Computation	3
CS 6141	Advanced Algorithms	3
CS 6142	Parallel Algorithms	3
CS 6143	Advanced Computer Architecture	3
CS 6144	Distributed Systems	3
CS 6145	Systems Performance Analysis	3
CS 6146	Software/Hardware Design of Multimedia Systems	3
CS 6147	GPU and Multicore Programming	3
CS 6148	Data Visualization	3
CS 6149	Advanced Artificial Intelligence	3

CONSTRUCTION MANAGEMENT

CORE SUBJECTS

Code	Core Subjects	Semester Units
CON 6134	Pavement Management Systems	2

CON 6130	Decision-Making in Complex Dynamic Systems	2
CON 6131	Introduction to System identification	2
CON 6132	Stability of Earth Structures	2
CON 6133	Engineering with Developing Communities	2

FOCUS SUBJECTS

Code	Concentration / Specialty / Focus Subjects	Semester Units
CME 6140	Project Management	3
CME 6141	Operations Management	3
CME 6142	Construction Equipment and Methods	3
CME 6143	Accounting Fundamentals for Construction	3
CME 6144	Construction Cost Estimating	3
CME 6145	Construction Project Scheduling and Control	3
CME 6146	Legal Environment for Engineers and Architects	3
CME 6147	Construction Project Administration	3
CME 6148	Computer Applications in Construction	3
CME 6149	Project Delivery Systems for Construction	3

MECHANICAL ENGINEERING

CORE SUBJECTS

Code	Core Subjects	Semester Units
ME 6133	Nonlinear Systems Analysis & Control	2
ME 6134	Advanced Dynamics	2
ME 6130	Advanced Heat Transfer	2
ME 6131	Linear Systems Theory and Design	2

ME 6132	Dynamic Behavior of Materials	2

FOCUS SUBJECTS:

Code	Concentration / Specialty / Focus Subjects	Semester Units
ME 6147	Design Optimization	3
ME 6148	Advanced Acoustics	3
ME 6149	Advanced Vibrations	3
ME 6140	Advanced Power train Instrumentation and Experimental Methods	3
ME 6141	Advanced Combustion	3
ME 6142	Advanced Machining Processes	3
ME 6143	Advanced Metal Forming	3
ME 6144	Experimental Methods Vibro-Acoustics	3
ME 6145	Introduction to Robotics and Mechatronics	3
ME 6146	Advanced Continuum Mechanics	3

PHD RESEARCH ACTIVITIES

Code	Research Subjects / Activity	Semester Units
RES 7160	Concept Paper	2
RES 7161	Doctoral Comprehensive Examination	2
RES 7162	Doctoral Dissertation Research I	2
RES 7163	Doctoral Dissertation Research II	2
RES 7164	Doctoral Dissertation Research III	2

11.05 - School of Sciences

School of sciences at the American University for Science and Technology offers two programs:

- Graduate Medical Informatics program grants Master's and Doctor of Philosophy in Medical informatics, and

- Graduate Nutritional Sciences program grants Master's and Doctor of Philosophy in Nutritional Sciences

11.05.01- M.S. in Medical Informatics

With increased attention on reducing healthcare costs, expanding access to quality care and improving the quality of services, the role of health informatics is recognized as a critical component of healthcare reform. The American University for Science and Technology provides innovative and relevant programs and has demonstrated expertise in health informatics management and technology through a faculty of Information Technology leaders with solid medical informatics and health technology background, Medical Doctors, Pharmacists, Nurses and information technologists with special interest in health and medical information practice.

The Master of Science in Medical Informatics (MSMI) program emphasizes the applied aspect of using informatics (information science and technology) in the health care setting. This is somewhat different than other medical informatics programs where there is a stronger emphasis on theory. We strive to provide a practical education that prepares students to effectively participate in development, implementation and management teams charged with producing information technology solutions that improve patient care and reduce the cost of care.

Through The American University for Science and Technology's M.S. in Medical Informatics program, students can gain the tools and skills they need to integrate advanced digital technologies into the field of healthcare and use electronic data to improve the effectiveness and efficiency of healthcare delivery. Learn how new technologies can improve the diagnosis, treatment, and outcomes of disease, as well as reduce the occurrences of medical errors.

Objectives:

Through AUSTC master's in health informatics program, graduates of this program will:

- Gain an in-depth understanding of new and existing digital technology and health information management systems within the context of the U.S. health care system.

- Prepare to lead in the development, implementation, evaluation and management of information technology solutions to improve patient health and the health care delivery process.

- Use health informatics to reduce the occurrence of medical errors.

- Utilize health information technology for decision making support, knowledge management, strategic planning, and outcomes assessment and management to optimize cost efficiencies in the health care system.

- Effectively interface between the data systems developers and the user community.

- Facilitate the development and advancement of e-Health initiatives and other emerging information technologies to improve health care delivery and cost efficiencies.

- Analyze data to identify early patterns of diseases, illness, and injury and review prevention and treatment options.

Program Features

The M.S. in Health Informatics program was designed to provide students with a curriculum that reflects the current industry standards and principles

- Timely perspectives from a team of subject-matter experts, including current best thinking by industry thought leaders, health management experts, national policy makers, and researchers.

- Current texts, articles, and interactive media along with experience with emerging technologies

- Opportunities to apply theory to practice through a practicum, which enables students to integrate the knowledge and skills acquired throughout the program.

- A scholarly project in which students synthesize the practicum experience and complete a professional portfolio based on their field experience.

Admission Prerequisites

1. Minimum undergraduate degree GPA of 3.00 (on a 4.00 scale)

2. GRE or GMAT general test scores having percentiles that average 60% or better, or an MCAT average of nine on the individual scores. This requirement is waived if applicant already has a graduate degree in a healthcare related discipline.

3. Transcripts should show proof of undergraduate course work in college algebra, statistics, and introduction to computers, computer programming and medical terminology.

4. Personal essay stating why applicant wishes to pursue this degree

REQUIREMENTS

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required to be the first taken subject or transferred from another facility)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits – Thesis

CURRICULUM

GENERAL KNOWLEDGE:

Code	General Studies Subjects	Semester Units
ALS 6010	Information Research Strategies	2

FUNDAMENTAL SUBJECTS CURRICULUM

Code	Fundamental Subjects	Semester Units
MI 5120	Introduction to Medical Informatics	2
MI 5121	Essentials of Health Information Management	2
MI 5122	Introduction to Medical Sciences and Human Patho-physiology	2
MI 5123	Human Anatomy	2
MI 5124	Physiology	2

CORE SUBJECTS CURRICULUM

Code	Core Subjects	Semester Units
MI 5130	Medical Terminology	2
MI 5131	ICD 9 CM	2
MI 5132	Lean Six-Sigma	2
MI 5133	Data Mining And Medical Knowledge Management	2

MI 5134	Health Care Politics, Policy and Services	2

SPECIALTY SUBJECTS CURRICULUM

Code	Concentration / Specialty / Focus Subjects	Semester Units
MI 5140	Security and Privacy	3
MI 5141	Clinical Decision Support and Improving Healthcare	3
MI 5142	Data Warehousing and Business intelligence	3
MI 5143	Statistical Methods for Intrusion Detection	3
MI 5144	Designing Security Systems	3
MI 5145	Healthcare Security Management	3
MI 5146	Health Care Ethics	3

RESEARCH ACTIVITY

Code	Activity	Semester Units
RES 5699	Thesis	2

11.05.02 Ph.D. in Medical Informatics

The PhD degree allows graduates to lead research in academic or industry positions. Our faculty and students pursue research across the spectrum of medical informatics, from bioinformatics through translational and clinical informatics. All prospective applicants should note that the program in Biomedical Informatics emphasizes research in novel computational methods aimed at advancing biology and medicine. Student may want to investigate degree programs from other computational and quantitative graduate programs (Bioengineering, Computer Science, and Statistics) and other programs in the Biosciences Programs (such as Genetics, Chemical Systems Biology, or Structural Biology). In contrast to the other computational/quantitative programs, AUSTC focuses more on informatics issues of knowledge representation and reasoning, data mining and analysis, and machine learning, while in contrast to the Biosciences program, AUSTC places greater emphasis on method development and evaluation than on basic science.

Faculty from many departments have research projects of a computational nature, and in some cases there is considerable overlap, but our applications committee evaluates the fit of students' application to our program, so the choice of a home program is an important one as befits an interdisciplinary program, our students come from diverse backgrounds and training experiences.

Some enter straight from baccalaureate training, while others have pursued advanced degrees, such as an MS, MPH, or MD, or worked in clinical medicine, bioengineering, biotechnology, or software engineering.

ADMISSION PREREQUISITES

Graduates of M.S. in Medical Informatics qualify for admission.

Or

- One year of calculus. Further coursework in multivariate calculus is strongly recommended.
- Coursework in probability and statistics, and linear algebra
- One year of computer programming/computer science coursework. The focus should be fundamentals of computer science and software engineering principles, including abstraction, modularity, and object-oriented programming, not merely the syntax of a programming language, scripting, or web programming.
- One year of college biology at the level required of biology majors.

OBJECTIVES:

Through AUSTC Ph.D. in medical informatics program, graduates will:

- Gain a specialized in-depth understanding of new and existing digital technology and health information management systems within the context of the U.S. health care system.
- Be prepared to lead in the development, implementation, evaluation and management of information technology solutions to improve patient health and the health care delivery process.
- Use health informatics to reduce the occurrence of medical errors.
- Utilize health information technology for decision making support, knowledge management, strategic planning, and outcomes assessment and management to optimize cost efficiencies in the health care system.
- Effectively interface between the data systems developers and the user community.
- Facilitate the development and advancement of e-Health initiatives and other emerging information technologies to improve health care delivery and cost efficiencies.
- Analyze data to identify early patterns of diseases, illness, and injury and review prevention and treatment options.

PROGRAM FEATURES

The doctoral program is a full-time, residential, research-oriented program. AUSTC does not offer part-time or distance education leading to the PhD in Medical Informatics. However, some students may apply to the part-time distance education program at the master's degree, and then submit a separate application to the PhD program. There is no guarantee that distance learning Master's graduates will be accepted into the PhD full time program, unless all prerequisites shall be satisfied.

PhD students start in the fall quarter. They spend an average of five years at AUSTC and are expected to undertake significant research projects.

Candidates are encouraged to explore the various research interests of the medical informatics core and participating faculty. Practice rotations during the first year expose students to different disciplines and faculty. Prior to being formally admitted to candidacy for the doctoral degree at the end of the second year of study, each student must demonstrate knowledge of informatics fundamentals and a potential for succeeding in research by passing a qualifying oral examination. Students later complete and defend a doctoral dissertation.

MDs interested in the PhD in Medical Informatics should contact us as early as possible, especially if student is coordinating the AUSTC training with further medical residency or fellowship training. It is also important to ensure that appropriate math and computer science prerequisites are completed before applying.

PROGRAM REQUIREMENTS:

- To graduate, students are required to take 60 credits at AUSTC and research work
- Each student may qualify for transfer of 8 semester units from previously obtained education and/or training at an accredited or recognized facility.

Required = 62 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 52 Semester Units

2 Information Research Strategies (Optional, if not taken earlier)
10 Credits - Fundamental subjects
10 Credits - Core subjects
30 Credits - Advanced specialty subjects
2 Credits - Submission of Concept Paper,
2 Credits - Comprehensive Exam
6 Credits – Dissertation

CURRICULUM

GENERAL KNOWLEDGE (2 Semester Units):

Code	General Studies Subjects	Semester Units
ALS 6010	Information Research Strategies	2

FUNDAMENTAL SUBJECTS (10 Semester Units):

Code	Fundamental Subjects	Semester Units
RES 6120	Statistical Modeling and Analysis for Complex Data Problems	2
RES 6121	Optimal Experimental Design	2
RES 6122	Mathematical Modeling	2
RES 6123	Research Methods and Design	2
RES 6124	Dissertation Planning, Writing, and Defending	2

CORE SUBJECTS (10 Semester Units):

Code	Core Subjects	Semester Units
MI 6I30	Gene Expression Data Analysis	2

MI 6l31	Data Analysis and Graphics Using R	2
MI 6132	Tools of Bioinformatics	2
MI 6133	Biometeorology	2
MI 6134	Ethical, Legal and Social Issues in Biotechnology	2

FOCUS (30 Semester Units):

Code	Concentration / Specialty / Focus Subjects	Semester Units
MI 6140	Bioinformatics	3
MI 6141	Fundamentals of Healthcare Programming	3
MI 6142	Informatics in Medical Imaging	3
MI 6143	Probabilistic Modeling in Medical Informatics	3
MI 6144	Clinical Information Systems	3
MI 6145	Health Information Technology & Management	3
MI 6146	Comparative Health Information Management	3
MI 6147	Medical Devices Design for Six-Sigma	3
MI 6148	Essentials of Health Information Management	3
MI 6149	Knowledge Management and Data Mining in Biomedicine	3

RESEARCH ACTIVITIES (10 Semester Units):

Code	Research Subjects / Activity	Semester Units
RES 7160	Concept Paper	2
RES 7161	Doctoral Comprehensive Examination	2
RES 7162	Doctoral Dissertation Research I	2
RES 7163	Doctoral Dissertation Research II	2
RES 7164	Doctoral Dissertation Research III	2

11.05.03 – M.S. Nutritional Sciences

The courses and programs in nutrition and food sciences have emerged from and are integrated with the physical and life sciences. The natural resource of food is studied as it exists in nature, is consumed and utilized, and is made available to consumers. The science of nutrition is concerned with the ingestion and utilization of food for the purposes of survival, prevention of disease, and the promotion of positive health. Courses for non-majors, as well as majors, are offered in order to facilitate optimal lifetime nutritional status.

Program Objectives:

The MS in Nutritional Science provides an opportunity for students to:

- Obtain full knowledge on Dietetics which is the study of the relationship of food to the health and well-being of individuals and groups. Traditional occupations in clinics, hospitals, educational programs, public health agencies, research, and teaching are increasingly available for Nutrition and Food Science majors.

- Meet the requirements for increased need for dietitians and nutritionists

- Graduates may also work in food service and processing industries, wellness programs, computer systems management, public communication, and product development and promotion. Courses in the Option in General Dietetics meet the requirements of the American Dietetic Association for an approved Didactic Program in Dietetics (DPD).

- Gain knowledge and skills in medical nutrition, sports nutrition, community nutrition, food science, and foodservices administration.

- Present graduates to an area of specialization for exercise physiology, child development, nursing, health and community services, and others. The Minor in Foodservice Administration offers an area of specialization for majors in business administration, management, marketing, recreation, and tourism.

- Provide an opportunity for students to increase competence in food and nutrition subject matter in preparation for college teaching, research, administrative positions in public and private agencies, and graduate study beyond the master's degree. The Option in Nutrition Education is designed specifically to facilitate nutrition professionals in communicating information to promote optimal health and nutritional status.

- Specialize in nutrition, food science, clinical nutrition, or community nutrition.

- Increase competence in food and nutrition subject matter in preparation for college teaching, research, graduate study beyond the master's degree, and administrative positions in public and private agencies.

ADMISSION PREREQUISITES:

1. An acceptable baccalaureate from a recognized institution, or an equivalent approved by the Office of Graduate Programs, which includes a minimum of 24 upper-division units among the subject areas of biochemistry, chemistry, nutrition and food science, mathematics, microbiology, physiology, and statistics.

2. Computer literacy is also required. Students with deficiencies in undergraduate preparation may be required to take prerequisite course work at the discretion of the Graduate Coordinator after consultation with the student and faculty in the subject matter area(s) considered deficient.

3. Required subjects must have been completed within the five years prior to taking the graduate courses. Outdated prerequisites must be validated either by examination or by registration (credit will not be earned for validating this course work).

4. Approval by the Nutrition and Food Science Graduate Coordinator.

Faculty and Facilities:

Faculty members, in addition to teaching and advising, are actively involved in research, and other professional activities. Facilities include collaborative practices for courses and experiments in food science and nutrition. Presented computer activities improve instruction quality with programs for nutrition analyses of diets, food cost control, recipe and menu evaluation, tutorials, and simulations. Internships are coordinated for majors in a variety of community settings.

REQUIREMENTS

Required = 45 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 32 Semester Units

2 Credits - ALS 6010 (Required)
10 Credits - Fundamental Subjects
10 Credits - Core Subjects
21 Credits - Specialty Subjects
2 Credits - Thesis

CURRICULUM

GENERAL KNOWLEDGE

Code	General Studies Subjects	Semester Units
ALS 6010	Information Research Strategies	2

FUNDAMENTAL

Code	Fundamental Subjects	Semester Units
NTR 5120	Food Biochemistry and Food Processing	2
NTR 5121	Advanced Nutrition and Human Metabolism	2
NTR 5122	Statistical Methods and Variance Analysis	2
NTR 5123	Experimental Design	2
NTR 5124	Group Therapy	2

CORE

Code	Core Subjects	Semester Units
NTR 5130	Biostatistics	2
NTR 5131	Food Intake: Regulation, Assessing and Controlling	2
NTR 5132	Nutritional Education Theories and Practice	2
NTR 5133	Metabolic Disorders	2
NTR 5134	Nutrition Research Methods	2

SPECIALTY

Code	Concentration / Specialty / Focus Subjects	Semester Units
NTR 5140	Laboratory Nutritional Assessment	3
NTR 5141	Advanced Medical Nutrition Therapy	3
NTR 5142	Medical Nutrition Therapy	3
NTR 5143	Food and Nutritional Toxicology	3
NTR 5144	Nutritional Epidemiology	3
NTR 5145	Molecular Biology/Genetics	3
NTR 5146	Behavioral Group Therapy	3

RESEARCH ACTIVITY

Code	Research Subjects / Activity	Semester Units
RES 5699	Thesis	2

11.05.04 – PhD, Nutritional Sciences

The Department of Nutrition and Food Studies at the school of Sciences offers an interdisciplinary program of advanced study in nutrition and dietetics that prepares graduates for teaching, research, administrative, and leadership positions in academic, public health, industry, and other institutions.

PROGRAM OBJECTIVES

Upon satisfactory completion of a PhD in Nutritional Sciences, graduates will be able to:

1. Describe human nutrient requirements and their relationship to metabolic pathways and physiological function;
2. Perform an in depth assessment of the nutritional status of individuals and groups;
3. Describe how nutritional factors across the lifespan affect etiology, incidence, and prevalence of major diseases, quality of life, and productivity at work and school in the population;
4. Describe the process, rationale and issues related to establishing nutrient requirements and dietary guidance for the population;
5. Apply conceptual models of evidence-based approaches to promoting nutritional health;
6. Construct testable hypotheses, develop appropriate study designs, and conduct research, which will significantly expand knowledge of nutritional sciences;
7. Disseminate research findings through oral presentations and peer reviewed journals;
8. Prepare proposals for procuring research funding; and
9. Develop and provide instruction in a higher education academic setting.

ADMISSION PREREQUISITES:

1. Undergraduate or master's degree from a recognized institution
2. Competitive applicants typically have a combined Graduate Record Examination (GRE) score of at least 1200.
3. TOEFL scores (international students only). Successful candidates typically score 600 on the paper-based exam; 250 on the computer-based exam; or 100 on the internet-based exam.
4. Current resume or curriculum vitae, including information about:

    - Previous academic training in nutrition or dietetics and the undergraduate or master's level b Previous work experience in nutrition or dietetics
    - Potential to make a contribution to the profession

5. Statement of Purpose (about 500 words) explaining:

- Why you are applying to the doctoral program
- Your career goals and how doctoral training will help you achieve these goals
- How doctoral work will help you contribute to the profession

6. Three letters of recommendation from employers, former professors, or professional colleagues who have observed applicant's work

PROGRAM REQUIREMENTS:

To graduate, students are required to take 60 credits at AUSTC and research work. Each student may qualify for transfer of 8 semester units from previously obtained education and/or training at an accredited or recognized facility.

Required = 62 Semester Units
Maximum Credit Transfer = 8 Semester Units
Minimum Taken at AUSTC = 52 Semester Units

2 Information Research Strategies (Optional, if not taken earlier)
10 Credits - Fundamental subjects
10 Credits - Core subjects
30 Credits - Advanced specialty subjects
2 Credits - Submission of Concept Paper,
2 Credits - Comprehensive Exam
6 Credits – Dissertation

CURRICULUM

GENERAL KNOWLEDGE (2 Semester Units):

Code	General Studies Subjects	Semester Units
ALS 6010	Information Research Strategies	2

FUNDAMENTAL SUBJECTS CURRICULUM (10 Semester Units):

Code	Fundamental Subjects	Semester Units
RES 6120	Statistical Modeling and Analysis for Complex Data Problems	2
RES 6121	Optimal Experimental Design	2

RES 6122	Mathematical Modeling	2
RES 6123	Research Methods and Design	2
RES 6124	Dissertation Planning, Writing, and Defending	2

CORE SUBJECTS CURRICULUM (10 Semester Units):

Code	Core Subjects	Semester Units
NTR 6130	Human Nutrition Science	2
NTR 6131	General Biochemistry	2
NTR 6132	Human Physiology	2
NTR 6133	Foundations of Public Health	2
NTR 6134	Principles and Practices of Epidemiology	2

FOCUS SUBJECTS CURRICULUM (30 Semester Units):

Code	Concentration / Specialty / Focus Subjects	Semester Units
NTR 6140	Evaluation of Nutritional Status	3
NTR 6141	Genome Organization, Structure and Maintenance	3
NTR 6142	Genome Expression and Regulation	3
NTR 6143	Health Benefits of Functional Foods	3
NTR 6144	Metabolic Disorders	3
NTR 6145	Advanced Medical Nutrition Therapy	3
NTR 6146	Food Intake: Regulation, Assessing and Controlling	3
NTR 6147	Laboratory Nutritional Assessment	3
NTR 6148	Advanced Community Nutrition	3
NTR 6149	Advanced Nutrition and Human Metabolism	3

RESEARCH (10 Semester Units):

Code	Research Subjects / Activity	Semester Units
RES 7160	Concept Paper	2
RES 7161	Doctoral Comprehensive Examination	2
RES 7162	Doctoral Dissertation Research I	2
RES 7163	Doctoral Dissertation Research II	2
RES 7164	Doctoral Dissertation Research III	2

12 - SUBJECTS' DESCRIPTIONS:

12.01 - General Knowledge:

ALS 1007: Information Research Methods: By providing an introduction to the scholarly research process, with an emphasis on using both print and electronic information resources and services, this course is designed to help Learners develop information literacy—the ability to locate, evaluate, and use information to become independent, life-long Learners.

ALS 6010: Information Research Strategies: Introduction to information research including electronic resources. This course is designed to help researchers locate, evaluate, and use information. It includes exploration of the research process, search strategies, locating resources, source documentation, and organization of research.

HU 1007: Modern American History: This course is a study of the development of American characteristics and nationality from colonial beginnings through the period of Reconstruction, emphasizing the factors and forces which produced the Revolution, the Constitution, westward expansion, sectionalism and the Civil War. It also includes a study of the social, economic, and political forces that moved the United States through changing times from the post-Reconstruction era to the present, focusing on both domestic and foreign affairs in the country's last century of development.

HU 1009: World's Religions: Provides an introduction to the historical, geographic, mythical, ritual, psychosocial, anthropological, and doctrinal differences among the major world religions.

LS 1002: English Composition I: The purpose of this course is to guide the learner through the writing process to develop expository prose with an emphasis on effective organization and on correctness. Utilizes exercises in developing, drafting, revising, proofreading in APA writing style for attaining collegiate writing skills.

LS 2002: English Composition II: This course focuses on applied writing using references, citations, and a bibliography. This course requires the completion of an 8-10 page research paper. This research paper may be on any subject of interest to the Learner. However, cited outside sources of information (rather than just your opinion) must be used.

LS 1009: College Algebra: This course is a general purpose algebra course. It is a skill oriented course with an emphasis on the development of these skills through the use of real data. A basic understanding of high school algebra is necessary. The use of graphics calculator or computer software which has the same capabilities is required. If the Learner has access to a graphics calculator, the Learner should use it in the completion of all course objectives and assignments. However, if a computational and graphing device must be purchased, it is recommended that Math-Cad software be purchased. It is recommended that the Learner contact the faculty mentor within the first week of the course for the most economical source for this software.

NS 1002: Introduction to Meteorology: An introductory course about the atmosphere environment, intended to relate one's everyday experiences to meteorological concepts and to stress the understanding and application of principles. It explains the 'how' and 'why' behind the nightly weather reports.

NS 1004: Controversial Environmental Issues: This course presents major environmental issues facing today's world, such as: political issues; the effect of technology; waste disposal and the future of the environment. Advocates for each side of the issues present their views. The Learner is expected to analyze both sides of the controversy as well as present his/her critical opinions.

PS 1002: U.S. Government: This course is an elitist introduction to American government. Elite theory is contrasted to democratic theory and to modern pluralist political theory and includes examining the U.S. Constitution, American political history, power structures, public opinion, mass media, elections, parties, interest groups, the presidency, Congress, the bureaucracy, the courts, federalism, protest movements, and public policy.

SS 1004: Sociology: Looks into the principles and problems of group behavior, socialization, culture, and social organizations.

LS 1004: Introduction to Statistics: This is a first course in basic statistics exposing students to both descriptive and inferential statistics with emphasis on applications and the mathematical formulae. Graphing of data and computer or calculator statistical analyses will be required, with hand calculations of even the most elementary computations being discouraged.

LS 1006: Logic and Critical Thinking: This course helps learners to think more clearly, critically, and competently as well as sharpen reasoning abilities when encountering new and unexpected situations. Besides the development of higher order thinking, Learners will learn to formulate, analyze, and model problems, select relevant information in order to devise plans and test solutions. This includes an introduction to the principles of correct reasoning and their application. Emphasis is on improving the skills of thinking and reading critically, analyzing and evaluating arguments objectively, and constructing sound arguments based on relevant evidence.

NS 1006: Health and Nutrition: Focuses on the personal responsibility of health for a lifetime of physical, psychological, emotional and social well-being

SS 1007: Psychology of Business: This course teaches Learners how to apply established psychological concepts to improve personal effectiveness in business situations. It demonstrates practical application of these concepts through case studies of problem situations commonly occurring in the workplace.

12.02 - Business and Technology Management

Accounting:

AC 4130 Accounting Principles I: Introduction to basic principles, concepts, and theoretical framework of financial accounting with the emphasis on its use by economical rational decision makers. Topics include the decision-making environment and the accounting cycles, processes, and statements.

AC 4131: Accounting Principles II: Emphasizes the role of accounting information within a firm. Topics include budgeting, responsibility accounting, cost allocations, cost behavior,

decision models, capital budgeting, and an introduction to product costing in manufacturing and service sector firms.

AC 4132: Accounting Theory/Practice I: Studies the theory, concepts, and practices underlying financial reporting and measurement. Primary focus is on income measurement, and the valuation of assets, like cash, receivables, inventory, and long-lived assets, as well as multinational issues.

AC 4133: Accounting Theory/Practice II: A continuation of ACC 3000 with theories, concepts, and practices underlying financial measurement and reporting. Focuses on the measurement and reporting of liabilities and equities, and includes multinational issues.

AC 4134: Managerial/Cost Accounting I: The primary emphasis is on traditional and contemporary product costing techniques, cost allocation practices, and basic cost-management issues. Topics include process costing, standard costing, activity-based costing, back-flush costing, cost allocation issues, balanced scorecard, strategic profitability analysis, and the role of accounting in contemporary management practices.

AC 4135: Foundations of Taxation: Introduction to basic principles, concepts, and theoretical framework of taxation systems, emphasizing income taxation and its impact on decision making. Topics include tax planning and compliance for individuals, corporations, and partnerships.

AC 4136: Advanced Accounting: The theory and practice of financial accounting and reporting pertaining to business combinations and consolidated financial statements, accounting for partnerships, and related business forms, foreign currency transactions, and financial statement translations, and other advanced accounting topics.

AC 4140: Accounting Systems: Introduction to the basic principles, concepts, and theoretical framework for the design and operation of accounting information systems, emphasizing its use to enhance decision making. Topics include system design, internal controls, the use of databases, and electronic commerce.

AC 4141: Principles of Finance: Introduction to the principles of finance. Topics include financial mathematics, the capital investment decision, financial assets valuation, and the risk-return relationship

AC 4142: Managerial/Cost Accounting II: Emphasizes information requirements of contemporary management decision-making and strategic-planning processes. Covers contemporary control and evaluation practices (such as activity-based management), determining the costs of quality, and productivity analysis in the context of accounting information systems.

AC 4143: Intellectual Property Management: Covers principles of intellectual property, addressing managerial and policy issues in copyright, trademark, trade secret, and patents. Readings and discussions also cover how these property and legal systems impact the balance between property exclusivity, technological innovation and public access.

AC 4144: Attestation and Assurance: Auditing procedures and techniques associated with public accounting and with internal auditing for business entities. Topics include auditor's responsibilities, professional ethics, generally accepted auditing standards, purpose and types

of audits, objectives, internal control, evidence, organization within the public accounting profession, the audit program, and auditing procedures and techniques.

AC 4145: Applied Portfolio Management: Covers issues in the management and administration of investments in an institutional setting. Students form a new investment firm and manage a real portfolio of financial assets.

AC 4146: Investment Analysis and Portfolio Management: Develops a framework to make intelligent investment decisions and achieve successful investment results through a global outlook. Covers the theoretical and technical concepts involved in investing in marketable securities. A framework for making intelligent investment decisions and achieving successful investment results is developed

AC 4147: Advanced Financial Management: Advanced topics in managerial finance: Advanced capital budgeting, project analysis, capital acquisition, capital structure and dividend policy, and other topics.

AC 4148: Derivatives and Financial Engineering: Covers the pricing and use of options, financial futures, swaps, and other derivative securities.

AC 4149: Financial Risk Management and Financial Engineering: Detailed analysis of the measurement of financial risk and the tools and techniques available to manage financial risk. Topics include financial disasters, risk measurement (market, default, currency exchange, value-at-risk) and the hedging of these risks.

AC 4150: Governmental and Not-for-Profit Accounting: focuses on Governmental and Not-for-Profit Accounting Environment and Characteristics, The Use of Funds in Governmental Accounting, Budgetary Considerations in Governmental Accounting, An Introduction to General and Special Revenue Funds, General and Special Revenue Funds, Capital Projects Funds, Debt Service Funds, and Permanent Funds, Proprietary-Type Funds, Fiduciary Funds, Reporting Principles and Preparation of Fund Financial Statements, Government-Wide Financial Statements, Federal Government Accounting and Reporting, Accounting for Not-For-Profit Organizations, Accounting for Health Care Organizations, Analysis of Financial Statements and Financial Condition, Fundamentals of Accounting

AC 4151: Global Finance: Studies international financial systems and markets. Covers the principle of comparative advantage, balance of payments, exchange rate systems, theories of international finance, identification of international risk exposures, the management and treatment of risk, and special topics of international finance

12.02.02 - Applied Computer Sciences:

ACS 4140: Introduction to Business Programming: Develops business problem solving skills through the application of a commonly used high-level business programming language. Topics include the nature of the business programming environment, fundamentals of the language (e.g., programming constructs, data management, manipulation of simple data structures), structured programming concepts, desirable programming practices and design, debugging and testing techniques.

ACS 4141: Business Development: Focuses on the development of a business plan including marketing plans, organization, distribution, and financial projections. Emphasis is on the senior design project or enterprise project assigned to the student.

ACS 4142: Computer Administration: Administration of non-networked computers. Topics include: operating system installation; boot-up and shutdown; process management; account management; file systems; storage technology; backups; serial devices.

ACS 4143: Visual Basic Programming: Lecturing and training on the language including how to run the environment and creating applications with full coverage of data structure, procedures, event management, looping and object oriented programming

ACS 4144: Networking and Internet: Focuses on operating systems concepts including the design, kernel and application on several platforms

ACS 4145: Computer Networking: Focuses on different computer network topologies and methods as well as setting up and management with methods of access control and troubleshooting

ACS 4146: Web Technology and Development: Comprehensive coverage of web design and methods of transcription including web programming languages and transcripts, static and dynamic pages

ACS 4147: Web Programming: Extensive training on how to build Web sites with traditional HTML and its successor XHTM, study of how CSS can be used to make Web pages more attractive by controlling the presentation and formatting of pages, and how to access databases and to use JavaScript™ to enhance the power of web pages, along with how to make pages work in several generations of Web browsers.

ACS 4148: Information Technology Management: Up-to-date coverage on how new technology is changing the way organizations operate and compete Every day, new technology influences how organizations operate and compete in the current global environment, and this updated edition of a classic provides authoritative and streamlined coverage of this evolving topic. High-profile topics are discussed, such as social networks, green IS, and business intelligence, and global examples span a wide range of subject matter.

ACS 4149: Business Process Analysis: Studies business decision management discipline using business rules, process models (e.g. flowcharts, unified modeling language, swim lanes), and information systems to improve efficiency and effectiveness. Emphasis on industry standards and business process management used to increase productivity.

ACS 4150: Business Database Systems: Emphasizes database principles that are constant across different database software products through concrete examples using a relational database management system. Provides a well-rounded business perspective about developing, utilizing, and managing organizational databases

ACS 4151: Systems Analysis and Design: Provides an understanding of the IS development and modification process and the evaluation choices of a system development methodology. Emphasizes effective communication with users and team members and others in association with the development and maintenance of the information system, and stresses analysis and logical design of departmental-level information system

ACS 5140: Theory of Computation: Topics covered include Turing machines and their variants, the halting problem and decidability, computability, reducibility, NP-completeness, time and space complexity, and topics from recursive function theory.

ACS 5141: Distributed Systems: Covers time and order in distributed systems; mutual exclusion, agreement, elections, and atomic transactions; Distributed File Systems, Distributed Shared Memory, Distributed System Security; and issues in programming distributed systems. Uses selected case studies.

ACS 5142: Systems Design and Integration: System specification and design with an overview of technical performance measurements, activity management, risk management, decision analysis, cost analysis, and concurrent engineering. A broad view of customer and vendor integration, design reviews, quality systems, predictability, and sustainability are also presented.

ACS 5143: Systems Quality and Reliability: Technology and methodology for setting standards and measuring component performance. Testing and methods for evaluating internal and external subcontractor components and data are also presented. Contemporary issues of continuous improvement in quality and manufacturing, 6-sigma, and service industries are examined. Documentation related to offshore manufacturing is also introduced.

ACS 5144: Systems Project Management: Management techniques for large scale projects with multiple components and subsystems. Includes establishing and tracking responsibilities and costs of both internal and external value streams; Methods of investigating delivery, payment, and mechanical performance are also presented.

ACS 5145: Business Database Management: Emphasizes database principles that are constant across different database software products through concrete examples using a relational database management system. Provides a well-rounded business perspective about developing, utilizing and managing organizational databases

ACS 5146: Web Applications and Server Administration: In-depth study of Apache web server, Microsoft Internet Information Server (IIS) and email services. Topics include server configuration, load balancing, connecting to the Internet, web security and administration, communication media, HTTP, fault tolerance, and proxy servers.

ACS 6140: Decision Support and Expert Systems: Explains fundamentals of artificial intelligence and expert systems that manipulate data and arrive at decisions through a programming process that resembles the human thinking process.

ACS 6141: E-Commerce Concepts: Electronic commerce touches each of us daily. As consumers we are continually offered products and services via the Internet. In our jobs, no matter what profession we are in, electronic commerce is being used more and more to conduct business, for training purposes and daily communications. This course examines the principles of electronic commerce and business transactions on the Internet.

ACS 6142: Concepts of Database Management: Focuses on data as a valuable organizational resource that must be managed, distributed, and maintained in a secure manner.

ACS 6143: Integrated Business Processes with ERP Systems: Covers the key processes supported by modern ERP systems and examines in depth the core concepts

applicable to all ERP environments, and it explains how those concepts can be utilized to implement business processes in SAP systems.

ACS 6144: Monitoring Web-Based Applications and Infrastructure: Provides Learners with the skills to build powerful Web-based applications for the electronic commerce environment.

ACS 6145: Managerial Electronic Commerce: Provides a thorough explanation of what EC is, how it's being conducted and managed, and how to assess its opportunities, limitations, issues, and risks.

ACS 6146: Electronic Payment Systems: Examines in detail the transformation of the VISA system from a collection of non-integrated, localized, paper-based bank credit card programs into the cooperative, global, electronic value exchange network it is today.

ACS 6147: Network Defense: Security and Vulnerability Assessment: covers the fundamental skills in evaluating internal and external threats to network security and design, how to enforce network level security policies, and how to ultimately protect an organization's information. I also cover a broad range of topics from secure network fundamentals, protocols & analysis, standards and policy, hardening infrastructure, to configuring IPS, IDS, firewalls, bastion host and honey-pots.

ACS 6148: Data Mining Concepts and Techniques: Provides an understanding and application of the theory and practice of discovering patterns hidden in large data sets, it also focuses on new, important topics in the field: data warehouses and data cube technology, mining stream, mining social networks, and mining spatial, multimedia and other complex data. Each lesson is a stand-alone guide to a critical topic, presenting proven algorithms and sound implementations ready to be used directly or with strategic modification against live data. This is the resource you need if student may want to apply today's most powerful data mining techniques to meet real business challenges. It also presents dozens of algorithms and implementation examples, all in pseudo-code and suitable for use in real-world, large-scale data mining projects, and addresses advanced topics such as mining object-relational databases, spatial databases, multimedia databases, time-series databases, text databases, the World Wide Web, and applications in several fields. *Provides a comprehensive, practical look at the concepts and techniques student may need to get the most out of managed data.

ACS 6149: Computer Networking: Focuses on different computer network topologies and methods as well as setting up and management with methods of access control and troubleshooting

12.02.03 - Business Administration:

BUS 4121: Human Resource Management And Development: Examines methods that organizations use to meet organizational goals through influencing worker attitudes, behaviors, and performance. Topics include recruitment, selection, training, performance appraisal, and compensation.

BUS 4122: Organizational Behavior: Covers concepts of human relations and organizational behavior through the study of people's behavior at work. Develop understanding, attitudes, and skills leading to increased personal effectiveness.

BUS 4123: Principles of Marketing: Emphasizes decisions made in developing both strategic and tactical marketing plans. Uses computer simulations, experiential learning assignments, and marketing plan development to demonstrate principles of market segmentation, product development, pricing, distribution planning, and promotion

BUS 4124: Business Statistics: Introduction to basic concepts and methods of probability and statistics, including the following topics: collection, description and presentation of data, probability, random variables, sampling, probability distributions, estimation and hypothesis testing, ANOVA, and selected non-parametric techniques.

BUS 4125: Introduction to Business: Introduction to planning, organizing, decision-making, leadership and control in a business. Business disciplines of accounting, finance, information systems, management, marketing, and operations are introduced, along with discussions of business ethics and social responsibility.

BUS 4126: Basic Business law: Provides an understanding of the legal basis of contracts and their enforcement in the areas of general contracts, contracts of commercial sales and of agency, and commercial paper.

BUS 4127: Principles of Economics: An introduction to economics. The microeconomics portion covers consumer choice, the firm, value and price theory, and distribution theory. The macroeconomics portion covers national income analysis, fiscal policy, money and monetary policy, the commercial banking system, and the Federal Reserve System.

BUS 4128: Business Process Analysis: Studies business decision management discipline using business rules, process models (e.g. flowcharts, unified modeling language, swim lanes), and information systems to improve efficiency and effectiveness. Emphasis on industry standards and business process management used to increase productivity.

BUS 4130: Foundation of Financial Management: Focuses on the financial management in general including statements review, analysis and reporting methods

BUS 4131: Business Statistics: Introduction to basic concepts and methods of probability and statistics, including the following topics: collection, description and presentation of data, probability, random variables, sampling, probability distributions, estimation and hypothesis testing, ANOVA, and selected non-parametric techniques.

BUS 4132: Rules of Marketing and Public Relations: Focuses on marketing principles and rules that controls business relations within the business or organization as well as the business and public relations between vendors and customers and/or consumers in general

BUS 4133: Developing Management Skills: Methods of evaluation and development of applied management skills at the levels of lower, middle and senior management and methods to select leaders from working force

BUS 4134: Practical Business Accounting: Comprehensive coverage of accounting and financial methods from the basics to reporting and analysis including comparison between manual and automated systems.

BUS 4135: Essentials of Marketing Management: Covers the principals and essentials of marketing management including methods of planning, practice, analysis, evaluation and re-planning with marketing research methods

BUS 4136: Essentials of Human resources Management: Focuses on human resources management including recruiting, benefits design, evaluation and legal management

BUS 4140: Administrative Office Management: Integrates the software applications skills, business communication skills, critical thinking, and concepts and activities that address the workplace environment, customer service, mail, travel, meetings, and events, records management; Students take this course because they'll be entering the workforce as administrative professionals and need to learn about office procedures, communication styles, financial factors and methods, meeting preparation, and office technology among other topics.

BUS 4141: Introduction to Material Management: covers all the essentials of modern supply chain management, manufacturing planning and control systems, purchasing, and physical distribution.

BUS 4142: Small Business Management: Introduces small business management and the multitudes of management skills required for successful operation.

BUS 4143: Manufacturing Planning and Control: Covers both basic and advanced concepts and applications and provides an understanding of supply chain planning and control techniques with topics including purchasing, manufacturing, warehouse, and logistics systems and focuses on the integration of manufacturing with the supply chain.

BUS 4144: Product Design and Development: Presents in a clear and detailed way a set of product development techniques aimed at bringing together the marketing, design, and manufacturing functions of the enterprise. The integrative methods facilitate problem solving and decision making with different disciplinary perspectives, reflecting the current industry toward designing and developing products in cross-functional teams.

BUS 4145: Marketing Research: Covers marketing research theory and practice and demonstrates how marketing concepts can be carried out in reality, and which methods are most appropriate for particular types of research with utilization of digital developments and case studies enabling students to understand the issues involved in carrying out research and the potential pitfalls to be aware of, thereby ensuring a clear understanding of the overall subject.

BUS 4146: Advertising Principles and Practice: The New World of Marketing Communication, Integrated Brand Communication, Brand Communication and Society, How Brand Communication Works, Segmenting and Targeting the Audience, Strategic Research, Strategic Planning, Creative Strategy, Copywriting, Visual Communication, Media Basics, Traditional Media, Digital Media, Media Planning and Buying, Public Relations, Direct-Response, Promotions, The IMC Umbrella, Evaluation of Effectiveness

BUS 4147: Promotion and Marketing Communications: Focuses on THE IMC FOUNDATION, Integrated Marketing Communications, Corporate Image and Brand Management, Buyer Behaviors, The IMC Planning Process, IMC ADVERTISING TOOLS, Advertising Management, Advertising Design: Theoretical Frameworks and Types of Appeals, Advertising Design: Message Strategies and Frameworks, IMC MEDIA TOOLS, Traditional

Media Channels, E-active Marketing, Alternative Marketing, IMC PROMOTIONAL TOOLS, Database and Direct Response Marketing and Personal Selling, Sales Promotions, Public Relations and Sponsorship Programs, IMC ETHICS, REGULATION, AND EVALUATION, Regulations and Ethical Concerns, and Evaluating an Integrated Marketing Program.

BUS 4148: Retail Management: An Introduction to Retailing, Building and Sustaining Relationships in Retailing, Strategic Planning in Retailing, Retail Institutions by Ownership, Retail Institutions by Store-Based Strategy, Web, Non-store-Based, and Other Forms of Nontraditional Retailing, Identifying and Understanding Consumers, Information Gathering and Processing in Retailing, Trading-Area Analysis, Selection, Retail Organization and Human Resource Management, Operations Management: Financial Dimensions, Operations Management: Operational Dimensions, Developing Merchandise Plans, Implementing Merchandise, Financial Merchandise Management, Pricing in Retailing, Establishing and Maintaining a Retail Image, Promotional Strategy and integrating and Controlling the Retail Strategy.

BUS 4149: Sales Force Management: Effective selling demands knowledge not only of the business product or service, but also the techniques of dealing with the customer's needs and wants and overcoming objections. Effective selling focuses on the customer's perceived product value and customer need satisfaction

BUS 4150: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development on the internet. Some advanced concepts in resource constraint management and design matrix are included.

BUS 4151: Operations Strategy: Addresses issues in operations management, quality, finance/accounting, marketing, supply chain, and technology to provide an interdisciplinary focus on strategic planning for operations. Also addresses issues associated with global initiatives and changing technology.

BUS 5120: Financial Reporting and Control: This class covers the collection, reporting and analysis of financial information with emphasis on the use of that information to support decision making.

BUS 5121: Financial Risk Management and Decision Making: Explores the theory and practice of finance and capital markets. Topics include role of the financial manager and goals of the firm, financial mathematics, valuation of assets, cost of capital, project evaluation, capital structure, forecasting, financing vehicles, special topics in finance.

BUS 5122: Derivative Securities: Studies futures, forwards, and option pricing and their uses for speculation, arbitrage and hedging. The option pricing framework is extended to cover exotic options and options embedded in real assets.

BUS 5123: Business Process Management: Applications and case studies focusing on contemporary issues in operations and quality management to include lean manufacturing practices, ERP, quality and environmental management systems/standards, Six Sigma, statistical process control, and other current topics.

BUS 5124: Operations Strategy: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations.

BUS 5130: Operations Strategy: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations.

BUS 5131: Global Operations and Supply Chain Management: Case analysis, in-depth article reviews, and course projects are used to address issues in the design and management of global supply chains. Topics include global sourcing strategies, strategic alliances, demand and supply uncertainties, logistic network design, managing variability and risk, supply chain interactions and the value of information.

BUS 5132: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development on the internet. Some advanced concepts in resource constraint management and design matrix are included.

BUS 5133: Business Process Simulation: Discrete event and continuous simulation modeling techniques applied to the analysis of business processes. Special- purpose simulation software will be used to analyze cases and problems from the manufacturing and service sectors.

BUS 5134: Managing Behavior in Organizations: Discusses managing effectively within the environmental context of the organization. Topics include corporate culture, managing in a global environment, planning and strategy, organizational structure, human resources management, managing change, leadership, motivation, communication, conflict management, and teamwork.

BUS 5140: Business and Corporate Strategies: Introduces students to a repertoire of strategies that have been found useful in the creation of competitive advantage: cost leadership, business model differentiation, vertical integration, diversification, globalization, mergers and acquisitions, tacit collusion, alliance, and flexibility-agility-adaptability strategies.

BUS 5141: Launching Entrepreneurial Ventures: Focuses on the development of new technology-based businesses. Topics include creativity, screening technological opportunities, analyzing markets, testing business concepts, protecting intellectual property, strategy development, entrepreneurial team selection, securing financing, and developing a business plan.

BUS 5142: Growing and Managing New Ventures: Focuses on growing new technology-based businesses. Topics include building an effective entrepreneurial team, ethics and social responsibility, financial planning/reporting, working capital management, growth marketing, product/process development, raising capital, managing change and development, and planning for succession.

BUS 5143: Managing Innovation and Technology: An evolutionary strategic perspective is taken viewing how technology strategy evolves from underlying technological competencies, patterns of innovation, sources of external technological knowledge and modes of transfer.

BUS 5144: Strategic Managerial Processes: Introduces students to advanced topics in strategic change, strategy formation, and strategy implementation through a review of organization theories and processes. Course materials are applied to specific projects through individual specialized strategic management research projects.

BUS 5145: Corporate Social Responsibility & Business Ethics: Explores corporate social responsibility (CSR), business ethics, and corporate governance. Topics include organizational and environmental forces which drive CSR (e.g., sustainability, fair trade, and globalization); stakeholder theory; the strategic context of CSR; and implementation of CSR into strategy and culture.

BUS 5146: Managing Change: This course focuses on theory, research, and practice of both 'planned' and 'unplanned' change. The course considers the dynamics of change in complex organizations, variables which facilitate or impede change, and how to lead change and motivate others to change.

BUS 6130: Business Process Management: Applications and case studies focusing on contemporary issues in operations and quality management to include lean manufacturing practices, ERP, quality and environmental management systems/standards, Six Sigma, statistical process control, and other current topics.

BUS 6131: Operations Strategy: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations.

BUS 6132: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development on the internet. Some advanced concepts in resource constraint management and design matrix are included.

BUS 6133: Business and Corporate Strategies: Introduces students to a repertoire of strategies that have been found useful in the creation of competitive advantage: cost leadership, business model differentiation, vertical integration, diversification, globalization, mergers and acquisitions, tacit collusion, alliance, and flexibility-agility-adaptability strategies.

BUS 6134: Managing Change: This course focuses on theory, research, and practice of both 'planned' and 'unplanned' change. The course considers the dynamics of change in complex organizations, variables which facilitate or impede change, and how to lead change and motivate others to change.

12.02.04 - Construction Project Management:

CPM 4140: Essentials of Human resources Management: Focuses on human resources management including recruiting, benefits design, evaluation and legal management

CPM 4141: Project management for construction: Introduction to Project Management for design and construction processes, elements of planning, estimating, scheduling, bidding, and contractual relationships, computer scheduling and cost control, critical path method, design and construction activities and field supervision.

CPM 4142: Drafting and Plan Reading: Theoretical and Hands on training course covers introduction to architecture, architectural drafting fundamentals, basic architectural drawings, presentation methods, foundations and construction systems, framing systems, electrical and mechanical design drawings and drawing management and support services.

CPM 4143: Building Services Engineering: Focuses on Climate Change, Post Occupancy, Built Environment, Energy Economics, Ventilation and Air Conditioning, Heat Demand, Heating, Water Services, Electrical, Lighting, Condensation, Gas, Plant & Service Areas, Fire, Protection, Room Acoustics and Mechanical Transport

CPM 4144: Surveying and Setting Out Technology in Construction: To analyze and evaluate the way in which the construction industry has improved due to surveying instruments, in terms of increased productivity and greater degree of accuracy. One of the key forces in modern construction is to develop a technologically advanced and competitive construction industry which is able to deliver high quality buildings and infrastructure. So how important is surveying and setting equipment in the modern construction industry in helping to increase productivity by cutting costs, reducing time and increasing the quality of the work? The results and findings in this book should help shed some light on surveying technology and should be especially useful to professionals in the construction industry, students looking to do more research in the area of surveying or anyone else who is interested in the general topic of surveying and setting out.

CPM 4145: Construction Documents and Specification: Comprehensive, practical, and professional guidance to understanding the purposes and processes for preparation of construction specifications using real-world document examples that reflect current writing practices shaped by the well-established principles and requirements of major professional associations

CPM 4146: Construction Accounting & Financial Management: Master the principles of financial management, and adapt and apply them to the challenge of profitably managing construction companies. It integrates content that has traditionally been taught through separate accounting, finance, and engineering economics texts. Students learn how to account for a construction company's financial resources; how to manage its costs, profits, and cash flows; how to evaluate different sources of funding a company's cash needs; and how to quantitatively analyze financial decisions as well as gaining hands-on experience through example problems and practice problems.

CPM 4147: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development

on the internet. Some advanced concepts in resource constraint management and design matrix are included.

CPM 4148: Finite Elements: differential equations focus on formulation and application of the finite element to engineering problems such as stress analysis, heat transfer, fluid flow and electromagnetic. Topics include: finite element formulation for one-dimensional problems, such as trusses, electrical and hydraulic systems, scalar field problems in two dimensions, such as heat transfer, and vector field problems such as elasticity and finally usage of the commercial finite element program. Detailed course description: Focus on formulation and application of the finite element method to engineering problems such as stress analysis, heat transfer, fluid flow and electromagnetic. The course material is organized in three chronological units one month each: (1) the finite element formulation for one-dimensional problems, such as trusses, electrical and hydraulic systems, (2) the finite element formulation for scalar field problems in two dimensions, such as heat transfer and (3) the finite element formulation for vector field problems such as elasticity, and (4) finite element programming and usage of commercial finite element program.

CPM 4149: Project Planning, Scheduling and Control: strategies for dealing effectively with team members, clients, senior managers and other key stakeholders and is the perfect prescription for project success including Chapters on Full-spectrum Project Management and how to manage a virtual project team, Managing and facilitating project meetings, Techniques for dealing with contractors and Guidelines for setting up a project office

CPM 4150: Construction Safety and Health: A definitive review and comprehensive introduction of the construction industry best practices and fundamental concepts of environmental health and safety management systems for the Construction Management field. How modern EH&S management system techniques and theories not only result in improved safe work environments but ultimately enhance operational processes and performance in construction projects.

CPM 4151: Quality Improvement: Focus on quantitative aspects of quality improvement, Lean Enterprise, Six Sigma, Experimental Design, and Taguchi's and Quality Engineering with comprehensive coverage of fundamental statistical quality improvement concepts. A practical state-of-the-art approach is stressed throughout, and sufficient theory is presented to ensure that students develop a solid understanding of basic quality principles.

12.02.05 - HealthCare Management:

HCA 5140: Health Care Financial Management: Reviews of the budget formulation process for health care delivery systems, and explores both private and public funding sources and payment methods, and the role of public sector in determining fee schedules.

HCA 5141: Health Care Politics, Policy and Services: Presents an overview of the factors which govern and affect the development of health care policy in America.

HCA 5142: Healthcare Strategic Planning: Addresses major functions and issues surrounding public health service institutions, particularly within the context of a general administrative structure. A framework for developing a foundation and understanding of administrative, environmental, regulatory, financial and planning factors, which influence public health services, is established.

HCA 5143: Implementing Continuous Quality Improvement In Health Care: Examines Total Quality Management and its philosophy of continuous quality improvement in all business and clinical functions including problem-solving, and patient satisfaction.

HCA 5144: Health Care Ethics: Examines the legal and ethical issues affecting health care delivery in America including abortion, organ donation and transplantation, termination of life support, rights of the terminally ill and consent issues, state and federal regulation, and patient and provider relationship.

HCA 5145: Comparative Health Care Systems: The comparison of major health care systems, their measurement and effects are studied. The focus is on the health care systems in Canada, United States, Japan, Russia, Cuba, China, England, and Sweden.

HCA 5146: Assessment And Planning In Health Programs: Analyzes the strengths, weaknesses, and future potential for survival of health care corporations preparing for the new millennium. Strategic planning is the ongoing corporate process which allows such organizations to wisely grasp the opportunities of the future.

HCA 6140: Health Care Financial Management: Reviews of the budget formulation process for health care delivery systems, and explores both private and public funding sources and payment methods, and the role of public sector in determining fee schedules.

HCA 6141: Health Care Politics, Policy and Services: Presents an overview of the factors which govern and affect the development of health care policy in America.

HCA 6142: Healthcare Strategic Planning: Analyzes the strengths, weaknesses, and future potential for survival of health care corporations preparing for the new millennium. Strategic planning is the ongoing corporate process which allows such organizations to wisely grasp the opportunities of the future

HCA 6143: Health Care Grants: Introduces the methods and means of acquiring a public or private sector health care grant.

HCA 6144: Implementing Continuous Quality Improvement In Health Care: Examines Total Quality Management and its philosophy of continuous quality improvement in all business and clinical functions including problem-solving, and patient satisfaction.

HCA 6145: Essentials Of Managed Health Care: Prepares learner to assume roles in the management dimension of HMO's/PPO's in the private-for-profit/not-for-profit and publicly-sponsored HMO's.

HCA 6146: Health Care Ethics: Examines the legal and ethical issues affecting health care delivery in America including abortion, organ donation and transplantation, termination of life support, rights of the terminally ill and consent issues, state and federal regulation, and patient and provider relationship.

HCA 6147: Comparative Health Care Systems: The comparison of major health care systems, their measurement and effects are studied. The focus is on the health care systems in Canada, United States, Japan, Russia, Cuba, China, England, and Sweden.

HCA 6148: Assessment And Planning In Health Programs: Analyzes the strengths, weaknesses, and future potential for survival of health care corporations preparing for the new millennium. Strategic planning is the ongoing corporate process which allows such organizations to wisely grasp the opportunities of the future.

HCA 6149: Health Care Administration Research Project: Field study in health care administration or the presentation of a position paper on a major issue facing the health care community. This course requires the graduate Learner to conduct a research study in an area of Health Care Administration and to document the results in a formal project report.

12.02.06 - Human Resources Management:

HRM 5140: Human resources Information systems: Introduction to human resources management and human resources information systems, determining human resources information systems needs human resources implementation and acceptance, human resources information systems application and special topics in human resources information systems.

HRM 5141: Strategic Compensation in Human Resources Management: Addressing traditional aspects of compensation, such as job analysis and pay structure, as well as recent topics including knowledge-based pay and executive compensation; contains sections on the context of compensation practice, bases for pay, designing compensation systems, employee benefits, and contemporary strategic compensation challenges. Includes chapter objectives, summaries, key terms, discussion questions, and exercises

HRM 5142: Labor Relations: Reviews the history and development of labor relations, the structure of union organizations, and the process of negotiations and contract administration. Applicable laws and regulations governing collective bargaining and impasse resolution are also examined.

HRM 5143: Leadership: Theory and Practice: Being a Leader, Recognizing Your Traits, Recognizing Your Philosophy and Style of Leadership, Attending to Tasks and Relationships, Developing Leadership Skills, Creating a Vision, Setting the Tone, Listening to Out-Group Members, Overcoming Obstacles and Addressing Ethics in Leadership.

HRM 5144: Managing Human resources for Innovation and Change: Provides learners with the technical background needed to be a knowledgeable consumer of human resource (HR) products and services, to manage HR effectively, or to be a successful HR professional. While clearly strategic in nature, the course also emphasizes how managers can more effectively acquire, develop, compensate, and manage the internal and external environment that relates to the management of human resources.

HRM 5145: Human Resource Management in Public Service: Throughout history the challenge to managers has been to manage the organization's human resources to achieve peaceful, productive and profitable organizational outcomes. This specialization studies the interrelationships between human resources and the business organization, equipping the manager to function as a HRM specialist in business, industry, and service organizations.

HRM 5146: Employment Law for Human Resource Practice: explains the major issues and rules of employment law and how they apply to your human resource career. Clippings of current news stories and events, hypothetical situations, and real cases help you understand

how the law applies to each stage of employment—from hiring, to managing, to firing—and emphasize the application of legal concepts to future business situations.

HRM 6140: Human resources Information systems: Introduction to human resources management and human resources information systems, determining human resources information systems needs human resources implementation and acceptance, human resources information systems application and special topics in human resources information systems.

HRM 6141: Strategic Compensation in Human Resources Management: Addressing traditional aspects of compensation, such as job analysis and pay structure, as well as recent topics including knowledge-based pay and executive compensation; Contains sections on the context of compensation practice, bases for pay, designing compensation systems, employee benefits, and contemporary strategic compensation challenges. Includes chapter objectives, summaries, key terms, discussion questions, and exercises

HRM 6142: Labor Relations: Reviews the history and development of labor relations, the structure of union organizations, and the process of negotiations and contract administration. Applicable laws and regulations governing collective bargaining and impasse resolution are also examined.

HRM 6143: Leadership: Theory and Practice: Being a Leader, Recognizing Your Traits, Recognizing Your Philosophy and Style of Leadership, Attending to Tasks and Relationships, Developing Leadership Skills, Creating a Vision, Setting the Tone, Listening to Out-Group Members, Overcoming Obstacles and Addressing Ethics in Leadership.

HRM 6144: International Human resources Management: Uncovering precisely why International Human Resource Management is important for success in international business and how International Human Resource Management policies and practices function within the multinational enterprise, this comprehensive textbook provides an outstanding foundation for understanding the theory and practice of International Human Resource Management.

HRM 6145: Managing Human resources for Innovation and Change: Provides learners with the technical background needed to be a knowledgeable consumer of human resource (HR) products and services, to manage HR effectively, or to be a successful HR professional. While clearly strategic in nature, the course also emphasizes how managers can more effectively acquire, develop, compensate, and manage the internal and external environment that relates to the management of human resources.

HRM 6146: Human Resource Management in Public Service: Throughout history the challenge to managers has been to manage the organization's human resources to achieve peaceful, productive and profitable organizational outcomes. This specialization studies the interrelationships between human resources and the business organization, equipping the manager to function as a HRM specialist in business, industry, and service organizations.

HRM 6147: Employment Law for Human Resource Practice: explains the major issues and rules of employment law and how they apply to your human resource career. Clippings of current news stories and events, hypothetical situations, and real cases help you understand how the law applies to each stage of employment—from hiring, to managing, to firing—and emphasize the application of legal concepts to future business situations.

HRM 6148: Quality Management for Organizational Excellence: Covers the theories and principles of total quality in the real world, current and comprehensive, it covers every aspect of total quality -- including several that receive little or no attention in other total quality books, and makes an understanding in order to compete in the global arena, businesses must achieve consistent peak performance, continual improvement, and maximum competitiveness with coverage of Lean and Lean Six Sigma. Key topics covered include global competitiveness; strategic management; ethics and corporate social responsibility; partnering and strategic alliances; quality culture; customer satisfaction and retention; employee empowerment; leadership; teamwork; communication; education and training; overcoming negativity; the ISO 9000 quality management system; tools and techniques; and implementing total quality management.

HRM 6149: Work Motivation and Attitudes: Analysis and application of motivational theories and principles to individuals and groups in the workplace. Evaluation of the theory and application of various programs and techniques tried previously, including job enrichment, participative management, improved supervision, compensation systems, goal setting, and management by objectives, reinforcement, and leadership development and influence techniques.

12.02.07 - International Business Administration:

IB 5140: International Business: Studies Background for International Business, Comparative Environmental Frameworks, Theories and Institutions, Trade and Investment, World Financial Environment, Global Strategy, Structure, Implementation, and Managing International Operations.

IB 5141: The Cultural Dimension of International Business: Focuses on understanding the interaction between global business and culture, discussion of comparative values and cultural differences and knowing the importance of understanding nonverbal communication patterns prevalent in the international business arena, and examination of three functional processes critical to success in conducting global business: negotiating, partnering, and managing

IB 5142: International Human resources Management: Uncovering precisely why International Human Resource Management is important for success in international business and how International Human Resource Management policies and practices function within the multinational enterprise, this comprehensive textbook provides an outstanding foundation for understanding the theory and practice of International Human Resource Management.

IB 5143: International Business Law: Brings the most important aspects of international business law into one work, discusses issues from a truly international, rather than a comparative, perspective, deals with topics such as sovereignty, risks, regulatory aspects of international business, transfer of technology and turn-key contracts.

IB 5144: Global Business Strategic Management: Covers the process of globalization, managing globally, broad issues in globalization and Global trends.

IB 5145: International Economics: Presents the economic foundations of international trade, investment, governmental intervention in international business, international monetary system, balance of payments analysis, the foreign exchange markets and currencies.

IB 5146: International Marketing: Analyzes the environmental conditions that enhance or inhibit the international firm's efforts to use the most effective marketing techniques for demand cultivation in selected regions of the world.IB5014 - Cultural Environment of International Business - Examines the complexities of operating in foreign environments and managing organizational relationships and responses to different cultural logics and objectives.

IB 6140: International Business: Focuses on the overview of world trade and the international economic, political, and cultural environments for business.

IB 6141: International Marketing: Analyzes the environmental conditions that enhance or inhibit the international firm's efforts to use the most effective marketing techniques for demand cultivation in selected regions of the world.IB5014 - Cultural Environment of International Business - Examines the complexities of operating in foreign environments and managing organizational relationships and responses to different cultural logics and objectives.

IB 6142: International Business Law: Brings the most important aspects of international business law into one work, discusses issues from a truly international, rather than a comparative, perspective, deals with topics such as sovereignty, risks, regulatory aspects of international business, transfer of technology and turn-key contracts.

IB 6143: Total Quality Management in International Business: Examines the key issues of competitiveness, globalization, computerization, and ethical behavior within a total quality framework, and stresses the importance of balancing quality and competitiveness in global markets.

IB 6144: The Cultural Dimension of International Business: Provides a foundation for understanding the impact of culture on global business and global business on culture.

IB 6145: International Economics: Presents the economic foundations of international trade, investment, governmental intervention in international business, international monetary system, balance of payments analysis, the foreign exchange markets and currencies.

IB 6146: Global Business Strategic Management: Develops a systems management model for planning and achieving desired organizational outcomes for the global business.

IB 6147: Operations Strategy: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations. Credits: 3.0 Lec-Rec-Lab: (3-0-0)

IB 6148: Supply Chain Logistics Management: This course is concerned with applying evolving methods in more closely integrating the processes of product distribution and supply chain management using the power and speed of electronic connectivity. The concepts presented can be applied to the activities of businesses, government agencies and nonprofit organizations.

IB 6149: International Business Administration Research Project: Field study to apply international business administration to a situation of the Learner's choice. This course requires the graduate Learner to conduct a research study in an area of International Business and to document the results in a formal project report.

12.02.08 - Electronic Commerce

ECM 5140: Introduction to E-Commerce: Fundamental study of computer application in commerce including software applications supply management, retail management, e-payment, web based commerce with an example of purchase cart management and control. Also included is a hand on design and programming assignment that evolves dynamic web pages and visual applications.

ECM 5141: E-Commerce Concepts: Electronic commerce touches each of us daily. As consumers we are continually offered products and services via the Internet. In our jobs, no matter what profession we are in, electronic commerce is being used more and more to conduct business, for training purposes and daily communications. This course examines the principles of electronic commerce and business transactions on the Internet.

ECM 5142: Monitoring Web-Based Applications and Infrastructure: Provides Learners with the skills to build powerful Web-based applications for the electronic commerce environment.

ECM 5143: Managerial Electronic Commerce: Provides a thorough explanation of what EC is how it's being conducted and managed, and how to assess its opportunities, limitations, issues, and risks all from a managerial perspective.

ECM 5144: Electronic Payment Systems: Examines in detail the transformation of the VISA system from a collection of non-integrated, localized, paper-based bank credit card programs into the cooperative, global, electronic value exchange network it is today.

ECM 5145: Supply Chain Logistics Management: This course is concerned with applying evolving methods in more closely integrating the processes of product distribution and supply chain management using the power and speed of electronic connectivity. The concepts presented can be applied to the activities of businesses, government agencies and nonprofit organizations.

ECM 5146: E-Commerce Marketing for Internet: This course develops the framework for concept marketing on the Internet and is an extension of traditional marketing courses. The Learner will look at the Internet as a content resource, channel resource, and communication resource for marketing "business to business" and "business to consumer".

ECM 6140: E-Commerce Concepts: Electronic commerce touches each of us daily. As consumers we are continually offered products and services via the Internet. In our jobs, no matter what profession we are in, electronic commerce is being used more and more to conduct business, for training purposes and daily communications. This course examines the principles of electronic commerce and business transactions on the Internet.

ECM 6141: E-Commerce for Entrepreneurs: This course is designed specifically for the entrepreneur launching a business. The Learner will look at email targeting, direct email marketing, use of brochure websites, choice and use of mailing lists, website development and maintenance, and generation of website traffic.

ECM 6142: E-Commerce Marketing for Internet: This course develops the framework for concept marketing on the Internet and is an extension of traditional marketing courses. The Learner will look at the Internet as a content resource, channel resource, and communication resource for marketing "business to business" and "business to consumer".

ECM 6143: Electronic Commerce Research Project: A field study in electronic commerce in an area of the Learner's choosing. This course requires the graduate Learner to conduct a research study in an area of electronic commerce and to document the results in a formal project report.

ECM 6144: Electronic Payment Systems: Examines in detail the transformation of the VISA system from a collection of non-integrated, localized, paper-based bank credit card programs into the cooperative, global, electronic value exchange network it is today.

ECM 6145: Integrated Supply Chain Management: This course is concerned with applying evolving methods in more closely integrating the processes of product distribution and supply chain management using the power and speed of electronic connectivity. The concepts presented can be applied to the activities of businesses, government agencies and nonprofit organizations.

ECM 6146: Localization Strategies for E-Business: The acceleration of globalization and the growth of emerging economies present significant opportunities for business expansion. One of the quickest ways to achieve effective international expansion is by leveraging the web, which allows for technological connectivity of global markets and opportunities to compete on a global basis. To systematically engage and thrive in this networked global economy, professionals and students need a new skill set; one that can help them develop, manage, assess and optimize efforts to successfully launch websites for tapping global markets.

ECM 6147: Managerial Electronic Commerce: Provides a thorough explanation of what EC is how it's being conducted and managed, and how to assess its opportunities, limitations, issues, and risks—all from a managerial perspective.

ECM 6148: Monitoring Web-Based Applications and Infrastructure: Provides Learners with the skills to build powerful Web-based applications for the electronic commerce environment.

ECM 6149: Supply Chain Logistics Management: This course is concerned with applying evolving methods in more closely integrating the processes of product distribution and supply chain management using the power and speed of electronic connectivity. The concepts presented can be applied to the activities of businesses, government agencies and nonprofit organizations.

12.02.09 - Financial Management:

FIN 5140: Investment Analysis and Portfolio Management: Develops a framework to make intelligent investment decisions and achieve successful investment results through a global outlook. Covers the theoretical and technical concepts involved in investing in marketable securities. A framework for making intelligent investment decisions and achieving successful investment results is developed

FIN 5141: Financial Markets and Institutions: Overview of the Financial System and fundamentals of financial markets, interest rates mean and role in valuation, fundamentals of financial institutions, central banking and the conduct of monetary policy, financial markets, financial institutions industry and management of financial institutions.

FIN 5142: International Finance, Transactions, Policy, and Regulation: Studies international financial systems and markets; Covers the principle of comparative advantage, balance of payments, exchange rate systems, theories of international finance, identification of international risk exposures, the management and treatment of risk, and special topics of international finance.

FIN 5143: Financial Risk Management and Financial Engineering: Detailed analysis of the measurement of financial risk and the tools and techniques available to manage financial risk. Topics include financial disasters, risk measurement (market, default, currency exchange, value-at-risk) and the hedging of these risks.

FIN 5144: Accounting for Nonprofit Organizations: Provides a complete review of accounting principles used in not-for-profit organizations with emphasis on governmental accounting practices.

FIN 5145: Financial Management : Theory & Practice: Fundamental Concepts of Corporate Finance, Fixed Income Securities, Stocks and Options, Projects and Their Valuations, Corporate Valuation and Governance, Cash Distribution and Capital Structure, Tactical Financing Decisions, Mergers, LBOs, Divestitures, and Holding Companies, Bankruptcy, Reorganization, Liquidation, Derivatives and Risk Management, Portfolio Theory, Asset Pricing Models, and Behavioral Finance, Real Options, Analysis of Capital Structure Theory, Providing and Obtaining Credit, Advanced Issues in Cash Management and Inventory Control, Pension Plan Management and Financial Management in Not-For-Profit Businesses.

FIN 5146: Managerial Accounting: Focus study of Managerial Accounting and Cost Concepts, Job-Order Costing, Process Costing, Cost-Volume-Profit Relationships, Variable Costing and Segment Reporting, Activity-Based Costing, Profit Planning, Flexible Budgets and Performance Analysis, Standard Costs and Variances, Performance Measurement in Decentralized Organizations, Differential Analysis, Capital Budgeting Decisions, Statement of Cash Flows and Financial Statement Analysis.

FIN 6140: Investment Analysis and Portfolio Management: Develops a framework to make intelligent investment decisions and achieve successful investment results through a global outlook. Covers the theoretical and technical concepts involved in investing in marketable securities. A framework for making intelligent investment decisions and achieving successful investment results is developed

FIN 6141: Financial Markets and Institutions: Overview of the Financial System and fundamentals of financial markets, interest rates mean and role in valuation, fundamentals of financial institutions, central banking and the conduct of monetary policy, financial markets, financial institutions industry and management of financial institutions.

FIN 6142: International Finance, Transactions, Policy, and Regulation: Studies international financial systems and markets; Covers the principle of comparative advantage, balance of payments, exchange rate systems, theories of international finance, identification of international risk exposures, the management and treatment of risk, and special topics of international finance.

FIN 6143: Foundations of Financial Management: The lifeblood of every organization - private, public, religious or corporate - is its financial resources. Managers must know how to manage and allocate resources in order to ensure long-term profitability and organizational health. This specialization concentrates on developing these essential skills.

FIN 6144: Accounting for Nonprofit Organizations: Provides a complete review of accounting principles used in not-for-profit organizations with emphasis on governmental accounting practices.

FIN 6145: Quality Concepts in Financial Management: Examines how the financial function is changing in organizations committed to Total Quality Management practices. Emphasizes the importance of the financial function in emerging and developing Total Quality Management systems

FIN 6146: Financial Statement Analysis: Shows how accounting is used for analysis and managerial decision-making by comparing ratios to directly measure and evaluate economic outcomes.

FIN 6147: Accounting for Nonprofit Organizations: Provides a complete review of accounting principles used in not-for-profit organizations with emphasis on governmental accounting practices.

FIN 6148: Financial Management Research Project: Field study in financial management in a situation of the Learner's choosing. This course requires the graduate Learner to conduct a research study in an area of Financial Management and to document the results in a formal project report.

FIN 6149: Electronic Payment Systems: Examines in detail the transformation of the VISA system from a collection of non-integrated, localized, paper-based bank credit card programs into the cooperative, global, electronic value exchange network it is today.

12.02.10 - Management:

MGT 4140: Business Communications: Covers foundations of business communication, the writing process, brief messages, reports and oral presentations, and employment messages. Learning features include on-the-job vignettes, Web links, profiles of business communication professionals, and many sample documents for analysis and critique. Other features include cases and questions and case-based exercises. Also includes writing for the

Web and e-business communication with intercultural communication, workplace ethics, career skills, and technology.

MGT 4141: Organizational Behavior: Covers concepts of human relations and organizational behavior through the study of people's behavior at work. Develop understanding, attitudes, and skills leading to increased personal effectiveness.

MGT 4142: Foundation of Financial Management: Focuses on the financial management in general including statements review, analysis and reporting methods

MGT 4143: Business Statistics: Introduction to basic concepts and methods of probability and statistics, including the following topics: collection, description and presentation of data, probability, random variables, sampling, probability distributions, estimation and hypothesis testing, ANOVA, and selected non-parametric techniques.

MGT 4144: Developing Management Skills: Methods of evaluation and development of applied management skills at the levels of lower, middle and senior management and methods to select leaders from working force

MGT 4145: Managerial Accounting: Explores the nature of managerial accounting as it relates to decision-making, analyses concepts and systems. It Presents planning and control methods such as cost-volume-profit analysis and budgeting.

MGT 4146: Essentials of Marketing Management: Covers the principals and essentials of marketing management including methods of planning, practice, analysis, evaluation and replanting with marketing research methods

MGT 4147: Essentials of Human resources Management: Focuses on human resources management including recruiting, benefits design, evaluation and legal management

MGT 4148: Money, Banking and Financial Market: Focuses on the basic functions served by the financial system while deemphasizing its current structure and rules, and provides students with knowledge and training to gain the ability to understand and evaluate whatever financial innovations and developments they confront learning the economic rationale behind current financial tools, rules, and structures is much more valuable than concentrating on the tools, rules, and structures themselves..

MGT 4149: Supervisory Management: Give the tools to develop superior supervisory skills and a firm grasp of management principles. Through hands-on approach to Supervision, the course inspires with its positive approach to working WITH people to develop and empower them in their jobs; incorporating cutting-edge content with real-world cases and Skill Builders that give students plenty of opportunities to hone new Supervision skills.

MGT 4150: Administrative Office Management: Integrates the software applications skills, business communication skills, critical thinking, and concepts and activities that address the workplace environment, customer service, mail, travel, meetings, and events, records management; Students take this course because they'll be entering the workforce as administrative professionals and need to learn about office procedures, communication styles, financial factors and methods, meeting preparation, and office technology among other topics.

MGT 4151: Small Business Management: Introduction to both entrepreneurship and small business management with a focus on achieving and maintaining a small organization and features a special focus on the impact of the financial crisis on small business management.

MGT 5140: Organizational Behavior and Management: Behavioral theories of the organization are inherent in the operation of all organizations. Behavior of individuals and groups in organizations serve to determine the organizational climate and health. This course examines the nature of the behavior of organizations.

MGT 5141: Managerial Economics & Business Strategy: The Fundamentals of Managerial Economics, Market Forces: Demand and Supply, Quantitative Demand Analysis The Theory of Individual Behavior, The Production Process and Costs, The Organization of the Firm, The Nature of Industry Managing in Competitive, Monopolistic, and Monopolistically Competitive Markets, Basic Oligopoly Models, Chapter 10: Game Theory: Inside Oligopoly, Pricing Strategies for Firms with Market Power, The Economics of Information, Advanced Topics in Business Strategy, A Manager's Guide to Government in the Marketplace, Case Study: Challenges at Time Warner: A Case Study in Business Strategy

MGT 5142: Retail Management -: An Introduction to Retailing, Building and Sustaining Relationships in Retailing, Strategic Planning in Retailing, Retail Institutions by Ownership, Retail Institutions by Store-Based Strategy, Web, Non-store-Based, and Other Forms of Nontraditional Retailing, Identifying and Understanding Consumers, Information Gathering and Processing in Retailing, Trading-Area Analysis, Selection, Retail Organization and Human Resource Management, Operations Management: Financial Dimensions, Operations Management: Operational Dimensions, Developing Merchandise Plans, Implementing Merchandise, Financial Merchandise Management, Pricing in Retailing, Establishing and Maintaining a Retail Image, Promotional Strategy and integrating and Controlling the Retail Strategy.

MGT 5143: Strategic Management Theory: An Integrated Approach: Presents the complexities of strategic management through up-to-date scholarship and hands-on applications. Highly respected authors Charles Hill and Gareth Jones integrate cutting-edge research on topics including corporate performance, governance, strategic leadership, technology, and business ethics through both theory and case studies. Based on real-world practices and current thinking in the field, the tenth edition of STRATEGIC MANAGEMENT features an increased emphasis on the changing global economy and its role in strategic management. The high-quality case study program contains 31 cases covering small, medium, and large companies of varying backgrounds. All cases are available in the main student text or the core case text.

MGT 5144: Operations Management: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations.

MGT 5145: Managerial Accounting: Focus study of Managerial Accounting and Cost Concepts, Job-Order Costing, Process Costing, Cost-Volume-Profit Relationships, Variable Costing and Segment Reporting, Activity-Based Costing, Profit Planning, Flexible Budgets and Performance Analysis, Standard Costs and Variances, Performance Measurement in Decentralized Organizations, Differential Analysis, Capital Budgeting Decisions, Statement of Cash Flows and Financial Statement Analysis.

MGT 5146: Organizational Development: Survey of methodological approaches to planned change, including organizational diagnosis, data collection, interventions, feedback, and evaluation. Specific types of interventions covered include strategic planning, organizational design, culture change, team building, survey feedback, goal setting, and career development.

MGT 6140: Managerial Economics & Business Strategy: The Fundamentals of Managerial Economics, Market Forces: Demand and Supply, Quantitative Demand Analysis The Theory of Individual Behavior, The Production Process and Costs, The Organization of the Firm, The Nature of Industry Managing in Competitive, Monopolistic, and Monopolistically Competitive Markets, Basic Oligopoly Models, Chapter 10: Game Theory: Inside Oligopoly, Pricing Strategies for Firms with Market Power, The Economics of Information, Advanced Topics in Business Strategy, A Manager's Guide to Government in the Marketplace, Case Study: Challenges at Time Warner: A Case Study in Business Strategy

MGT 6141: Financial Management : Theory & Practice: Fundamental Concepts of Corporate Finance, Fixed Income Securities, Stocks and Options, Projects and Their Valuations, Corporate Valuation and Governance, Cash Distribution and Capital Structure, Tactical Financing Decisions, Mergers, LBOs, Divestitures, and Holding Companies, Bankruptcy, Reorganization, Liquidation, Derivatives and Risk Management, Portfolio Theory, Asset Pricing Models, and Behavioral Finance, Real Options, Analysis of Capital Structure Theory, Providing and Obtaining Credit, Advanced Issues in Cash Management and Inventory Control, Pension Plan Management and Financial Management in Not-For-Profit Businesses.

MGT 6142: Strategic Management Theory: An Integrated Approach: Presents the complexities of strategic management through up-to-date scholarship and hands-on applications. Highly respected authors Charles Hill and Gareth Jones integrate cutting-edge research on topics including corporate performance, governance, strategic leadership, technology, and business ethics through both theory and case studies. Based on real-world practices and current thinking in the field, the tenth edition of STRATEGIC MANAGEMENT features an increased emphasis on the changing global economy and its role in strategic management. The high-quality case study program contains 31 cases covering small, medium, and large companies of varying backgrounds. All cases are available in the main student text or the core case text.

MGT 6143: Operations Management: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations.

MGT 6144: Leadership in Organizations: Investigates leadership roles, styles, philosophy and behavior in organizations.

MGT 6145: Managerial Communication: Strategies and Applications: focuses on skills and strategies that managers need in today's workplace. This book continues to stand out in the field for its strategic approach, solid research base, comprehensive range of topics, even-handed examination of oral and written channels, and focus on managerial, not entry-level, competencies. The overriding principle for the revision was to preserve the book's key strengths while reflecting the realities of the twenty-first century workplace. The chapters have been streamlined and condensed to meet the needs of a busy contemporary manager and content has been added to reflect current business practices.

MGT 6146: Entrepreneurship: Focuses on Decision to Become an Entrepreneur, Developing Successful Business Ideas, Moving from an Idea to an Entrepreneurial Firm and Managing and Growing an Entrepreneurial Firm

MGT 6147: Business and Management Consulting: Explores the process and dimensions of management consulting including identification and nature of the client system, definition of the problem(s) in establishing the contract, ethics, tools, and techniques of the consulting practice.

MGT 6148: Organizational Development: Survey of methodological approaches to planned change, including organizational diagnosis, data collection, interventions, feedback, and evaluation. Specific types of interventions covered include strategic planning, organizational design, culture change, team building, survey feedback, goal setting, and career development.

MGT 6149: Crisis Management: Focuses on how to identify, isolate, and manage a crisis by analyzing actual crisis situations.

12.02.11 - Management Information Systems:

MIS 5140: Management Information Systems: Provides an overview of MIS from the manager's perspective, including major system components, processing and reporting.

MIS 5141: Information Systems Project Management: The Nature Of Information Technology Projects, Conceptualizing And Initializing The IT Project, The Project Infrastructure, The Human Side Of Project Management, Defining And Managing Project And Product Scope, The Work Breakdown Structure And Project Estimation, The Project Schedule And Budget, Managing Project Risk, Project Communication, Tracking, And Reporting, IT Project Quality Management, Managing Organizational Change, Resistance And Conflict, Project Procurement Management And Outsourcing, Leadership And Ethics, and Project Implementation, Closure, And Evaluation.

MIS 5142: Fundamentals of Database Management Systems: Focuses on data as a valuable organizational resource that must be managed, distributed, and maintained in a secure manner.

MIS 5143: Decision Support and Business Intelligence Systems: Presents the various managerial information support systems such as transaction processing, structured decision, decision support and knowledge systems.

MIS 5144: Telecommunications and Business Strategy: Provides the necessary management tools for business system configurations for networks, data distribution, and telecommunication.

MIS 5145: Systems Analysis and Design: Provides an understanding of the IS development and modification process and the evaluation choices of a system development methodology. It emphasizes effective communication with users and team members and others associated with the development and maintenance of the information system and stresses analysis and logical design of departmental-level information system.

MIS 5146: IT Systems Management: Develops a step-by-step approach to becoming an effective consultant based upon the skills developed in computer programming, networking, computer analysis, systems installation, development, and related areas.

MIS 6140: Management Information Systems: Provides an overview of MIS from the manager's perspective, including major system components, processing and reporting.

MIS 6141: Information Systems Development: Examines the MIS development process and the tools and techniques of systems development from analysis, design, and acquisition, to implementation and evaluation.

MIS 6142: Database Management Systems: Focuses on data as a valuable organizational resource that must be managed, distributed, and maintained in a secure manner.

MIS 6143: Decision Support and Business Intelligence Systems: Presents the various managerial information support systems such as transaction processing, structured decision, and decision support and knowledge systems.

MIS 6144: Telecommunications and Business Strategy: Provides the necessary management tools for business system configurations for networks, data distribution, and telecommunication.

MIS 6145: Local Area Networks Switching and Wireless: Presents LAN implementation and examines how different architectures reflect standards and compatibility.

MIS 6146: Total Quality Management in MIS: Presents the application of Total Quality Management principles, tools and techniques in defining, constructing, and delivering automated information systems and services to meet the challenges of modern organizational requirements.

MIS 6147: Wide Area Networks (WAN): Focuses on the technical aspects of computer communication for worldwide communication through wide area networking.

MIS 6148: IT Systems Management: Develops a step-by-step approach to becoming an effective consultant based upon the skills developed in computer programming, networking, computer analysis, systems installation, development, and related areas.

MIS 6149: Management Information Systems Research Project: Provides learners with an opportunity to do a real-world field study in management information systems. This course requires the Graduate Learner to conduct a research study in an area of Management Information Systems and to document the results in a formal project report.

12.02.12 - Marketing Management:

MK 4140: Integrated Supply Chain Management: This course is concerned with applying evolving methods in more closely integrating the processes of product distribution and supply chain management using the power and speed of electronic connectivity. The concepts presented can be applied to the activities of businesses, government agencies and nonprofit organizations.

MK 4141: Business Communications: Covers foundations of business communication, the writing process, brief messages, reports and oral presentations, and employment messages. Learning features include on-the-job vignettes, Web links, profiles of business communication professionals, and many sample documents for analysis and critique. Other features include cases and questions and case-based exercises. Also includes writing for the Web and e-business communication with intercultural communication, workplace ethics, career skills, and technology.

MK 4142: Marketing Essentials: Shows how to improve sales and develop new markets for products and services.

MK 4143: Rules of Marketing and Public Relations: Focuses on marketing principles and rules that controls business relations within the business or organization as well as the business and public relations between vendors and customers and/or consumers in general

MK 4144: Marketing Research: Covers marketing research theory and practice and demonstrates how marketing concepts can be carried out in reality, and which methods are most appropriate for particular types of research with utilization of digital developments and case studies enabling students to understand the issues involved in carrying out research and the potential pitfalls to be aware of, thereby ensuring a clear understanding of the overall subject.

MK 4145: Essentials of Marketing Management: Covers the principals and essentials of marketing management including methods of planning, practice, analysis, evaluation and planning with marketing research methods

MK 4146: Small Business Management: Introduction to both entrepreneurship and small business management with a focus on achieving and maintaining a small organization and features a special focus on the impact of the financial crisis on small business management.

MK 4147: Advertising Principles and Practice: The New World of Marketing Communication, Integrated Brand Communication, Brand Communication and Society, How Brand Communication Works, Segmenting and Targeting the Audience, Strategic Research, Strategic Planning, Creative Strategy, Copywriting, Visual Communication, Media Basics, Traditional Media, Digital Media, Media Planning and Buying, Public Relations, Direct-Response, Promotions, The IMC Umbrella, Evaluation of Effectiveness

MK 4148: Retail Management: An Introduction to Retailing, Building and Sustaining Relationships in Retailing, Strategic Planning in Retailing, Retail Institutions by Ownership, Retail Institutions by Store-Based Strategy, Web, Non-store-Based, and Other Forms of Nontraditional Retailing, Identifying and Understanding Consumers, Information Gathering and Processing in Retailing, Trading-Area Analysis, Selection, Retail Organization and Human Resource Management, Operations Management: Financial Dimensions, Operations Management: Operational Dimensions, Developing Merchandise Plans, Implementing Merchandise, Financial Merchandise Management, Pricing in Retailing, Establishing and Maintaining a Retail Image, Promotional Strategy and integrating and Controlling the Retail Strategy.

MK 4149: Sales Force Management: Effective selling demands knowledge not only of the business product or service, but also the techniques of dealing with the customer's needs and

wants and overcoming objections. Effective selling focuses on the customer's perceived product value and customer need satisfaction

MK 4150: Developing Management Skills: Methods of evaluation and development of applied management skills at the levels of lower, middle and senior management and methods to select leaders from working force

MK 4151: Introduction to Digital Marketing: Covers all the key topics including search engine optimization and social media marketing. With real-world case studies to illustrate digital marketing in practice and exercises to help you analyze, plan and execute effective strategies within the workplace, this practical resource will prepare you to undertake digital marketing across a variety of organizations.

12.02.13 - Management of Engineering and Technology

MET 5130: Principles of Productivity and Operation Management: Presents a broad introduction to the field of operations in a realistic and practical manner, while offering the largest and most diverse collection of problems on the market; and covers operations strategy for competitive advantage, forecasting, design of goods and services, human resources, e-commerce, project management, inventory management, and maintenance.

MET 5132: Operations Research: introduces deterministic models, probabilistic models, and nonlinear models of decision making and problem solving, with example applications of the Tora, Excel, Lingo, and Ampl programs

MET 5132: Applied Decision Theory: Causal decision theory, Decision theory, Evidential decision theory, 0-1 loss function, Action axiom, Admissible decision rule, Aggregated Indices Randomization Method, Ambiguity aversion, Analysis paralysis, Analytic Hierarchy Process, Analytic network process, Anthony Triangle, Applied information economics, Behavioral operations research, Belief decision matrix, Belief structure, Binary decision, Brown Gibson Model, Business rules engine, Buyer decision processes, Cause-effect graph, Choice, Choice architecture, Choice-supportive bias, Coquet integral, Clarity test, Clinical decision support system, Cognitive bias, Cognitive inertia, Collaborative method, Connectionist expert system, Consensus decision-making, Consensus-seeking decision-making, Consensus-expectations gap, Cost-benefit analysis, Crossover voting, Cumulative prospect theory, Decision aids, Decision analysis, Decision analysis cycle, Decision engineering, Decision making, Decision making models, Decision making software, Decision matrix, Decision model, Decision rule, Decision support system, Decision table, Decision tree, Decision-matrix method, Decision-theoretic rough sets, Decoy effect, Deployment cost-benefit selection in physiology, Distinction bias, Dominating decision rule, Dynamic decision making, Economic appraisal, Election, ELECTRE, Ellsberg paradox, Emotional bias, Emotions in decision making, E-Rule-making, European Working Group on Multiple Criteria Decision Aiding, Evidence-based design, Evidential reasoning approach, Executive information system, Expected value of including uncertainty, Expected value of perfect information, Expected value of sample information, Expert system, Expert systems for mortgages, Faustmann's formula, Flipism, Fuzzy-trace theory, Gittins index, Group decision making, Health management system, Hierarchical Decision Process, High-dimensional statistics, Homothetic preferences, House of Quality, Hyperbolic absolute risk aversion, IDF model, Inference engine, Influence diagram, Info-gap decision theory, Institutionalism in international relations, Intelligent decision support systems, Inter-temporal choice, James-Stein estimator, Kelly criterion, Kepner-Tregoe Inc., Linear partial

information, Litmus test (politics), Lock-in (decision-making), Loss aversion, Loss function, Management information system, Mean-preserving spread, Mental accounting, Minimax, Minimax estimator, Model-based reasoning, Movement pattern analysis, Multi-Attribute Global Inference of Quality, Multi-criteria decision analysis, Multi-criteria classification, Multi-scale decision making, Naive diversification, Nash equilibrium, Naturalistic decision making, Negotiation theory, New Approach to Appraisal, Nominal group technique, Nonstructural Fuzzy Decision Support System, Omission bias, Optimal decision, Optimal stopping, Organizational ethics, Path dependence, Policy, Polynomial conjoint measurement, Potentially all pair wise rankings of all possible alternatives, Price of stability...and much more

MET 5133: Quality Management for Organizational Excellence: Covers the theories and principles of total quality in the real world, current and comprehensive, it covers every aspect of total quality -- including several that receive little or no attention in other total quality books, and makes an understanding in order to compete in the global arena, businesses must achieve consistent peak performance, continual improvement, and maximum competitiveness with coverage of Lean and Lean Six Sigma. Key topics covered include global competitiveness; strategic management; ethics and corporate social responsibility; partnering and strategic alliances; quality culture; customer satisfaction and retention; employee empowerment; leadership; teamwork; communication; education and training; overcoming negativity; the ISO 9000 quality management system; tools and techniques; and implementing total quality management.

MET 5134: Occupational Safety and Health: Full study of the history and current state of occupational safety and health, the causes and consequences of accidents, the relevant laws and regulations, safety analysis, accident investigation, training, ethics, and specific concern areas. These include: ergonomics, stress, machine hazards, temperature extremes, pressure, electricity, fire, industrial hygiene, radiation, noise, emergencies, bloodborne pathogens, environmental safety, product safety, and violence

MET 5140: Technology, Management, and Society: Comprehensive coverage of Information, Communications, and Understanding, Management's New Role, Work and Tools, Technological Trends in the current Century, The Pre-technological Civilization of 1900, The Once and Future Manager, The First Technological Revolution and Its Lessons, Long-range Planning, Business Objectives and Survival Needs, The Manager and the Moron and The Technological Revolution.

MET 5141: Industrial Organization: Theory and Practice: Theory and Practice–which features early coverage of Antitrust–punctuates its modern introduction to industrial organization with relevant empirical data and case studies to show how to apply theoretical tools.

MET 5142: Technology Management: Activities and Tools: Practical approach to developing operational efficiency and productivity with an accessibility that provides a wealth of examples, tools and activities designed to increase the dynamic capability of an organization. There is no single best way to manage technology in a company: but there are lessons that can be learned from other companies via case studies, and theoretical frameworks to guide learners towards successful analysis and implementation.

MET 5143: Managing Research and Development Organizations: Focus on ways to improve R&D organization productivity and foster excellence in such companies and describes how to design jobs, organize hierarchies, resolve conflicts, motivate employees, and create an innovative work environment, with an extensive cross-cultural coverage of European and Pacific

Rim R&D organizations and policies which greatly differ from the US and includes an entirely new section on various strategic planning elements unique to an R&D organization along with a case study.

MET 5144: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development on the internet. Some advanced concepts in resource constraint management and design matrix are included.

MET 5145: Managing Human resources for Innovation and Change: Provides learners with the technical background needed to be a knowledgeable consumer of human resource (HR) products and services, to manage HR effectively, or to be a successful HR professional. While clearly strategic in nature, the course also emphasizes how managers can more effectively acquire, develop, compensate, and manage the internal and external environment that relates to the management of human resources.

MET 5146: Process Technology Equipment and Systems: Study of process technology learners with state-of-the-art graphics and photos, alongside updated information that keeps pace with industry developments and launches several process technicians into the chemical processing industry in a student and industry-oriented approaches and contains excellent line art to better illustrate key points and processes. Key topics include valves, vessels, and piping, pumps and compressors, motors and turbines, heat exchangers, cooling towers, boilers and furnaces, reactors and distillation, extraction and separation systems, and process instrumentation.

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MET 6142: Operations Research: introduces deterministic models, probabilistic models, and nonlinear models of decision making and problem solving, with example applications of the Excel, Lingo, and Ampl programs

MET 6143: Quality Management for Organizational Excellence: Covers the theories and principles of total quality in the real world, current and comprehensive, it covers every aspect of total quality -- including several that receive little or no attention in other total quality books, and makes an understanding in order to compete in the global arena, businesses must achieve consistent peak performance, continual improvement, and maximum competitiveness with coverage of Lean and Lean Six Sigma. Key topics covered include global competitiveness; strategic management; ethics and corporate social responsibility; partnering and strategic alliances; quality culture; customer satisfaction and retention; employee empowerment;

leadership; teamwork; communication; education and training; overcoming negativity; the ISO 9000 quality management system; tools and techniques; and implementing total quality management.

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MET 6145: Technology, Management, and Society: Comprehensive coverage of Information, Communications, and Understanding, Management's New Role, Work and Tools, Technological Trends in the current Century, The Pre-technological Civilization of 1900, The Once and Future Manager, The First Technological Revolution and Its Lessons, Long-range Planning, Business Objectives and Survival Needs, The Manager and the Moron and The Technological Revolution.

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MET 6148: Managing Research and Development Organizations: Focus on ways to improve R&D organization productivity and foster excellence in such companies and describes how to design jobs, organize hierarchies, resolve conflicts, motivate employees, and create an innovative work environment, with an extensive cross-cultural coverage of European and Pacific Rim R&D organizations and policies which greatly differ from the US and includes an entirely new section on various strategic planning elements unique to an R&D organization along with a case study.

MET 6149: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development on the internet. Some advanced concepts in resource constraint management and design matrix are included.

12.02.14 - Public Administration:

PUB 5140: Introduction to Public Administration: Examines bureaucracy at the federal, state, and local levels with particular focus on the government's working, public policies, and making choices for the benefit of society.

PUB 5141: The Practice of Government Public Relations: Deals with the issues of lobbying in Washington, D.C. and how the government tries to influence public opinion for the sake of providing public benefit.*Prerequisite: fundamental requirement in General Management

PUB 5142: Strategic Managerial Processes: Introduces students to advanced topics in strategic change, strategy formation, and strategy implementation through a review of organization theories and processes. Course materials are applied to specific projects through individual specialized strategic management research projects.

PUB 5143: Public Budgeting Systems: Focuses on the administration and management of public funds for organizations in the public sector at the local, state, and federal levels, and for private nonprofit organizations

PUB 5144: Essentials Of Public Health Management: Addresses major functions and issues surrounding public health service institutions, particularly within the context of a general administrative structure. A framework for developing a foundation and understanding of administrative, environmental, regulatory, financial and planning factors, which influence public health services, is established.

PUB 5145: Public and Non-Profit Private Sector Partnership: Illustrates a five step model that guides governments, NGOs, non-profit private and business sectors and academicians to decide on coordination and collaboration mechanisms, initiate partnership, develop shared plans and monitor partnership performance. It puts forward concepts, approaches and key elements of partnership. Memorandum of understanding which clarifies roles and responsibilities of partners is a prerequisite for productive partnerships

PUB 5146: Accounting for Nonprofit Organizations: Provides a complete review of accounting principles used in not-for-profit organizations with emphasis on governmental accounting practices.

PUB 6140: The Practice of Government Public Relations: Deals with the issues of lobbying in Washington, D.C. and how the government tries to influence public opinion for the sake of providing public benefit.*Prerequisite: fundamental requirement in General Management

PUB 6141: Public Urban Politics in a Global Age: Discusses far-reaching ramifications of urban politics on every walk of public life, such as health, racism, public housing, poverty, unemployment, and inner-city school systems.

PUB 6142: Regional Planning for Contemporary Urban Regions: Examines public planning as a useful tool for the management of public resources, and its impact on villages, townships, towns, cities, states, and the nation.

PUB 6143: Public Budgeting Systems: Focuses on the administration and management of public funds for organizations in the public sector at the local, state, and federal levels, and for private nonprofit organizations

PUB 6144: Essentials Of Public Health Management: Addresses major functions and issues surrounding public health service institutions, particularly within the context of a general administrative structure. A framework for developing a foundation and understanding of administrative, environmental, regulatory, financial and planning factors, which influence public health services, is established.

PUB 6145: Public Program Evaluation: Focuses on methods, procedures, techniques, and methodologies and in evaluating publicly funded programs.

PUB 6146: Complex Public Organizations: Examines the principal conceptual and theoretical bases for understanding the structure and environment of public organizations. Also explores the problems bureaucracy poses for democratic theory and vigorous economy.

PUB 6147: Public Personnel Management: Addresses the most current issues in public personnel management and focuses on controversial–issues in public personal management, such as comparative personnel management, pensions, sexuality, health, succession planning, unions, and the multi-generational workforce.

PUB 6148: Healthcare Strategic Planning: Addresses major functions and issues surrounding public health service institutions, particularly within the context of a general administrative structure. A framework for developing a foundation and understanding of administrative, environmental, regulatory, financial and planning factors, which influence public health services, is established.

PUB 6149: Quality Management in Public Administration: Examines the principles and methods for implementing an effective Total Quality Management system in a governmental environment and provides a variety of planning methods to sustain the system

12.03 - Engineering

12.03.01 Architectural Engineering:

ARCE 4120: Architecture Principles: Focus on the role of architecture principles and provides both a theoretical and a practical perspective on architecture principles. The theoretical perspective involves a brief survey of the general concept of principle as well as an analysis of different flavors of principles. Architecture principles are regarded as a specific class of normative principles that direct the design of an enterprise, from the definition of its business to its supporting IT. The practical perspective on architecture principles is concerned with an approach to the formulation of architecture principles, as well as their actual use in organizations. To illustrate their use in practice, several real-life cases are discussed, an application of architecture principles in TOGAF is included, and a catalogue of example architecture principles is provided.

ARCE 4121: Introduction to Building Information Modeling: Provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation and the profound advantages that can be provided effectively through usage of BIM to all members of a project team. It also includes completely updated material covering the current practice and technology in this fast-moving field, with an expanded coverage of lean construction and its use of BIM, with special focus on Integrated Project Delivery throughout the course.

ARCE 4122: Fundamentals of Engineering Thermodynamics: Covers energy and the first Law of thermodynamics, evaluating properties, control volume analysis using energy, the second law of thermodynamics, using entropy, analysis, vapor power systems, gas power systems, refrigeration and heat pump systems, thermodynamic relations, ideal gas mixtures and, reacting mixtures and combustion and chemical and phase equilibrium.

ARCE 4123: Fundamentals of Structural Analysis: Introduces engineering and architectural learners to the basic techniques for analyzing the most common structural elements, including beams, trusses, frames, cables, and arches. The subject covers the classical methods of analysis for determinate and indeterminate structures, and provides an introduction to the matrix formulation on which computer analysis is based. It also features an expanded treatment of snow, earthquake, and wind loads that are part of the updated ANSI/ASCE 7 standards.

ARCE 4124: Structural Concrete Design: Complete guidance to the analysis and design of reinforced and pre-stressed concrete structures and coverage the latest ACI 318 - 11 code rules, emphasizing the code's strength approach and strain limits. Additional codes, standards, and specifications, as well as material properties and specific loads and safety provisions are also examined in detail. Includes full coverage of the application of shear design to beams with variable length in actual structure, the design of deep beams employing ACI and AASHTO strut-and-tie approach, the design of stepped-type reinforced concrete stairs, not covered anywhere else, seismic design and analysis utilizing the IBC 2012 and ASCE 7-10 code, the design of curved beams subject to flexure, shear, and torsion, pre-stressed concrete bridge design according to AASHTO specifications, and examples for predicting shrinkage and creep of concrete in both U.S. and SI units.

ARCE 4125: Soil Mechanics and Foundations: Covers introduction to soil mechanics and foundations, geological characteristics of soils and particle sizes of soils, soils investigation, physical soil parameters and soil classification, soil compaction, one-dimensional flow of water through soils, stresses, strains, and elastic deformations of soils, stress path, one-dimensional consolidation settlement of fine-grained soils, shear strength of soils, a critical state model to interpret soil behavior, bearing capacity of soils and settlement of shallow foundations, pile foundations, two-dimensional flow of water through soils, stability of earth retaining structures and slope stability.

ARCE 4126: Construction Equipment and Methods: Establishes a full ability to understand and solve problems, communicate solutions, and manage their implementation. This subject helps build these skills through: a holistic view of construction technology, safe use to maximize productivity and how the principles of science are being applied; linking the material in this course to previously obtained knowledge such as statics, geotechnical engineering; and pedagogy designed to promote knowledge, and skill acquisition, such as case studies and open-ended problems.

ARCE 4127: Before Building: Site Planning in the Digital Age: It covers every topic required in site planning, including land use controls and the history behind the law. It also presents detailed coverage of the role of computer technologies in supporting site planning, including up-to-date hardware, software, and applications.

ARCE 4128: Engineering Ethics and Professional Practice: Bridging the gap between theory and practice, helps students quickly understand the importance of their conduct as a professional and how their actions can affect the health, safety, and welfare of the public and provides dozens of diverse engineering cases and a proven and structured method for analyzing them; practical application of the Engineering Code of Ethics; focus on critical moral reasoning as well as effective organizational communication; and in-depth treatment of issues such as sustainability, acceptable risk, whistle-blowing, and globalized standards for engineering.

ARCE 4130: Construction and Detailing for Interior Design: Explains the principles of sound construction for interiors, and provides the means to create successful variations on standard types of detailing. It also covers the relation of existing building shells to the construction and detailing of new elements. Practical tips are given throughout the course including comprehensive and professional annotated drawings together with explanatory photographs of techniques, materials, and tools.

ARCE 4131: Building Construction Materials: Examines the contribution that material selection makes to sustainable construction practice, considering the availability of raw materials, production, recycling and reuse, which all contribute to the life cycle assessment of structures, as well as being brought up-to-date with current usage and performance standards, each section now also contains an extra chapter on recycling covering Metals, concrete, ceramics (including bricks and masonry), polymers, fiber composites, bituminous materials, timber and glass.

ARCE 4132: Fundamentals of Building Construction: Materials and Methods: making buildings, foundations, wood, heavy timber frame construction, wood light frame construction, exterior finishes for Wood Light Frame Construction, interior finishes for wood light frame construction, brick masonry, stone and concrete masonry, masonry load-bearing wall construction, steel frame construction, light gauge steel frame construction, concrete

construction, site-cast concrete framing systems, precast concrete framing systems, roofing, glass and glazing, windows and doors, designing cladding systems, cladding with masonry and concrete, cladding with metal and glass, selecting interior finishes, interior walls and partitions, finish ceilings and floors.

ARCE 4133: Mechanics of Materials: Introduction to mechanical behavior of materials, including stress/strain at a point, principle stresses and strains, stress-strain relationships, determination of stresses and deformations in situations involving axial loading, torsional loading of circular cross sections, and flexural loading of straight members. Also covers stresses due to combined loading and buckling of columns.

ARCE 4134: Fundamentals of HVAC Control Systems: Covers principles and characteristics of HVAC controls and describes how to use, select, specify and design control systems and develops in-depth knowledge of HVAC Control Systems and improve the understanding and skills.

ARCE 4135: The Construction of Houses: Covers Foundations; External Load-bearing Walls; Ground Floors; Upper Floors; Roof Structure; Roof Coverings; Flat Roofs; Plastering; Partitions; External Rendering; Timber-Framed Housing; Non-traditional Housing; Windows/Doors/Stairs; Thermal Insulation; Cold Water Supply; Hot Water Supply; Space Heating; Drainage; and Electrical Installations

ARCE 4136: Formwork for Concrete Structures: Provides current information on designing and building formwork and temporary structures during the construction process including the latest structural design recommendations by the National Design Specification (NDS 2005), and covers recent advances in materials, money- and energy-saving strategies, safety guidelines, OSHA regulations, and dimensional tolerances. Up-to-date sample problems illustrate practical applications for calculating loads and stresses.

ARCE 4137: Introduction to Geometrics: Covers definition of surveying, geometrics, units, significant figures, field notes, theory of errors in observations, leveling theory, methods and equipment, leveling field procedures and computations, distance measurement, angels, azimuths, bearings, total station instruments, angle observations, traversing, traversing computations, coordinate geometry in surveying calculations, area, global navigation, satellite systems, adjustments by least squares, mapping surveys, mapping control surveys and geodetic reductions, state plane coordinates and other map projections, boundary surveys, surveys of public lands, construction surveys, horizontal curves, vertical curves, volumes, photogrammetric techniques and introduction to geographic information systems.

ARCE 4138: Landscape Surveying: Prepares students to easily apply the principles and methods of surveying in a variety of occupational settings through illustrations, examples, and sample problems, students will not only learn methods for measuring distances and angles and completing surveys, but will also learn to determine which method is best suited for specific situations with coverage of relevant terms, methodologies, equipment, and topography.

ARCE 4141: Matrix Structural Analysis: Analysis of trusses and frames by the direct stiffness method. Use of a typical commercial computer code is stressed as a tool for complex structures. Introduces three-dimensional structures

ARCE 4142: Building Specifications and Contracts: Provides current writing practices shaped by the well-established principles and requirements of major professional associations.

Also included are guidelines for correct terminology, product selection, organization of specifications according to recognized CSI formats, and practical techniques for document production.

ARCE 4143: Construction Estimating: Provides everything students need for a course in Estimating. It combines sound coverage of principles with step-by-step procedures to help students learn concepts more easily. It reflects the popular approach of tracing a complete project's progress with a discussion of computers in estimating, different types of estimates (e.g., square foot, project comparison, and assembly estimating), and how to determine labor productivity, and how to determine labor burden.

ARCE 4144: Design of Plumbing, Electricity and Acoustics: Cover all topics in the field of sustainable environmental control. It provides knowledge appropriate for the level of complexity needed at the schematic design stage and presents the most up-to-date information available in a concise, logical, accessible manner and arrangement and provides the skills and knowledge needed to create buildings that use electricity and water efficiently. In addition, addresses ways to reduce electricity usage through more efficient lighting systems and appliances and by incorporating automatic switches and control systems that turn off systems not in use, covers the design of well-planned effluent treatment systems that protect against potential health hazards while also becoming a valuable source of reclaimed water and fertilizer, and provides coverage of fire protection and conveyance systems, including very efficient types of elevators and escalators and designs that encourage the use of stairs or ramps.

ARCE 4145: Structural Steel Design: Introduction to Structural Steel Design, Specifications, Loads, and Methods of Design, Analysis of Tension Members, Design of Tension Members, Introduction to Axially Loaded Compression Members, Design of Axially Loaded Compression Members, Design of Axially Loaded Compression Members (Continued) and Column Base Plates, Introduction to Beams, Design of Beams for Moments, Design of Beams, Bending and Axial Force, Bolted Connections, Eccentrically Loaded Bolted Connections and Historical Notes on Rivets, Welded Connections, Building Connections, Composite Beams, Composite Columns, Cover-Plated Beams and Built-up Girders and Design of Steel Buildings.

ARCE 4146: Architectural Drafting and Design: Step-by-step instructions for the design and layout of each type of drawing associated with a complete set of architectural plans, with projects that can be completed using either CAD or manual drawing methods. The basics of residential design, commercial drafting, basic materials used for construction, common construction methods, and drawings typically associated with commercial construction are all covered.

ARCE 4147: Wood and Masonry Design: Covers every step of construction in detail, From the layout, excavation, and formwork, through finish carpentry, sheet metal and painting, with clear illustrations and step-by-step instructions and includes everything that a student need to know about framing, roofing, siding, insulation and vapor barriers, interior finishing, floor coverings, millwork and cabinets, stairs, chimneys, driveways, walks ... complete "how-to" information on everything that goes into building a wood-frame house.

ARCE 4148: Construction Planning and Scheduling: This comprehensive subject is designed for construction management, planning and scheduling. It follows a logical progression, introducing precedence diagramming early and following with sessions on activity durations, resource allocations, network schedules, and more. It includes a unique discussion of contract provisions related to scheduling and incorporates a sample project throughout.

ARCE 4149: Construction Safety and Health: Focuses on the specific needs of modern construction professionals and on the requirements set forth by OSHA and other regulators., Each session focuses on one key area of concern, and all sessions are sequenced to reflect the typical organization of college-level construction safety and health courses. This course includes LEED accreditation; effects of design on construction safety; new material on ergonomics, human factors, and behavior-based safety; and much more.

ARCE 4150: Construction Management: Introduces the discipline of construction management including estimating, cost control, analysis of construction operations and focus on the history and basic concepts of the field; preparing the bid package; issues that evolve during the construction phase; construction contracts; legal structures; time planning and control; project cash flow and funding; equipment ownership and safety.

ARCE 4151: Sustainable Construction and Design: Covers Green building assessment, The green building process, Ecological design, Sustainable sites and landscaping, Energy and atmosphere, The building hydrologic system, Closing materials loops, Indoor environmental quality, Construction operations, Building commissioning, Economic analysis of green buildings and Future directions

ARCE 4152: Introduction to Consulting Engineering: Covers the role of consultants, organizational structure, accounting, getting work and dealing with clients, preparing proposals, presentations, estimating costs, project management, liability, and professional ethics.

ARCE 5120: Construction Planning and Scheduling: Follows a logical progression, introducing precedence diagramming early and following with sessions on activity durations, resource allocations, network schedules, and more, and reflects current trends in scheduling (short-interval scheduling, computer scheduling, linear scheduling etc.) and includes sessions on arrow diagramming and PERT. With an eye on application, it includes a unique discussion of contract provisions related to scheduling and incorporates a sample project throughout.

ARC 5130: Construction Equipment and Methods: Establishes a full ability to understand and solve problems, communicate solutions, and manage their implementation. This subject helps build these skills through: a holistic view of construction technology, safe use to maximize productivity and how the principles of science are being applied; linking the material in this course to previously obtained knowledge such as statics, geotechnical engineering; and pedagogy designed to promote knowledge, and skill acquisition, such as case studies and open-ended problems.

ARC 5131: Accounting Fundamentals for Construction: Covers the basic financial skills required for being successful in the management of a construction company and its projects, including usage of financial reports, supply and managerial skills, time scheduling and control, planning and budgeting, and control of project costs and financial commitments.

ARC 5132: Construction Project Scheduling and Control: Provides an efficient, well-thought-out project scheduling crucial to achieving success and manages all aspects of the project, such as adjusting staff requirements at various stages, overseeing materials deliveries and equipment needs, organizing inspections, and estimating time needs for curing and settling—all of which requires a deep understanding on the part of the scheduler.

ARC 5133: Legal Environment for Engineers and Architects: Basic principles of the law and court systems in both the United States and globally, Basic principles of contracts,

Relationships of individuals and society focusing upon such areas as agency, partnerships, corporations, insurance and governmental regulations, Basic principles of tort law including concepts of negligence and product liability, Basic principles of property ranging from real property to intellectual property, Impact to the daily practice of a design professional involved in a construction project and The role of the design professional in litigation.

ARC 5134: Probabilistic Methods for Structural Safety Evaluation: Presents recent developments on the use of probabilistic methods to ensure safety of structures following a review of the state of the art in this field, introduces an artificial neural network design algorithm using Bayesian method and application in damage detection; a probabilistic approach for multiple cracks identification in beams; and reliability analysis of single-degree-of-freedom system using important sampling method.

ARCE 5121: Physical Performance of Buildings: Examines performance rationale and performance requirements. Outdoor and indoor climate conditions are described and calculation values are discussed, the performance concept is specified at the building level and at the building envelope level, and heat-air-moisture material properties are defined.

ARCE 5122: Method of Construction Projects Risk Assessment: Comprehensive risk analysis in construction projects. MOCRA can be described as a hybrid method. Unlike other methods, MOCRA allows its user to allocate risks in the material-financial plans. This substantially increases its utilitarian value because it gives a project manager or a direct contractor the possibility to evaluate the consequences of risk factors occurrence

ARCE 5123: Statics and Strength of Materials for Building Construction: An accessible and visually oriented introduction to structural theory, with illustrations and examples of building frameworks and components to enable students to visually connect theoretical concepts with the experiential nature of real buildings and materials.

ARCE 5124: Control of Traffic Systems in Buildings: Presents the state of the art in the analysis and control of transportation systems in buildings focusing primarily on elevator groups and covers the theory and design of passenger traffic and cargo transport systems, together with actual operational examples and topics of special current interest such as noisy, on-line and algorithmic optimization; simulation-based modeling of passengers and goods; control of cooperative agent-oriented systems; proposal for a benchmark to compare new control methods and deployment and testing of transportation systems.

12.03.02 - Building Systems

BSYS 5140: Plumbing, Electricity, Acoustics and Fire Protection: Covers all topics in the field of sustainable environmental control and provides knowledge appropriate for the level of complexity needed at the schematic design stage and presents the most up-to-date information available in a concise, logical, accessible manner and arrangement. Although sustainability deals with many issues, those concerning energy and efficiency are the most critical, making an additional goal of this book one of providing architects with the skills and knowledge needed to create buildings that use electricity and water efficiently. Guidelines and rules-of-thumb are provided to help designers make their buildings use less energy, less water, and less of everything else to achieve their primary objectives. Addresses ways to reduce electricity usage through more efficient lighting systems and appliances and by incorporating

automatic switches and control systems that turn off systems not in use, Covers the design of well-planned effluent treatment systems that protect against potential health hazards while also becoming a valuable source of reclaimed water and fertilizer and Provides coverage of fire protection and conveyance systems, including very efficient types of elevators and escalators and designs that encourage the use of stairs or ramps.

BSYS 5141: Building Enclosure Design: Defines, and categorizes the current state of the art in long-span glass facade design and construction, with a focus on structural systems, glass cladding options, and implementation strategies for innovative design. A comparative analysis of these various systems is included, along with designs and design practices for enhancing transparency; engineering issues; material, process, and fabrication considerations; installation means and methods; and project delivery strategies for implementing innovative building technology in today's construction marketplace.

BSYS 5142: Concrete Structures: Protection, Repair and Rehabilitation: Brief Overview of the Development and History of Concrete Construction, Through-life Management of Existing Structures, Previous Experience – In-service Performance of Concrete Structures and Remedial Interventions, Conservation Management - Overview of Philosophy and Process Steps, Deterioration and Damage Mechanisms, Condition Survey – Testing and Investigations, Structural Condition Assessment, Condition Evaluation and Decision-Making, Structural Assessment and Repair after a Fire, Recording and Reporting, Application Example, Proactive Durability Management – Example from Practice of the Protection and Repair of a Concrete Structure, Case Study – Reliability Assessment of a Bridge Subject to Chloride-Induced Corrosion and Associated Structural Deterioration and Future Outlook.

BSYS 5143: Alternative Energy Systems in Building Design: An overview of the major national rating systems, including LEED®, Green Globes®, the National Green Building Standard, and ENERGY STAR, An in-depth look at each rating system, including its evolution, objectives, point structure, levels of certification, benefits, and shortcomings, How the ratings systems work for different types of buildings—commercial, multi-family residential, and single-family residential construction, Illustrated case studies from different climate regions with project descriptions, cost data, and lessons learned by design teams, constructors, and owners, and An overview of local, regional, and international rating systems

BSYS 5144: Building Services Engineering: Focuses on Climate Change, Post Occupancy, Built Environment, Energy Economics, Ventilation and Air Conditioning, Heat Demand, Heating, Water Services, Electrical, Lighting, Condensation, Gas, Plant & Service Areas, Fire, Protection, Room Acoustics and Mechanical Transport

BSYS 5145: Heating Ventilation Refrigeration and Air Conditioning: Elements of heat transfer for buildings. Thermodynamic properties of moist air, human comfort and the environment, solar energy fundamentals and applications, water vapor transmission in building structures, heating and cooling load calculations.

BSYS 5147: Probabilistic Methods for Structural Safety Evaluation: Presents recent developments on the use of probabilistic methods to ensure safety of structures following a review of the state of the art in this field, introduces an artificial neural network design algorithm using Bayesian method and application in damage detection; a probabilistic approach for multiple cracks identification in beams; and reliability analysis of single-degree-of-freedom system using important sampling method.

12.03.03 - Civil Engineering:

CE 4130: Civil Engineering: An introduction to the civil engineering profession with emphasis on careers open to the civil engineering students. Topics include: scope, specialties, education, professional practice, life-long learning, contemporary issues, ethics and societal impacts related to civil engineering.

CE 4131: Civil Engineering Materials: Covers properties and behavior of typical civil engineering materials, including wood, metals, aggregates, asphalt cement concrete, portland cement concrete, and composites. Laboratory exercises demonstrate selected engineering mechanics principles, including elastic, inelastic, and time-dependent material behavior. Additional topics include testing techniques, materials standards, report writing, and presentation of experimental data.

CE 4132: Structural Analysis: Introduction to structural concepts and techniques for analyzing trusses, determinate and indeterminate beams, and frame structures. Apply concepts from statics and mechanics of materials to determine internal forces and deflections of structural members and systems, including loads and load paths.

CE 4133: Transportation Engineering: Introduction to transportation in the United States, highway types and systems, principles of route location, vehicle characteristics, highway geometrics and design standards, drainage, environmental considerations, pavement design, and economic principles and engineering criteria for highway improvements.

CE 4134: Water Resources planning and Management: Economic and environmental aspects of water use. Topics include flood damage reduction, water demand and hydrologic forecasting, water supply planning, and water resource systems operation.

CE 4135: Bituminous Materials: Applications and properties of asphalt binder, aggregates for bituminous mixtures, and analysis and design of asphalt concrete mixtures. Includes asphalt cement production, chemistry, and grading, aggregate grading and blending, mixture design and characterization; and discusses asphalt mixture production, construction, and recycling.

CE 4136: Matrix Structural Analysis: Analysis of trusses and frames by the direct stiffness method. Use of a typical commercial computer code is stressed as a tool for complex structures. Introduces three-dimensional structures

CE 4137: Structural Concrete Design: Covers analysis and design of reinforced and pre-stressed concrete structures and brings all material up to date while maintaining practical, logical, easy-to-follow approach. Covers the latest ACI 318 - 11 code rules, emphasizing the code's strength approach and strain limits with additional codes, standards, and specifications, as well as material properties and specific loads and safety provisions are also examined in detail, with explanation of all key concepts to be known before tackling design formulas, including The application of shear design to beams with variable length in actual structure, The design of deep beams employing ACI and AASHTO strut-and-tie approach, The design of stepped-type reinforced concrete stairs, not covered anywhere else, Seismic design and analysis utilizing the IBC 2012 and ASCE 7-10 code, The design of curved beams subject to flexure, shear, and torsion, Pre-stressed concrete bridge design according to AASHTO

specifications and Examples for predicting shrinkage and creep of concrete in both U.S. and SI units.

CE 4138: Structural Timber Design: Provides detailed information and in-depth guidance on the design of timber structures based on the common rules and rules for buildings and provides a step-by-step approach to the design of all of the most commonly used timber elements and connections using solid timber, glued laminated timber or wood based structural products.

CE 4140: Topological Quantum Field Theory And Four Manifolds: Emphasis on the topological aspects of fermions manifested through handling the generation of mass. This has its relevance in electroweak theory where it is observed that weak interaction gauge bosons attain mass topologically. These geometrical and topological features help to consider massive fermions for a composite state we can realize the internal symmetry of hadrons from reflection group. Also, an overview of non-commutative geometry presentation and it is observed that the manifold M 4 x Z2 has its relevance in the description of a massive fermions when the discrete space is considered as the internal space and the symmetry breaking gives rise to chiral anomaly leading to topological features.

CE 4141: GIS and Cartographic Modeling: An introduction to the concepts, conventions, and capabilities of map algebra as a general language, this book describes the analytical use of raster-based GIS. By focusing on the fundamentals of cartographic modeling techniques, illustrates concepts that can be applied to any GIS.

CE 4142: Mathematical Foundation of Geodesy: Covers Linear Equations.- The Adjustment Procedure in Tensor Form.- The Theory of Rounding Errors in the Adjustment by Elements.- A Contribution to the Mathematical Foundation of Physical Geodesy.- A Remark on Approximation of T by Series in Spherical Harmonics.- On the Geometry of Adjustment.- Remarks to the Discussion Yesterday.- Letters on Molodenskiy's Problem.- On the Spectrum of Geodetic Networks.- Mathematical Geodesy.- Foundation of a Theory of Elasticity for Geodetic Networks.- Integrated Geodesy.- On Potential Theory.- La Formule de Stokes Est-Elle Correct?.- Some Remarks About Collocation.- Apropos Some Recent Papers by Willi Freeden.- S-Transformation.- Integrated Geodesy.- A Measure for Local Redundancy.- A Convergence Problem in Collocation Theory.- Non-Linear Adjustment and Curvature.- Mechanics of Adjustment.- Angelica Returning or The Importance of a Title.- Evaluation of Isotropic Covariance Functions.- Contribution to the Geometry of the Helmert Transformation.- Letter on a Problem in Collocation Theory.

CE 4143: Geodesy: Covers the entire field of geodesy and is intended to serve as an introductory course in the fields of geodesy, geophysics, surveying engineering, and geometrics. It provides a systematic overview of fundamental theory in physical geodesy, reference systems, and space and terrestrial measurement methods, together with the respective modeling techniques.

CE 4144: Urban infrastructure systems: Introduction to: (a) the infrastructure systems that support urban socioeconomic activities, and (b) fundamental system design and analysis methods. This course Coverage of water resources, vertical, transportation, communications and energy infrastructure, Emphasis upon the purposes that these systems serve, the factors that influence their performance, the basic mechanisms that govern their design and operation, and the impacts that they have regionally and globally. Student teams complete a semester-

long design/analysis project with equal emphasis given to water resources / environmental engineering, geotechnical engineering and construction engineering and management topics.

CE 4145: Structural analysis and design: Methods of structural analysis. Trusses, arches, cables, frames; influence lines; deflections; force method; displacement method; computer applications. And Design criteria for varied structural applications, including buildings and bridges; design of elements using steel, concrete, masonry, wood, and other materials.

CE 4146: Hydro-systems engineering: A quantitative introduction to hydrologic and hydraulic systems, with a focus on integrated modeling and analysis of the water cycle and associated mass transport for water resources and environmental engineering. Coverage of unit hydrologic processes such as precipitation, evaporation, infiltration, runoff generation, open channel and pipe flow, subsurface flow and well hydraulics in the context of example watersheds and specific integrative problems such as risk-based design for flood control, provision of water, and assessment of environmental impact or potential for non-point source pollution and spatial hydrologic analysis using GIS and watershed models.

CE 4147: Water Resources planning and Management: Economic and environmental aspects of water use. Topics include flood damage reduction, water demand and hydrologic forecasting, water supply planning, and water resource systems operation.

CE 4148: Bridge design and management: Bridge design history, methods of analysis, loads: static, live, dynamic. Design: allowable stress, ultimate strength, load resistance factor, supply/demand. Steel and concrete superstructures: suspension, cable stayed, pre-stressed, arches. Management of the assets, life-cycle cost, expected useful life, inspection, maintenance, repair, reconstruction, bridge inventories, condition assessments, data acquisition and analysis, forecast, selected case histories and field visits.

CE 4149: Foundation Design: Theory and Practice: Covers principles of testing, interpretation, analysis, soil-structure interaction modeling, construction guidelines and applications to rational design, presents a wide array of numerical methods used in analyses so that learners can employ and adapt them on their own and emphasis on practical application, trains learners in actual design procedures using the latest codes and standards in use throughout the world.

CE 4150: Structural Concrete Design: Design of concrete slabs, deep beams, walls, and other plane structures; introduction to design of pre-stressed concrete structures.

CE 4151: Managing engineering and construction processes: Introduction to the principles, methods and tools necessary to manage design and construction processes, elements of planning, estimating, scheduling, bidding and contractual relationships. Valuation of project cash flows, critical path method, survey of construction procedures, cost control, and field supervision.

CE 5120: Green Building Design: An overview of practice for designing and constructing sustainable building following Leadership in Energy and Environmental Design (LEED) guidelines. Intensive two week class will include hands on practice with LEED, energy modeling, and an exploration of sustainable construction.

CE 5121: Bituminous Materials: Applications and properties of asphalt binder, aggregates for bituminous mixtures, and analysis and design of asphalt concrete mixtures. Includes asphalt

cement production, chemistry, and grading, aggregate grading and blending, and mixture design and characterization and discusses asphalt mixture production, construction, and recycling.

CE 5122: Advanced Concrete Materials: Properties and applications of Portland cement and Portland cement concrete, cement production, chemistry and hydration, concrete admixtures, and the properties of fresh and hardened concrete. Presents concrete microstructure and durability. Other topics include high-strength and high early-strength concrete, fiber-reinforced concrete and advanced cement-based materials.

CE 5123: Advanced Structural Analysis: Investigate and apply methods in structural analysis, elastic buckling of beams, beam-columns, and frames, including numerical methods for stability analysis. Course Includes analysis of cable structures, arches, beams on elastic foundations, plates, and shells.

CE 5124: Finite Element Analysis: Introduction to the use of finite element methods in structural analysis. Course covers the finite element formulation, 1- and 2-D elements, including isoparametric elements, ax-symmetric analysis, plate and shell elements, dynamics, buckling, and nonlinear analysis.

CE 5130: Prestressed Concrete Design: Theory of prestressed and post-tensioned members. It covers analysis and design of prestressed concrete beams, slabs, box girders, and bridge girders by elastic and ultimate strength methods. Precast and cast-in-place system construction techniques will be included.

CE 5131: Concrete and Masonry Building Systems: Design of reinforced concrete two-way slabs and reinforced masonry systems for buildings and includes design of bearing walls, shear walls, lintels, pilasters, slender columns, tensional beams and connections. A design project may be included during the semester.

CE 5132: Advanced Structural Timber Design: Advanced design of timber structures, including arches and traditional timber frames, advanced shear wall design, advanced connection design, including timber connectors, and advanced analysis and behavior of wood, including cumulative damage modeling.

CE 5133: Structural Dynamics: Free and forced vibration of un-damped and damped single degree of freedom systems. Multiple degree-of-freedom systems, including shear buildings, frames and basic seismic design.

CE 5134: Project Delivery Systems for Construction: Traditional and alternative project delivery systems, including Design-Bid-Build, Design-Build, Construction Management At-Risk, and Integrated Project Delivery. Covers management approaches, procurement options, basis of reimbursement, roles and responsibilities, Building Information Modeling, lean construction, and sustainability are also discussed relative to these delivery systems.

CE 5140: Bridge Design and Construction: Introduction to design and behavior of short and medium span bridges. Topics include aesthetics, preliminary design and layout, design of pre-stresses and plate girders bridges, deck design, foundation design. Project may alternate between structural steel and prestressed concrete member design.

CE 5141: Highway Design: Advanced highway design, including horizontal and vertical alignment, cross-section elements, super elevation, and other road design topics. Course Includes extensive use of highway design computer software with a complete roadway design project using software.

CE 5142: Transportation Planning: Introduction to urban transportation planning, travel characteristics, demand forecasting techniques, corridor studies, traffic impact studies, and public transit planning and operations.

CE 5143: Airport Planning and Design: Introduction to the air transportation system, airport planning studies, demands forecasting, aircraft characteristics, runway requirements, airport layout and design. Also includes environmental impacts, airport capacity and operations, terminal and ground access planning and analysis.

CE 5144: Railroad Track Engineering and Design: Railroad location and operation, track structure, curves, grades, sub-grade and drainage, ballast and sub-ballast, ties, rail, turnouts and crossings, and rail facility planning and design.

CE 5145: Stochastic Hydrology: Application of statistics to problems in surface hydrology. Topics include the flood flow and stream flow frequency analysis, goodness-of-fit tests, model selection, treatment of historical and censored data, regionalization and regression, time series analysis, Bayesian inference, sensitivity and uncertainty analysis methods.

CE 5146: Water Resources planning and Management: Economic and environmental aspects of water use. Topics include flood damage reduction, water demand and hydrologic forecasting, water supply planning, and water resource systems operation.

CE 6140: Steel Design: Additional topics in steel design including beam-columns, floor vibrations, diaphragms, buckling behavior of thin elements, torsion buckling, and beam and column bracing and includes an introduction to cold-formed steel design.

CE 6141: Public Transit: An introduction to public transit, user characteristics, management, transit modes, data collection and surveys, planning, operations, scheduling, transit finances, and future trends.

CE 6142: Stormwater Management and LID: Design techniques for stormwater collection, conveyance, infiltration, and detention storage systems are discussed, both traditional stormwater management systems and newer approaches based on the philosophy of low impact development (LID) that seek not to alter the natural ecology of a site.

CE 6143: Probabilistic Analysis and Reliability: Examines probabilistic analysis of engineering systems including first-order methods, Monte Carlo simulation, and time-to-failure analysis. Reliability analysis will include capacity/demand reliability and system reliability. Emphasis will be on civil and environmental engineering systems.

CE 6144: Mathematical Modeling of Earth Systems: Introduction to numerical techniques for mathematical modeling of various earth-system phenomena, including groundwater flow, heat transfer, and atmospheric transport. Numerical techniques covered include finite-difference, finite-element, collocation, and characteristic methods. Students write their own mathematical models. Prerequisite

CE 6145: Advanced Soil Mechanics: Provides advanced studies in the topics of soil compressibility and soil strength. Develop advanced procedures for determining stress distribution and stress changes from a fundamental basis. Students are strongly advised to take CE5820 concurrently.

CE 6146: Fundamentals of Soil Behavior: Develop an understanding of the factors determining and controlling the engineering properties of a soil. Topics include crystal structure and surface characteristics, soil mineralogy, soil formation, rock weathering, soil composition, soil water, clay-water electrolyte systems, soil structure and stability, volume change behavior, and strength and deformation behavior.

CE 6147: Engineering Design Practicum: Advanced independent study for students in the Master of Engineering program. In consultation with student's advisor, develop and execute a project demonstrating capabilities in problem solving, communications, and decision making. The practicum can be done on campus or at the site of a Michigan Tech corporate partner.

CE 6148: Advanced Structural Concrete Design: Advanced topics in behavior of reinforced-concrete structures and relationships with design, code requirements, reasoning behind theoretical and experimental studies for understanding structural behavior, and current research issues. Other topics include strut and tie, deep beams, corbel design, and yield-line analysis.

CE 6149: Soil Mechanics and Foundations: Explains basic concepts and fundamental principles of basic mechanics, physics, and mathematics from Practical Situations and Essential Points to Practical Examples,

12.03.04 - Construction Management:

CME 5140: Construction Management: Introduces the discipline of construction management including estimating, cost control, analysis of construction operations and focus on the history and basic concepts of the field; preparing the bid package; issues that evolve during the construction phase; construction contracts; legal structures; time planning and control; project cash flow and funding; equipment ownership and safety.

CME 5141: Structural Analysis: Introduction to structural concepts and techniques for analyzing trusses, determinate and indeterminate beams, and frame structures. Apply concepts from statics and mechanics of materials to determine internal forces and deflections of structural members and systems, including loads and load paths.

CME 5142: Construction Cost Estimating: Focuses on how to generate complete, accurate estimates for labor and material costs, guides learners through the entire estimating process, explaining in detail how to put together a reliable estimate that can be used for developing a schedule, managing a project, dealing with contingencies, and ultimately making a profit. Includes interpreting plans and specifications, computer estimating techniques, parameter estimating allocate profit amounts, unit price estimation, labor issues and budgeting.

CME 5143: Construction Project Administration: Explains the basics of administering a design-build project after the contract has been awarded, and breaks the process into a series of learning modules, that explain the component steps including an introduction to design-build

project administration and covers scheduling, design administration, design quality management, quality management, change orders, progress payments, and close-out.

CME 5144: Construction Materials: Covers a wide range of construction materials provides a comprehensive foundation to the subject, and includes an overview of performance characteristics and standards for many materials. Also, reviews material properties, and examines and evaluates modes of deterioration while emphasizing preventative techniques and remedial treatment.

CME 5145: Advanced Construction Accounting and Finance: Focuses on the principles of financial management, and apply them to the challenge of profitably managing construction companies. It integrates content that has traditionally been taught through separate accounting, finance, and engineering economics subjects. Students learn how to account for a construction company's financial resources; how to manage its costs, profits, and cash flows; how to evaluate different sources of funding a company's cash needs; and how to quantitatively analyze financial decisions.

CME 5146: Project Delivery Systems for Construction: Traditional and alternative project delivery systems, including Design-Bid-Build, Design-Build, Construction Management At-Risk, and Integrated Project Delivery. Covers management approaches, procurement options, basis of reimbursement, roles and responsibilities, Building Information Modeling, lean construction, and sustainability are also discussed relative to these delivery systems.

CME 6140: Project Management: Focuses on project definition, selection, planning, scheduling, implementation, performance monitoring, evaluation and control. Emphasis will be on product, service and process development and emerging concepts related to development on the internet. Some advanced concepts in resource constraint management and design matrix are included.

CME 6141: Operations Management: Application and case studies are used to address issues in operations management, quality, research and development, capacity planning, budgeting, marketing, supply chain, and technology to provide an interdisciplinary, quantitative focus on decision making and strategic planning for operations.

CME 6142: Construction Equipment and Methods: Establishes a full ability to understand and solve problems, communicate solutions, and manage their implementation. This subject helps build these skills through: a holistic view of construction technology, safe use to maximize productivity and how the principles of science are being applied; linking the material in this course to previously obtained knowledge such as statics, geotechnical engineering; and pedagogy designed to promote knowledge, and skill acquisition, such as case studies and open-ended problems.

CME 6143: Accounting Fundamentals for Construction: Covers how to organize and use a company's financial reports, what amount of cash must be made available to the contractor to complete a project, why the early payment of supplier invoices can enhance profitability, how to quantify the time value of money in financial decisions, what tax amount is owed by a company and how it impacts the bottom line, how to control project costs and what financial sources are available to a construction contractor for capital expansion

CME 6144: Construction Cost Estimating: Focuses on how to generate complete, accurate estimates for labor and material costs, guides learners through the entire estimating

process, explaining in detail how to put together a reliable estimate that can be used for developing a schedule, managing a project, dealing with contingencies, and ultimately making a profit. Includes interpreting plans and specifications, computer estimating techniques, parameter estimating allocate profit amounts, unit price estimation, labor issues and budgeting.

CME 6145: Construction Project Scheduling and Control: Covers adjusting staff requirements at various stages, overseeing materials deliveries and equipment needs, organizing inspections, and estimating time needs for curing and settling—all of which requires a deep understanding on the part of the scheduler through an up-to-date coverage detailing all the steps needed to devise a technologically advanced schedule geared toward streamlining the construction process.

CME 6146: Legal Environment for Engineers and Architects: Basic principles of the law and court systems in both the United States and globally, Basic principles of contracts, Relationships of individuals and society focusing upon such areas as agency, partnerships, corporations, insurance and governmental regulations, Basic principles of tort law including concepts of negligence and product liability, Basic principles of property ranging from real property to intellectual property, Impact to the daily practice of a design professional involved in a construction project and The role of the design professional in litigation.

CME 6147: Construction Project Administration: explains the basics of administering a design-build project after the contract has been awarded. As with Preparing for Design-Build Projects—about design-build projects during the proposal stage—by the same three broadly experienced authors, this book breaks the process into a series of learning modules that explain the component steps. It begins with an introduction to design-build project administration and goes on to cover topics such as scheduling, design administration, and design quality management.

CME 6148: Computer Applications in Construction: Focuses on utilizing information technology in construction projects and architectural back-office, including an overview of applied engineering, administrative and financial applications as well as information technology based quality management methods.

CME 6149: Project Delivery Systems for Construction: Traditional and alternative project delivery systems, including Design-Bid-Build, Design-Build, Construction Management At-Risk, and Integrated Project Delivery. Covers management approaches, procurement options, basis of reimbursement, roles and responsibilities, Building Information Modeling, lean construction, and sustainability are also discussed relative to these delivery systems.

12.03.05 - Construction Engineering:

CON 5140: Statics and Strength of Materials for Construction: An accessible and visually oriented introduction to structural theory, with illustrations and examples of building frameworks and components to enable students to visually connect theoretical concepts with the experiential nature of real buildings and materials.

CON 5141: Foundation Design: Theory and Practice: Covers principles of testing, interpretation, analysis, soil-structure interaction modeling, construction guidelines and applications to rational design, presents a wide array of numerical methods used in analyses so

that learners can employ and adapt them on their own and emphasis on practical application, trains learners in actual design procedures using the latest codes and standards in use throughout the world.

CON 5142: Masonry Structural Design: Emphasizes the strength design of masonry and includes allowable-stress provisions. Innovations such as autoclaved aerated concrete masonry (AAC) are also discussed. Real-world case studies featuring a low-rise building with reinforced concrete masonry and a four-story building with clay masonry illustrate the techniques presented in this comprehensive resource. Covers basic structural behavior and design of low-rise, bearing wall buildings, materials used in masonry construction, code basis for structural design of masonry buildings, including seismic design, introduction of MSJC treatment of structural design, strength design of reinforced and unreinforced masonry elements, allowable-stress design of reinforced and unreinforced masonry elements, comparison of design by the allowable-stress approach versus the strength approach, lateral load analysis of shear wall structure, design and detailing of floor and roof diaphragms

CON 5143: Structural Analysis with the Finite Element Method: Presents the basis of the FEM for structural analysis and a detailed description of the finite element formulation for axially loaded bars, plane elasticity problems, symmetric solids and general three dimensional solids, describes the background theory for each structural model considered, details of the finite element formulation and guidelines for the application to structural engineering problems.

CON 5144: Beam Structures: Classical and Advanced Theories: Unified approach to beam theory that includes practically all classical and advanced models for beams and which has become established and recognized globally as the most important contribution to the field in the last quarter of a century.

CON 5145: Analysis of Plates and Shells: Covers Introduction to structural analysis by the finite element method, finite elements for axially loaded rods, advanced 1D rod elements and requirements for the numerical solution, 2D solids, Linear triangular and rectangular elements, 2D solids, higher order elements, shape functions and isoparametric formulation, ax-symmetric solids, three dimensional solids, bending of slender beam, thick/slender beams, Timoshenko theory, thin plates. Kirchhoff's theory, thick/thin plates, analysis of shells using flat elements, analysis of arbitrary shape shells using degenerate solid elements, three-dimensional rods and shell stiffness, prismatic structures, miscellaneous: inclined supports, displacements, constrains, nodal condensation error estimation, pre and post-processing and Mesh generation and visualization of computer results.

CON 5146: Earthquake Resistant Buildings: Provides a general introduction to the design of buildings which must be resistant to the effect of earthquakes, preventive building structure, examines building structures and vertical components, and examines analyses the disastrous influence of vertical components.

CON 6130: Decision-Making in Complex Dynamic Systems: Introduces students to the theory and application of modeling techniques and simulations in the analysis of decision alternatives in complex engineering problems. Topics include queuing theory, system dynamics modeling, agent-based modeling, discrete event simulations, etc. Students will be required to conceptualize and implement an appropriate research/engineering problem of choice (this could be a dissertation/thesis problem).

CON 6131: Introduction to System identification: Introductory course in system identification theory, emphasis on fitting classical and modern control-theory models to collected data using least squares and ERA. Preliminary topics include sampling theory and frequency domain math.

CON 6132: Stability of Earth Structures: Investigates the stability of both natural and anthropogenic derived structures. Studies include the application of engineering geology to slope issues, slope stability analysis procedures, computational methods. Also covers the design and analysis of soil nail walls.

CON 6133: Engineering with Developing Communities: Study of applying appropriate, community-based, and sustainable engineering in developing communities. Concepts of human-centered design and sustainable development are covered. Topics are drawn from several areas of engineering, including water and wastewater treatment, construction materials, solid waste, energy, and information systems.

CON 6134: Pavement Management Systems: Principles of pavement management, including inventory, condition assessment, needs determination, and budget analysis. This course emphasis on field condition assessment techniques and presents database design to illustrate data handling techniques and introduces several software packages.

12.03.06 - Computer Sciences

CS 4130: Introduction to Computer Science: Comprehensive presentation of Hardware, Software, Processors, Operating Systems, Numerical Systems, an Example of High Level programming language and sessions of hands on programming assignments along with hands on creation and modification of Auto-executable modules.

CS 4131: Programming Languages: Principles and Practices: An overview of programming languages through general principles combined with details about many modern languages. Major languages used in this course include C, C++, Smalltalk, Java, Ada, ML, Haskell, Scheme, and Prolog; many other languages are discussed more briefly. The course also contains extensive coverage of implementation issues, the theoretical foundations of programming languages, and a large number of exercises, making it the perfect bridge to compiler courses and to the theoretical study of programming languages.

CS 4132: Data Abstraction and Problem Solving with Java: Employs the analogies of Walls (data abstraction) and Mirrors (recursion) to teach Java programming design solutions, in a way that beginning students find accessible. The course has a student-friendly pedagogical approach that carefully accounts for the strengths and weaknesses of the Java language. Students will gain a solid foundation in data abstraction, object-oriented programming, and other problem-solving techniques.

CS 4133: Operating System Concepts and Essentials: Straightforward coverage of the core concepts of operating systems, Open-source operating systems, virtual machines, and clustered computing are among the leading fields of operating systems and networking that are rapidly changing. This book covers the core concepts of operating systems without any unnecessary jargon or text. The authors put you on your way to mastering the fundamental concepts of operating systems while you also prepare for today's emerging developments.

Covers the core concepts of operating systems, Bypasses unnecessary and wordy text or jargon, encourages you to take your operating system knowledge to the next level, prepares you for today's emerging developments in the field of operating systems

CS 4134: C++ Programming Language: Introduction to C++ programming and MATLAB for use in solving problems encountered in engineering technology. C++ topics include the basics of syntax and program structure and focuses on the basic capabilities of MATLAB and its programming environment.

CS 4135: Data Structure and Algorithms in C++/ Part I: Explores the specifications, applications, and implementations of abstract data types with unmatched accessibility. Updated with new case studies and exercises throughout, this edition provides intuitive explanations that clarify abstract concepts, and approaches the study of data structures with emphasis on computer science theory and software engineering principles.

CS 4136: Data Structure and Algorithms in C++/ Part II: Focuses on topics such as modularization, data encapsulation, information hiding, object-oriented decomposition, algorithm analysis, life-cycle software verification models, and data abstraction are carefully presented to foster solid software engineering techniques. In addition to real-world exercises and case studies that define Nell Dale's teaching philosophy, this Fifth Edition provides an increased emphasis on object-oriented design and an early introduction of object-oriented concepts.

CS 4137: JAVA Programming: Hands-on introduction to developing applications with Farrell's JAVA PROGRAMMING, 7E. This complete course provides the details and real-world exercises today's readers need to master Java, one of the most widely used tool among professional programmers for building visually interesting GUI and Web-based applications. With JAVA PROGRAMMING, 7E even first-time programmers can quickly develop useful programs while learning the basic principles of structured and object-oriented programming. The text explains concepts clearly and reinforces the reader-friendly presentation with meaningful real-world exercises. Full programming examples emphasize learning in context. Updated "You Do It" sections, all-new programming exercises, and new continuing cases help students build skills critical for ongoing programming success.

CS 4138: Data Structure in JAVA: Facilitates a student's transition from simple programs in the first semester introductory programming course to more sophisticated, efficient, and effective programs in the second semester Data Structures course. Without delving too deeply into the details of Java, the author emphasizes the importance of effective organization and management of data and the importance of writing programs in a modern, object-oriented style.

CS 4140: Computer Networking: Focuses on different computer network topologies and methods as well as setting up and management with methods of access control and troubleshooting

CS 4141: Service-Oriented Architecture and Design Strategies: Realizing the Promise of SOA, SOA — Architecture Fundamentals, Getting Started with SOA, Starting with the Business, Service Context and Common Semantics, Designing Service Interfaces, Designing Service Implementations, Composing Services, Using Services to Build Enterprise Solutions, Designing and Using Integration in SOA Solutions, SOA Security and SOA Governance.

CS 4142: Systems Analysis and Design: Provides an understanding of the IS development and modification process and the evaluation choices of a system development

methodology, emphasizes effective communication with users and team members and others associated with the development and maintenance of the information system, stresses analysis and logical design of departmental-level information system.

CS 4143: TCP/IP Protocol Suite: Networking technologies have become an integral part of everyday life, which has led to a dramatic increase in the number of professions where it is important to understand these technologies. Provide comprehensive coverage of TCP/IP for students and professionals, preparing people to succeed in today's technical world. The presentation of these concepts, examples, and practice exercises to reinforce concepts.

CS 4144: Information Technology Project Management: The Nature Of Information Technology Projects, Conceptualizing And Initializing The IT Project, The Project Infrastructure, The Human Side Of Project Management, Defining And Managing Project And Product Scope, The Work Breakdown Structure And Project Estimation, The Project Schedule And Budget, Managing Project Risk, Project Communication, Tracking, And Reporting, IT Project Quality Management, Managing Organizational Change, Resistance And Conflict, Project Procurement Management And Outsourcing, Leadership And Ethics, and Project Implementation, Closure, And Evaluation.

CS 4145: Analysis and Design of Information Systems: Provides a comprehensive introduction and user-friendly survey to all aspects of business transformation and analysis, and aims to provide the complex set of tools covering all types of systems, including legacy, transactional, database, and web/e-commerce topics. Focusing on the applied aspects of analysis to create systems that meet the needs of their users, (consumers and businesses), to enhance the set of techniques and tools that the analyst/designer requires for success and to organizations to implement business transformation of operations.

CS 4146: Introduction to Artificial Intelligence: Understand intelligence and to build intelligent software and robots that come close to the performance of humans. On their way towards this goal, A.I. researchers have developed a number of quite different sub disciplines. This concise and accessible Introduction to Artificial Intelligence supports a foundation or module course on A.I., covering a broad selection of the sub disciplines within this field. The textbook presents concrete algorithms and applications in the areas of agents, logic, search, reasoning under uncertainty, machine learning, neural networks and reinforcement learning. Topics and features:

CS 4147: Visual Basic Programming: Lecturing and training on the language including how to run the environment and creating applications with full coverage of data structure, procedures, event management, looping and object oriented programming

CS 4148: Advanced Visual Basic Programming: Coverage of sophisticated tools and techniques used in the industry today include various database, ASP.NET, LINQ, WPF and Web Services topics. After studying the subject and completing the programming exercises, students should be able to create small- to medium-sized Windows and Web applications that use databases. They will also gain essential concepts in object-oriented programming, event-driven programming, and test-driven development. Each subject is presented in an understandable style that makes this book a leader in the field.

CS 4149: Data Structure in JAVA: facilitates a student's transition from simple programs in the first semester introductory programming course to more sophisticated, efficient, and effective programs in the second semester Data Structures course. Without delving too deeply

into the details of Java, the author emphasizes the importance of effective organization and management of data and the importance of writing programs in a modern, object-oriented style.

CS 4150: Software Engineering Theory and Practice: Discusses concepts, principles, design, construction, implementation, and management issues of software systems in an organized systematically into brief, reader-friendly sections, with itemization of the important points to be remembered and includes a number of Foster's original methodologies that add clarity and creativity to the software engineering experience, while making a novel contribution to the discipline.

CS 4151: Robotics: An introduction to the principles of industrial robotics, related systems, and applications, a comprehensive tool in learning the technical aspects of robotics and a coverage of power supply systems, degrees of freedom, programming methods, sensors, end effectors, implementation planning, and system maintenance

CS 5120: Compiler Design, Theory, and Optimization: Design and theory of programming language translators and the theory and implementation of optimizers. Topics include: intermediate representations, advanced code generation, control- and data-flow analysis, advanced compiler optimization, dynamic compilation, global register allocation and instruction scheduling.

CS 5121: Theory of Computation: Topics covered include Turing machines and their variants, the halting problem and decidability, computability, reducibility, NP-completeness, time and space complexity, and topics from recursive function theory.

CS 5122: Advanced Algorithms: Design and analysis of advanced algorithms. Topics include algorithms for complex data structures, probabilistic analysis, amortized analysis, approximation algorithms, and NP-completeness. Design and analysis of algorithms for string-matching and computational geometry are also covered.

CS 5123: Parallel Algorithms: Advanced topics in the design, analysis, and performance evaluation of parallel algorithms. Topics include advanced techniques for algorithm analysis, memory models, run time systems, parallel architectures, and program design, particularly emphasizing the interactions of these factors.

CS 5124: Advanced Operating Systems: Advanced concepts in operating systems. Topics include real-time and multiprocessor scheduling, I/O, modern file systems, and performance analysis. Also requires a substantial implementation project.

CS 5130: Advanced Computer Architecture: An in-depth study of various aspects of parallel processing, with an emphasis on parallel architectures. The course has an analytical focus and investigates models of various aspects of the design and analysis of parallel systems. Topics include simple single processor /multiprocessor performance models, pipelining, instruction-level parallelism and design issues.

CS 5131: Distributed Systems: Covers time and order in distributed systems; mutual exclusion, agreement, elections, and atomic transactions; Distributed File Systems, Distributed Shared Memory, Distributed System Security; and issues in programming distributed systems. Uses selected case studies.

CS 5132: Mobile Networks: Mobile network issues including routing and mobility management strategies in ad hoc networks, sensor networks, and personal area networks such as Bluetooth.

CS 5133: Systems Performance Analysis: Analysis of the performance of computer systems. Topics include: measurement techniques and tools, probability theory and statistics, experiment design and analysis, simulation, queuing models. Course includes a significant experimental component.

CS 5134: Software/Hardware Design of Multimedia Systems: A comprehensive overview of the design and implementation of the hardware and software of a platform for multimedia applications. Topics include system level design methodology, single-instruction-multiple data processor (SIMD), virtual platform implementation, development of an SIMD parallel compiler, and real-time operating systems (RTOS).

CS 5140: GPU and Multicore Programming: Introduction to Graphics Processing units (GPU) and multi-core systems, their architectural features and programming models, stream programming and compute unified driver architecture (CUDA), caching architectures, linear and non-linear programming, scientific computing on GPUs, sorting and search, stream mining, cryptography, and fixed and floating point operations.

CS 5141: Computer Graphics: Advanced Rendering and Modeling: Topics include polygonal objects, lighting models, shadows and textures, ray-tracing, photon mapping, parametric curves and surfaces, meshes, and mesh modeling.

CS 5142: Data Visualization: Introduction to scientific and information visualization. Topics include methods for visualizing three-dimensional scalar and vector fields, visual data representations, tree and graph visualization, large-scale data analysis and visualization, and interface design and interaction techniques.

CS 5143: Immersive Virtual Environments: An introduction to immersive virtual environment technologies and their applications. Topics include: wall-sized displays, head-mounted displays, 3D displays, orientation and position tracking, human perception, and recent research utilizing virtual reality systems.

CS 5144: Human-Computer Interactions and Usability Testing: Current issues in human-computer interaction (HCI), evaluation of user interface (UI) design, and usability testing of UI. Course requires documenting UI design evaluation, UI testing, and writing and presenting a HCI survey, concept or topic paper.

CS 5145: Advanced Artificial Intelligence: Course topics include current topics in artificial intelligence including agent-based systems, learning, planning, use of uncertainty in problem solving, reasoning, and belief systems.

CS 5146: Computational Intelligence - Theory and Application: This course covers the four main paradigms of Computational Intelligence, viz., fuzzy systems, artificial neural networks, evolutionary computing, and swarm intelligence, and their integration to develop hybrid systems. Applications of Computational Intelligence include classification, regression, clustering, controls, robotics, etc.

CS 6130: Information Theory: Mathematical models for channels and sources; entropy, information, data compression, channel capacity, Shannon's theorems, and rate-distortion theory.

CS 6131: Coding Theory: General discussion on coding theory with emphasis on the algebraic theory of cyclic codes using finite field arithmetic, decoding of BCH and RS codes, convolution codes and trellis decoding algorithms.

CS 6132: Digital Image Processing: Image formation, enhancement, and reconstruction, applications in medical imaging, computer vision, and pattern recognition.

CS 6133: Computational Intelligence - Theory and application: This course covers the four main paradigms of Computational Intelligence, viz., fuzzy systems, artificial neural networks, evolutionary computing, and swarm intelligence, and their integration to develop hybrid systems. Applications of Computational Intelligence include classification, regression, clustering, controls, robotics, etc.

CS 6134: Compiler Design, Theory, and Optimization: Design and theory of programming language translators and the theory and implementation of optimizers. Topics include: intermediate representations, advanced code generation, control- and data-flow analysis, advanced compiler optimization, dynamic compilation, global register allocation and instruction scheduling.

CS 6140: Theory of Computation: Topics covered include Turing machines and their variants, the halting problem and decidability, computability, reducibility, NP-completeness, time and space complexity, and topics from recursive function theory. The course starts with a brief review of the computation models from CS3311.

CS 6141: Advanced Algorithms: Design and analysis of advanced algorithms. Topics include algorithms for complex data structures, probabilistic analysis, amortized analysis, approximation algorithms, and NP-completeness. Design and analysis of algorithms for string-matching and computational geometry are also covered.

CS 6142: Parallel Algorithms: Advanced topics in the design, analysis, and performance evaluation of parallel algorithms. Topics include advanced techniques for algorithm analysis, memory models, run time systems, parallel architectures, and program design, particularly emphasizing the interactions of these factors.

CS 6143: Advanced Computer Architecture: An in-depth study of various aspects of parallel processing, with an emphasis on parallel architectures. The course has an analytical focus and investigates models of various aspects of the design and analysis of parallel systems. Topics include simple single processor/multiprocessor performance models, pipelining, instruction-level parallelism, and multiprocessor design issues.

CS 6144: Distributed Systems: Covers time and order in distributed systems; mutual exclusion, agreement, elections, and atomic transactions; Distributed File Systems, Distributed Shared Memory, Distributed System Security; and issues in programming distributed systems. Uses selected case studies.

CS 6145: Systems Performance Analysis: Analysis of the performance of computer systems. Topics include: measurement techniques and tools, probability theory and statistics,

experiment design and analysis, simulation, queuing models. Course includes a significant experimental component.

CS 6146: Software/Hardware Design of Multimedia Systems: A comprehensive overview of the design and implementation of the hardware and software of a platform for multimedia applications. Topics include system level design methodology, single-instruction-multiple data processor (SIMD), virtual platform implementation, development of an SIMD parallel compiler, and real-time operating systems (RTOS).

CS 6147: GPU and Multi-core Programming: Introduction to Graphics Processing units (GPU) and multi-core systems, their architectural features and programming models, stream programming and compute unified driver architecture (CUDA), caching architectures, linear and non-linear programming, scientific computing on GPUs, sorting and search, stream mining, cryptography, and fixed and floating point operations.

CS 6148: Data Visualization: Introduction to scientific and information visualization. Topics include methods for visualizing three-dimensional scalar and vector fields, visual data representations, tree and graph visualization, large-scale data analysis and visualization, and interface design and interaction techniques.

CS 6149: Advanced Artificial Intelligence: Course topics include current topics in artificial intelligence including agent-based systems, learning, planning, use of uncertainty in problem solving, reasoning, and belief systems.

12.03.07 - Electrical Engineering:

EE 4120: Basic Electronics: Introduction to basic electrical principles and devices including DC and AC circuits, diodes, transistors, operational amplifier Ics, power supply regulation, and elements of communication systems.

EE 4121: Circuits I: Defines resistance, voltage, current, energy, and power, followed by DC network analysis and network theorems. It includes the analysis of transients in capacitive and inductive networks. Lab exercises use electronic test equipment to analyze circuits constructed from schematics.

EE 4122: Circuits II: Defines and applies sinusoidal steady-state AC concepts such as impedance, complex power, resonance, and frequency response. It applies basic network analysis tools to AC single phase and balanced three-phase networks, bridge circuits, and filters. AC circuit principles are reinforced by coordinated lab exercises.

EE 4123: Calculus with Technology I: An introduction to single-variable calculus, which includes a computer laboratory. Topics include trigonometric, exponential, and logarithmic functions, differentiation and its uses, and basic integration and Integrates symbolic tools, graphical concepts, data and numerical calculations.

EE 4124: Calculus with Technology II: An introduction to single-variable calculus, which includes a computer laboratory. Topics include trigonometric, exponential, logarithmic functions, differentiation and its uses, and basic integration. It integrates symbolic tools, data and numeric,

and graphical concepts, going at a slower pace and incorporating cooperative learning study skills.

EE 4125: Electronic Devices & Circuits: Introduction to solid-state electronic devices and their application; Studies diodes, transistors and operational amplifier ICs; Transistor biasing, temperature stabilization and gain calculations of single and multistage amplifiers. Studies power amplifiers, frequency response, heat sinking and power supply design.

EE 4126: Digital Electronics and Microprocessor Fundamentals: A study of the fundamental components used in digital logic circuits and microcomputer architecture and programming. Topics include: number systems and codes, Boolean algebra, combinational logic circuits, flip-flops, arithmetic circuits, counters and registers, decoders, multiplexers, memory organization, microcomputer addressing modes, stacks and subroutines.

EE 4127: Communication Systems: Basic course in communication systems. Topics include noise designation and calculation, bandwidth, frequency domain analysis, oscillators, AM/FM analysis, AM/FM transmission and reception, super-heterodyne principle, and SSB.

EE 4128: Programmable Logic Devices: Emphasizes the concept of design, simulation and implementation of large scale digital systems which incorporate digital devices at all complexity levels.

EE 4130: Electrical Machinery: Fundamental steady-state analysis of DC, AC poly-phase and AC single-phase electrical machines as well as transformers.

EE 4131: Communication Systems: Basic course in communication systems. Topics include noise designation and calculation, bandwidth, frequency domain analysis, oscillators, AM/FM analysis, AM/FM transmission and reception, super-heterodyne principle, and SSB.

EE 4132: Introduction to Programmable Controllers: The design of discreet sequential controls using programmable logic controllers (PLCs). Relay logic is used to introduce ladder logic and ladder logic is used to program the PLC; introduces a structured approach to sequential control design. Data acquisition is introduced using Bridgeview software.

EE 4133: Power Electronics Fundamentals: Fundamentals of electronic power conversion circuits and devices; Analyzes basic switching circuits and power converter topologies including dc/dc converters, ac/dc rectifiers, and dc/ac inverters; Discuses the selection criteria for reactive elements and models for solid-state switching devices.

EE 4134: Introduction to Optical Fiber Communication Systems: Focuses on the basic principles of optical fiber communications, including wave propagation, optical fiber, optical transmitters and receivers, signal processing, analysis of system impairments, and optical networks.

EE 4135: Digital Design Fundamentals: Emphasizes the language concepts of digital systems design using VHDL with emphasis on good design practices and writing verification test-benches. Students will gain valuable hands-on experience writing efficient hardware design code and performing simulations using Model Sims.

EE 4136: Physics and Technology of Semiconductor Devices: Provides a comprehensive treatment of semiconductor device physics and technology, with emphasis on

modern planar silicon devices. Physical principles are explained by the use of simple physical models and illustrated by experimental measurements.

EE 4137: C++ and Mat-lab Programming: Introduction to C++ programming and MATLAB for use in solving problems encountered in engineering technology. C++ topics include the basics of syntax and program structure; Focuses on the basic capabilities of MATLAB and its programming environment.

EE 4138: Data Communications: Introduction to the fundamentals of basic data communication methods. Topics include data transmission, signal encoding techniques, digital data communication techniques, transmission media, and frequency domain analysis.

EE 4140: Instrumentation: An investigation of transducers and where they are used. Topics include signal conditioning, sensitivity, linearity, hysteresis, process measurements, and position, motion and force measurements. Exposure to graphical data acquisition tools is incorporated.

EE 4141: Computer Architecture and Design: Computer system components, instruction set design, hardwired control units, arithmetic algorithms/circuits, floating-point operations, introduction to memory and I/O interfaces.

EE 4142: Programmable Logic Devices: Emphasizes the concept of design, simulation and implementation of large scale digital systems which incorporate digital devices at all complexity levels.

EE 4143: Microcomputer Interfacing: The design of systems, hardware, and software needed to perform serial and parallel data transmission between microcomputers; Data collection using analog to digital converters and analog and digital control outputs.

EE 4144: Digital Signal Processing Applications: Provides students with knowledge in architecture, instruction set, and hardware and software development tools associated with a fixed point general purpose DSP; Includes applications of DSP in control of electric drives and power electronic devices.

EE 4145: Real-Time Robotics Systems: Covers the components of a robot system, safety, concepts of a work-cell system, geometry, path control, automation sensors, programming techniques, hardware, and software.

EE 4146: VLSI Circuits Design: VLSI design methodology; specification of VLSI circuits at various levels of abstraction; design, layout, and computer simulation of circuits; high-level synthesis; design projects.

EE 4147: Industrial Robotic Vision Systems and Advanced Programming: Procedures for setting up, teaching, testing, and modifying robot vision systems widely used in industrial automation. Introduces advanced Teach Pendant Programming to develop complex scenarios for integrating robots into industrial cells.

EE 4148: Advanced Circuits and Controls: This course considers the modeling, design and implementation of basic and advanced process control strategies. Process modeling and dynamics will be considered using La Place transform analysis. Control techniques addressed will include feedback, cascade, feed forward, multivariable and model based methods.

EE 4149: In-Vehicle Communication Networks: Focuses on in-vehicle system domains and their requirements, and in-vehicle communication bus Controller Area Networks (CAN) and their related physical layers standards. It also covers LIN, Flex Ray, and MOST. In-vehicle network examples, components, and tools are presented.

EE 4150: Wireless Communications: Topics include television systems, wave propagation, antennas, digital communications, wireless communications systems and standards, wireless communications channels, multiple access schemes, modern wireless technologies, wireless channel impairments and techniques to minimize them.

EE 4151: Electrical Project Development and Troubleshooting: Covers soldering, component layout, printed circuit board artwork, troubleshooting, electrical and environmental factors in design as well as an overview of the practical methods used by industry to process projects. The student designs and fabricates a circuit board and assembles a project.

EE 5120: Test Engineering Fundamentals: Fundamental concepts of testing electrical or mechatronics devices are presented. Topics include design for testability, test economics and product quality, fault models, functional and statistical techniques, IC parametric tests, boundary scans, built-in self tests, and board level design for testability.

EE 5121: Electronic Manufacturing: Emphasizes fundamentals of signal transmission theory, digital circuit design, the role of packaging in circuit performance, and PCB manufacturing.

EE 5122: Quality Control: Fundamentals of statistical quality control are studied. Areas of study include process improvement, reduction of variation, root cause analysis, measures and costs of quality, systems thinking, and analysis and use of non-numeric test results such as modeling using ordinal variables.

EE 5123: EMC Test Engineering Fundamentals: Introduction to concepts and methodologies used in Electromagnetic Compatibility conformance testing. Course will explore common design flaws that result in EMC issues as well as industry standard test methods used to uncover those flaws; intended as preparation for NARTE EMC Technician and Engineer exam.

EE 5124: Digital Hardware Testing: The course emphasizes fundamentals of digital hardware design for testability, faults in digital circuits, fault simulation and test generation, memory testing, testing of sequential circuits, microprocessor testing, digital circuit design, the role of packaging in circuit performance and PCB manufacturing.

EE 5130: Optical System Design and Testing: The fundamental concepts of optical system design and testing are presented at the moderate level. Simulation tools for modeling a broad range of optical components are designed to enhance the learning process. Laboratory experiments are intended to provide hands-on experience.

EE 5131: Advanced Methods in Power Systems: Advanced analysis and simulation methods for load flow, symmetrical components, short circuit studies, optimal system operation, stability, and transient analysis. Application of commonly used software reinforces concepts and provides practical insights.

EE 5132: Transient Analysis Methods: A study of transient behaviors and their analysis and prediction; Addresses analytical methods and their numerical implementation, switching and lightning surges, short circuits, and non-linear effects and Includes computer simulations.

EE 5133: Advanced Electric Machinery and Drives: Advanced electro-mechanics of rotating and linear machines. Topics include dynamic analysis of machines, reference frame transformations, reduced order models, models of mechanical loads, power electric drives for motors, and digital simulation of machines and electric drive systems. Applications discussed will include renewable energy and electric propulsion systems.

EE 5134: Power System Protection: Real-time monitoring and protection of modern power systems; Secure and reliable operation of radial and grid systems. Protection of transmission lines, buses, generators, motors, transformers, and other equipment against disturbances.

EE 5140: Power System Operations: Study of advanced engineering and economic algorithms and analysis techniques for the planning, operation, and control of the electric power system from generation through transmission to distribution.

EE 5141: Computer Modeling of Power Systems: Topics include modeling and computer methods applied to electrical power systems, matrix formulations, network topology and sparse matrix data structures, loadflow, short- circuit and stability formulations, constrained optimization methods for loadflow and state estimation, and time-domain simulation methods for transient analysis.

EE 5142: Distribution Engineering: Modeling and analysis of electrical distribution systems; load characteristics, load modeling, unbalanced three-phase overhead and underground line models, and distribution transformers. Analysis of primary system design, applications for capacitors, voltage drop, power loss, distribution system protection, and introduction to advanced distribution automation.

EE 5143: Wind Power: Wind turbines are the fastest growing segment of the generator mix being added to power systems today. There is a growing need to understand the many issues caused by these additions. This course covers the theoretical background, regulations, integration experience, and modeling.

EE 5144: Advanced Propulsion for Hybrid Electric Drive Vehicles: Hybrid electric vehicles (HEV) will be studied and simulated using advanced power train component analysis and modeling. An in-depth analysis and study of power flows, losses, and energy usage are examined for isolated power train components and HEV configurations. Simulation tools will be developed and applied to specify power train and vehicle components and to develop control and calibration for a constrained optimization to vehicle technical specifications.

EE 5145: Engineering Electromagnetic: A mathematically rigorous study of dynamic electromagnetic fields, beginning with Maxwell's equations. Topics include scalar and vector potentials, waves, and radiation.

EE 5146: Solar Photovoltaic Science and Engineering: Solar photovoltaic materials, the device physics of photovoltaic cells and practical applications of solar electric systems engineering.

EE 6130: Test Engineering Fundamentals: Fundamental concepts of testing electrical or mechatronics devices are presented. Topics include design for testability, test economics and product quality, fault models, functional and statistical techniques, IC parametric tests, boundary scans, built-in self tests, and board level design for testability.

EE 6131: Electronic Manufacturing: Emphasizes fundamentals of signal transmission theory, digital circuit design, the role of packaging in circuit performance, and PCB manufacturing.

EE 6132: EMC Test Engineering Fundamentals: Introduction to concepts and methodologies used in Electromagnetic Compatibility conformance testing. Course will explore common design flaws that result in EMC issues as well as industry standard test methods used to uncover those flaws; Intended as preparation for NARTE EMC Technician and Engineer exam.

EE 6133: Digital Hardware Testing: The course emphasizes fundamentals of digital hardware design for testability, faults in digital circuits, fault simulation and test generation, memory testing, testing of sequential circuits, microprocessor testing, digital circuit design, the role of packaging in circuit performance and PCB manufacturing.

EE 6134: Optical System Design and Testing: The fundamental concepts of optical system design and testing are presented at the moderate level. Simulation tools for modeling a broad range of optical components are designed to enhance the learning process. Laboratory experiments are intended to provide hands-on experience.

EE 6140: Statistical Processing Of Radar, Sonar, And Optical Signals: Concerned with problems in statistical processing of Radar, Sonar and optical signals including model order selection, parameter estimation, power spectral density estimation, signal detection and classification. It is proved that the exponentially embedded-families (EEF), which is a recently proposed model order selection criterion, is consistent. It is also found in computer simulations that the EEF works well in difficult situations.

EE 6141: Optical Fiber Communications: Presents the fundamental principles for understanding and applying optical fiber technology to sophisticated modern telecommunication systems as optical-fiber-based telecommunication networks have become a major information-transmission-system, with high capacity links encircling the globe in both terrestrial and undersea installations. Numerous passive and active optical devices within these links perform complex transmission and networking functions in the optical domain, such as signal amplification, restoration, routing, and switching. Along with the need to understand the functions of these devices comes the necessity to measure both component and network performance, and to model and stimulate the complex behavior of reliable high-capacity networks.

EE 6142: Low-Power High-Resolution Analog to Digital Converters: Focus on: i) improving the power efficiency for the high-speed, and low spurious spectral A/D conversion performance by exploring the potential of low-voltage analog design and calibration techniques, respectively, and ii) development of circuit techniques and algorithms to enhance testing and debugging potential to detect errors dynamically, to isolate and confine faults, and to recover errors continuously. The feasibility of the described methods has been verified by measurements from the silicon prototypes fabricated in standard 180nm, 90nm and 65nm CMOS technology.

EE 6143: Digital Filters: Basics and Design: Gives a substantial insight into the characteristics and the design of digital filters. It briefly introduces to the theory of continuous-time systems and the design methods for analog filters. Time-discrete systems, the basic structures of digital filters, sampling theorem, and the design of IIR filters are widely discussed. The author devotes important parts to the design of non-recursive filters and the effects of finite register length.

EE 6144: Electricity from Renewable Resources: Examines the technical potential for electric power generation with alternative sources such as wind, solar-photovoltaic, geothermal, solar-thermal, hydroelectric, and other renewable sources. The book focuses on those renewable sources that show the most promise for initial commercial deployment within 10 years and will lead to a substantial impact on the U.S. energy system.

EE 6145: Electromagnets: Covers Electrostatic Field in Free Space, Dielectrics, Capacitance, and Electric Energy, Steady Electric Currents, Magneto static Field in Free Space, Magneto static Field in Material Media, Slowly Time-Varying Electromagnetic Field, Inductance and Magnetic Energy, Rapidly Time-Varying Electromagnetic Field, Uniform Plane Electromagnetic Waves, Reflection and Transmission of Plane Waves, Field Analysis of Transmission Lines, Circuit Analysis of Transmission Lines, Waveguides and Cavity Resonators and Antennas and Wireless Communication Systems.

EE 6146: Electro-Mechanical Modeling of Charged Particulate Systems: Fundamental understanding on the collective behavior of particulate systems under combined electro-mechanical loading environments is sought in several interdisciplinary applications. A few examples are, in the design of electrostatic granular valves, piezoelectric powder compacts/sensors, electromechanical separators for minerals and ores, powder injectors, and microbial particulate fuel cells. The developments in Micro/Nano technologies are pushing the limits of miniature particulate fabrications by designing particle interfaces with enhanced functionalities.

EE 6147: Operational Amplifiers: Presents a systematic circuit design of operational amplifiers, Containing state-of-the-art material as well as the essentials, covers both the circuit designer and the system designer. It is shown that the topology of all operational amplifiers can be divided into nine main overall configurations. These configurations range from one gain stage up to four or more stages. Many famous designs are evaluated in depth and includes systematic design of μV-offset operational amplifiers and precision instrumentation amplifiers by applying chopping, auto-zeroing, and dynamic element-matching techniques. Also, techniques for frequency compensation of amplifiers with high capacitive loads have been added.

EE 6148: Introduction to Subsurface Imaging: Describing and evaluating the basic principles and methods of subsurface sensing and imaging, Introduction to Subsurface Imaging is a clear and comprehensive treatment that links theory to a wide range of real-world applications in medicine, biology, security and geophysical/environmental exploration. It integrates the different sensing techniques (acoustic, electric, electromagnetic, optical, x-ray or particle beams) by unifying the underlying physical and mathematical similarities, and computational and algorithmic methods. Time-domain, spectral and multi-sensor methods are also covered, whilst all the necessary mathematical, statistical and linear systems tools are given in useful appendices to make the book self-contained. Featuring a logical blend of theory and applications, a wealth of color illustrations, homework problems and numerous case studies, this is suitable for use as both a course text and as a professional reference.

EE 6149: Computer Architecture: Focuses on this dramatic shift, exploring the ways in which software and technology in the cloud are accessed by cell phones, tablets, laptops, and other mobile computing devices. Each chapter includes two real-world examples, one mobile and one datacenter, to illustrate this revolutionary change.

12.03.08 - Mechanical Engineering:

ME 4120: Mechanics of Materials: Introduction to mechanical behavior of materials, including stress/strain at a point, principle stresses and strains, stress-strain relationships, determination of stresses and deformations in situations involving axial loading, torsional loading of circular cross sections, and flexural loading of straight members. Also covers stresses due to combined loading and buckling of columns.

ME 4121: Thermodynamics: Introduces fundamental concepts of heat and power. It presents property relationships incompressible substances, simple pure substances, and ideal gases and applies the first and second laws of thermodynamics to the analyses of processes for open and closed systems. Also covers thermodynamic cycles.

ME 4122: Integrated Design and Manufacturing: Focuses on practical aspects of design and manufacturing. Covers fundamentals of manufacturing processes and includes weekly lab providing hands-on experiences with manufacturing issues that influence component design and incorporates computer-aided manufacturing tools.

ME 4123: Dynamics: First course in the principles of dynamics, covering the motion of a particle, the kinematics and kinetics of plane motion of rigid bodies, the principles of work and energy, impulse and momentum. Uses vector methods.

ME 4124: Fluid Mechanics: Presentation/development of the fundamentals of fluid dynamics, building on students' background in mechanics and thermodynamics; Makes applications to fluid statics, control-volume analyses, incompressible flows with friction (viscosity) and compressible flows without friction and covers non-dimensional representation of experimental results, power requirements for pumps and turbines, and energy losses in pipes.

ME 4125: Heat Transfer: Covers fundamental principles of steady-state and transient heat transfer, including conduction, convection, and radiation. Also covers applications to heat exchangers and extended surfaces.

ME 4126: Product Realization: Students apply mechanical synthesis, analysis, and manufacturing processes to the design of products, using case studies of existing products to develop the relationships between design, manufacturing, and product performance. They apply synthesis methods to the design of a new product.

ME 4127: Engineering Design Processes: This course introduces methods for concurrent design, manufacturing, and assembly that will be utilized later in their Senior Capstone Design or Enterprise project experience. Course topics will include thinking styles, teamwork, creative problem solving, brainstorming, Pugh method, technical report preparation, economic decision making, quality, analytical and experimental design optimization, DFA, DFM, GD&T, codes and fasteners, robust engineering, engineering ethics, patents and IP, and innovation in the

workplace. A one semester 'paper only' design project is utilized to enhance the learning outcomes.

ME 4128: Statics: Force systems in two and three dimensions. It includes composition and resolution of forces and force systems, principles of equilibrium applied to various bodies, simple structures, friction, and moments of inertia. Vector algebra used where appropriate. Prerequisite of MA2160 with a grade of C or better is required.

ME 4130: Intermediate Mechanics of Materials: Basic concepts of three-dimensional stress and strain; inelastic behavior of axial members, circular shafts and symmetric beams; deflections of indeterminate beams. Unsymmetrical bending, shear flow and shear center for open sections. Energy methods for structures made up of one-dimensional elements and introduction to theories of failures for anisotropic materials.

ME 4131: Fundamentals of Experimental Stress Analysis: Transmits basic understanding of purposes and uses of experimental stress analysis and makes students familiar with methods used in the field to give experience in either design or analysis of strain-gauged transducer.

ME 4132: Failure of Materials in Mechanics: Identifies the modes of mechanical failure that are essential to prediction and prevention of mechanical failure. It discusses theories of failure in detail and treats the topic of fatigue failure extensively and brittle fracture, impact and buckling failures at some length.

ME 4133: Engineering Biomechanics: Engineering mechanics applied to the human body in health and disease or injury, which includes mechanics of human biological materials and engineering design in mayo-skeletal system. Also studies on mechanics of posture (occupational biomechanics) and locomotion (sports biomechanics) using mathematical models of the human body.

ME 4134: Principles of Energy Conversion: Introduces basic background, terminology, and fundamentals of energy conversion. It discusses current and emerging technologies for production of thermal, mechanical, and electrical energy. Topics include fossil and nuclear fuels, thermodynamic power cycles, solar energy, wind energy, and energy storage.

ME 4135: Computational Fluids Engineering: Introduces computational methods used to solve fluid mechanics, and thermal transfer problems. It discusses theoretical and practical aspects. Modern computer-based tools are used to reinforce principles and introduce advanced topics in fluid mechanics, and thermal transport.

ME 4136: Internal Combustion Engines: Teaches the operation and design of various types of internal combustion engines through the application of applied thermodynamics, cycle analysis, and combustion, mixtures of gases, fluid dynamics, and heat transfer.

ME 4137: Compressible Flow/Gas Dynamics: Fundamentals of one-dimensional gas dynamics, including flow in nozzles and diffusers, normal shocks, frictional flows, and flows with heat transfer or energy release; introduction to oblique shocks.

ME 4138: Mechanical Vibrations: Dynamic behavior of single degree-of-freedom systems; Free and forced vibration with an emphasis on harmonic motion; Vibration considerations in design; vibration isolation, balancing, and transmissibility; Free and forced vibration of multiple

degree-of-freedom systems. Laplace transforms solutions for periodic and transient inputs and introduction to system modeling.

ME 4140: Quality Engineering: Introduction to the concepts and methods of quality and productivity improvement. Topics include principles of Shewhart, Deming, Taguchi; meaning of quality; control charts for variables, individuals, and attributes; process capability analysis; variation of assemblies; and computer-based workshops.

ME 4141: Heating Ventilation Refrigeration and Air Conditioning: Elements of heat transfer for buildings. Thermodynamic properties of moist air, human comfort and the environment, solar energy fundamentals and applications, water vapor transmission in building structures, heating and cooling load calculations.

ME 4142: Fuel Cell Technology: In this course, after fuel cell technology basics and operating principles, fuel cell performance will be briefly described from energy and thermodynamic viewpoints. Major types of fuel cells will be discussed: Polymer Electrolyte Membrane Fuel Cell (PEMFC), Direct Methanol Fuel Cells (DMFC), Alkaline Fuel Cells (AFC), Phosphoric Acid Fuel Cell (PAFC), Molten Carbonate Fuel Cell (MCFC) and Solid Oxide Fuel Cell (SOFC). The balance of the fuel cell power plant, thermal system design and analysis will be discussed that affect the power generation. Finally, the components needed, issues related, and pertinent analysis will be covered to delivering electric power generated from the fuel cell.

ME 4143: Propulsion Systems for Hybrid Electric Vehicles: Hybrid electric vehicle analysis will be developed and applied to examine the operation, integration, and design of powertrain components. Model based simulation and design is applied to determine vehicle performance measures in comparison to vehicle technical specifications. Power flows, losses, energy usage, and drive quality are examined over drive-cycles via application of these tools.

ME 4144: Computer-Aided Design Methods: Students apply fundamental and advanced solid modeling techniques to construct solid models of mechanical systems, simulate the motion of the system, and document the design. Students use shared data to function in a concurrent design environment and identify major functional features of commercial CAD software.

ME 4145: Mechanism Synthesis/Dynamic Modeling: Students apply kinematic synthesis techniques in design and analysis of mechanical systems. They develop synthesis software to link to dynamic analysis packages such as ADAMS, I-DEAS, etc. They investigate influences of process variation on system output and learn methods to minimize the variation influences.

ME 4146: Introduction to the Finite Element Method: Introduces the use of the finite element method in stress analysis and heat transfer. Emphasizes the modeling assumptions associated with different elements and uses the computer to solve many different types of stress analysis problems, including thermal stress analysis and introductory nonlinear analysis.

ME 4147: Vehicle Dynamics: This course will develop the models and techniques needed to predict the performance of a road vehicle during drive off, braking, ride, and steering maneuvers. Topics to be covered include: acceleration and braking performance, drive train performance including an introduction to hybrid electric power train architecture, vehicle handling, suspension modeling, tire models, and steering control. Mat-lab will be used as a computational tool for implementation of the models.

ME 4148: Advanced Machining Processes: Covers mechanics of 2-D and 3-D cutting and their extension to commonly used conventional processes such as turning, boring, milling, and drilling. Topics include force modeling, surface generation, heat transfer, tool life and dynamics.

ME 4149: Metal Forming Processes: Course presents theory and practice involved in manufacturing and measuring of precision components. Topics include precision machining processes, precision machine/mechanism design, and dimensional metrology. Also discusses current manufacturing challenges in the bearings, optics, and microelectronics industries.

ME 4150: Precision Manufacturing and Metrology: Presents theory and practice involved in the manufacturing and measuring of precision components. Topics include precision machining processes, precision machine/mechanism design, and dimensional metrology And addresses current manufacturing challenges in the bearings, optics, and microelectronics industries.

ME 4151: Production Planning: Provides current issues, such as just-in-time production and reengineering, while covering fundamental production planning topics as scheduling, job design, and inventory; and forecasting. Provides the fundamental essence of the firm--how its services and products are created and how they are delivered to customers.

ME 5120: Continuum Mechanics/Elasticity: Covers development of Cartesian tensors and indicial notation applied to vector analysis; analysis of stress, principal stresses, invariants, strain tensors, material derivatives, and continuity equations; basic conservation laws and constitutive relationships; the theory of elasticity, including 2-D problems in plane stress/strain, stress functions, and 3-D problems with polar symmetry.

ME 5121: Nanoscale Science and Technology: The course covers fundamentals of Nanoscience (synthesis, properties, characterization) and recent technological advances in renewable energy, biotechnology, and Nano-devices. This course is appropriate for students with backgrounds in mechanical engineering, materials science, chemistry, chemical engineering, civil engineering, and physics.

ME 5122: Advanced Mechanics of Metals: A critical study of the basic concepts of stress, strain, and constitutive laws of solids, the physical significance of principle stresses, stress deviator and octahedral stress. It Covers failure theories; two-dimensional elasticity theory; mechanics of sub-micron structures; torsion of prismatic bars, thick pressure vessels; special topics in beam theory; elements of elastic stability.

ME 5123: Experimental Stress Analysis: Review of elastic stress-strain relationships. Covers theory and use of resistive strain gages, strain gage circuits, rosette analysis, and static and dynamic strain measurement; discusses other current strain measuring techniques; introduces photo elasticity, Moiré, and other optical techniques.

ME 5124: Finite Element and Variation Methods in Engineering: Presents fundamental concepts of variation methods including Rayleigh-Ritz technique. It introduces foundations of finite element modeling through direct method, variation method, and weighted residual method. Reviews elements commonly used in static structural analysis and heat transfer problems. Advanced topics such as nonlinearity and time-dependent problems may also be discussed.

ME 5125: Principles of Energy Conversion: Introduces background, terminology, and fundamentals of energy conversion and storage; Discusses current and emerging technologies for production of thermal, mechanical, and electrical energy; In-depth analysis of major thermodynamic power cycles. Topics include fossil and nuclear fuels, thermodynamic power cycles, solar energy, wind energy, and energy storage.

ME 5126: Precision Manufacturing and Metrology: Presents theory and practice involved in the manufacturing and measuring of precision components. Topics include precision machining processes, precision machine/mechanism design, and dimensional metrology; Addresses current manufacturing challenges in the bearings, optics, and microelectronics industries.

ME 5127: Intermediate Dynamics: Intermediate study of several topics in engineering dynamics, including three-dimensional kinematics and kinetics, generalized coordinates, Lagrange's equation, and Hamilton's principle and uses computer-aided dynamic simulation tools for analyzing dynamic systems.

ME 5130: Mechanics of Composite Materials: Introduces engineering properties and advantages of fibrous composites, the governing equations of mechanics of anisotropic, laminated materials. Develops micromechanics methods for predicting the elastic properties of the composite and classical lamination theory, including hydro-thermal effects, and applies them to stress and failure analysis of composite structures.

ME 5131: Advanced Thermodynamics: A study of the principles of thermodynamics, including fundamental concepts and introduction of the analytical treatments of the first, second and combined first and second laws of thermodynamics. Topics include irreversibility, availability, thermodynamic relations, mixtures, chemical reactions, and chemical equilibrium.

ME 5132: Advanced Fluid Mechanics: Develops control volume forms of balance laws governing fluid motion and applies to problems involving rockets, pumps, sprinklers, etc. Derives and studies differential forms of governing equations for incompressible viscous flows. Some analytical solutions are obtained and students are exposed to rationale behind computational solution in conjunction with CFD software demonstration. Also covers qualitative aspects of lift and drag, loss of stability of laminar flows, turbulence, and vortex shedding.

ME 5133: Computational Fluids Engineering: Introduces computational methods used to solve fluid mechanics and thermal transport problems. It discusses theoretical and practical aspects. Modern computer-based tools are used to reinforce principles and introduce advanced topics in fluid mechanics and thermal transport.

ME 5134: Fuel Cell Technology: Fuel cell technology basics, operating principles and performance will be discussed from energy and thermodynamic viewpoints. Major types will be described and emphasis will be on construction features, performance behavior and analysis. The balance of fuel cell power plant and thermal system design and analysis that affect power generation; as well as hydrogen infrastructure and issues related to delivering electrical power generated from the fuel cell will be covered.

ME 5135: Phase-Change & Two-Phase Flows: Considers two-phase flow patterns for air-water, condensing, and boiling flows in the context of interface conditions (surface tension, etc.) and interfacial instabilities that lead to interfacial waves, droplet formation, etc. The course emphasizes development of model equations. Relevant experimental data leading to pressure

drop correlations, interfacial shear models, etc., are discussed. The model equations and empirical correlations are used to estimate solutions of problems.

ME 5136: Design for Reliability: Emphasizes the importance of reliability in design, covering basic concepts of series, parallel, standby and mixed systems; Uses conditional probability and multi-mode functions as methods for problem solution and reliability testing.

ME 5137: Analytical Vibroacoustics: First in a series of two courses on Vibroacoustics to provide a unified approach to study noise and vibration and emphasizes interaction between sound waves and structures. Presents advanced vibration concepts with computational tools.

ME 5140: Vehicle Dynamics: This course will introduce the models and techniques needed to predict the performance of a road vehicle during drive off, braking, ride, and steering maneuvers. Topics to be covered include: acceleration and braking performance, drive train performance including an introduction to hybrid electric power train architecture, vehicle handling, suspension modeling, tire models, and steering control. Mat-lab will be used as a computational tool for implementation of the models.

ME 5141: Micro manufacturing Processes: Introduces the processes and equipment for fabricating Microsystems and the methods for measuring component size and system performance. Fabrication processes include micro scale milling, drilling, diamond machining, and lithography. Measurement methods include interferometer and scanning electron microscopy.

ME 5142: Data Based Modeling & Control: System modeling and analysis from observed data for computer-aided design and manufacturing, providing differential equation models. Computer routines for modeling, forecasting with accuracy assessment and minimum mean-squared error control; Underlying system analysis, including stability and feedback interpretation, periodic and exponential trends and uses illustrative applications to real-life data, including team projects.

ME 5143: Micro and Nano Fabrication for Energy Applications: The course will focus on the working principles of energy devices; micro and Nanoscale energy science and the relevant fabrication and characterization technologies. The class will also discuss research methodology and the current trends in this research field.

ME 5144: Experimental Design in Engineering: Review of basic statistical concepts; Models for testing significance of one or many factors; Reducing experimental effort by incomplete blocks, and Latin squares. Factorial and fractional factorial designs; Response surface analysis for optimal response.

ME 5145: Dynamic Measurement/Signal Analysis: Assessment of measurement system requirements: transducers, conditioners, and displays of dynamic measure-ands. Time-, frequency-, probabilistic-, and correlative-domain approaches to dynamic signal analysis: sampled data, discrete Fourier transforms, digital filtering, estimation errors, system identification, calibration, recording and introduction to wavelet analysis. All concepts reinforced in laboratory and simulation exercises.

ME 5146: Advanced Space Mechanics: This course presents the vector-based solution of the two-body problem and the solution for Kepler's equations. The course will also cover basic

orbit determination techniques, impulsive orbit transfer maneuvers, interplanetary trajectories, ground tracks, and rendezvous problems

ME 5147: Distributed Embedded Control Systems: This course will develop an understanding for the design and application of embedded control systems. Topics to be covered include: embedded system architecture, model-based embedded system design, real-time control, communication protocols, signal processing, and human machine interface. Embedded applications in advanced hybrid electric vehicles will also be introduced.

ME 5148: Engineering Fracture Mechanics: Development of the stress and deformation fields present near the tips of cracks. It uses elasticity solutions, plasticity corrections, and numerical methods in modeling these fields. Introduces fracture criteria and explains the various parameters used to develop these criteria.

ME 6130: Advanced Heat Transfer: Advanced topics on conduction, convection, radiation, and heat exchangers are covered. Emphasis is on problem formulation, exact solutions, some coverage of empirical results, and computational techniques.

ME 6131: Linear Systems Theory and Design: Overview of linear algebra, modern control; state-based design of linear systems, observe-ability, controllability, pole placement, observer design, stability theory of linear time-varying systems, Lyapunov stability, optimal control, linear quadratic regulator, Kalman filter,

ME 6132: Dynamic Behavior of Materials: Covers the dynamic stress-strain aspects of material behavior, discusses elastic waves in bounded media, describes the Hopkinson bar, an experimental tool for the determination of the dynamic strength of materials, and includes impacts of bars and response of high strain rate.

ME 6133: Nonlinear Systems Analysis & Control: Studies nonlinear systems from perspective of analysis/control system design; Explores fundamental properties for nonlinear differential equations in addition to describing functions, phase plane analysis, stability/instability theorems. Develops and applies control system design approaches for nonlinear systems, including feedback linearization and sliding mode control.

ME 6134: Advanced Dynamics: Systematic study of principles of mechanics from a modern perspective. Includes rates of change of position and orientation; angular velocity and acceleration; linear velocity and acceleration; generalized coordinates and velocities; properties of distributed mass; generalized active and inertia forces for holonomic and non-holonomic systems; potential energy, kinetic energy, and virtual work.

ME 6140: Advanced Power train Instrumentation and Experimental Methods: Students will be exposed to unique instrumentation used in modern power train research and development. Through hands-on experimentation students will learn techniques for installation, usage, and calibration. Students will also be exposed to data quality checks and techniques to mitigate experimental variation.

ME 6141: Advanced Combustion: The objective is to understand basic combustion processes through detailed chemical reaction step analysis; Introduces both analytical and modern experimental methods; Emphasizes gas liquid fuel combustion, flame propagation, and critical phenomena of ignition and extinction.

ME 6142: Advanced Machining Processes: Covers mechanics of 2-D and 3-D cutting and their extension to commonly used processes such as turning, boring, milling, and drilling. Topics include force modeling, surface generation, heat transfer, tool life and dynamics.

ME 6143: Advanced Metal Forming: Introduces fundamentals of plasticity theory and applies to the analysis of deformation processes. Processes considered are forging, extrusion, wire drawing, bending, deep drawing, and stretch forming; Emphasizes sheet metal formability.

ME 6144: Experimental Methods Viper-Acoustics: Covers operating data measurement and analysis, including multisource ODS. Includes signature analysis and order tracking; modal theory, modal scaling. FRF estimators; multiple input excitation techniques; parameter estimation methods; sound measurements and acoustic intensity; sound quality; field data acquisition, DAT; binaural recording and playback with equalization.

ME 6145: Introduction to Robotics and Mechatronics: Cross-discipline system integration of sensors, actuators, and microprocessors to achieve high-level design requirements, including robotic systems. A variety of sensor and actuation types are introduced, from both a practical and a mathematical perspective. Embedded microprocessor applications are developed using the C programming language. A final project is required including analysis, design, and experimental demonstration.

ME 6146: Advanced Continuum Mechanics: Presents fundamental concepts in hyperelasticity, damage mechanics, linear viscoelasticity, quasi-linear viscoelasticity, poroelasticity, continuum jump conditions, plasticity, and viscoplasticity. These theories are applied to describe the mechanical behavior of a wide range of engineering materials and biomaterials such as polymers, metals, soil, collagen, muscle tissue, bone tissue, and cartilage.

ME 6147: Design Optimization: Covers mathematical optimization methods useful for engineering design optimization; it includes classical methods as well as new techniques; Emphasizes practical applications and the selection of optimization methods for the solution of specific problems in design.

ME 6148: Advanced Acoustics: Advanced concepts in acoustics with emphasis on modeling of sound sources, sound interaction with solid structures, transmission and radiation of sound. Discusses numerical acoustics, statistical energy analysis, and sound quality concepts; Provides beneficial background in basic vibrations and noise control.

ME 6149: Advanced Vibrations: Free and forced vibration of continuous systems with applications to strings, shafts, beams, plates and membranes. Problems formulated using Hamilton's principle and Lagrange's equations. Approximate methods of solution include the Rayleigh-Ritz method and Galerkin's method.

12.03.09 - Structural Engineering:

STE 6140: Statics and Strength of Materials for Construction: An accessible and visually oriented introduction to structural theory, with illustrations and examples of building frameworks and components to enable students to visually connect theoretical concepts with the experiential nature of real buildings and materials.

STE 6141: Masonry Structural Design: Emphasizes the strength design of masonry and includes allowable-stress provisions. Innovations such as autoclaved aerated concrete masonry (AAC) are also discussed. Real-world case studies featuring a low-rise building with reinforced concrete masonry and a four-story building with clay masonry illustrate the techniques presented in this comprehensive resource. Covers basic structural behavior and design of low-rise, bearing wall buildings, materials used in masonry construction, code basis for structural design of masonry buildings, including seismic design, introduction of MSJC treatment of structural design, strength design of reinforced and unreinforced masonry elements, allowable-stress design of reinforced and unreinforced masonry elements, comparison of design by the allowable-stress approach versus the strength approach, lateral load analysis of shear wall structure, design and detailing of floor and roof diaphragms

STE 6142: Structural Analysis with the Finite Element Method: Presents the basis of the FEM for structural analysis and a detailed description of the finite element formulation for axially loaded bars, plane elasticity problems, symmetric solids and general three dimensional solids, describes the background theory for each structural model considered, details of the finite element formulation and guidelines for the application to structural engineering problems.

STE 6143: Beam Structures: Classical and Advanced Theories: Unified approach to beam theory that includes practically all classical and advanced models for beams and which has become established and recognized globally as the most important contribution to the field in the last quarter of a century.

STE 6144: Earthquake Hazard and Seismic Risk Reduction: Provides an overview of the achievements and experiences of different countries in disaster reduction that covers Disaster Reduction, Earthquake Hazards, and Earthquake Engineering.

STE 6145: Advanced Reinforced Concrete Structures: Discusses reinforced concrete members and provides techniques for sizing the cross section, calculating the required amount of reinforcement, and detailing the reinforcement. Design procedures and flowcharts guide you through code requirements, and worked-out examples demonstrate the proper application of the design provisions. Includes Mechanics of reinforced concrete, Material properties of concrete and reinforcing steel, Considerations for analysis and design of reinforced concrete structures, Requirements for strength and serviceability, Principles of the strength design method, Design and detailing requirements for beams, one-way slabs, two-way slabs, columns, walls, and foundations

STE 6146: Advanced Steel and Composite Structures: Covers a range of special topics, including performance-based design and human tolerance for the wind-induced dynamic motions of tall buildings and presents preliminary analysis techniques, graphical approaches for determining wind and seismic loads, and graphical aids for estimating unit-quantity of structural steel. The final chapter deals with the art of connection design.

STE 6147: Analysis of Plates and Shells: Covers Introduction to structural analysis by the finite element method, finite elements for axially loaded rods, advanced 1D rod elements and requirements for the numerical solution, 2D solids, Linear triangular and rectangular elements, 2D solids, higher order elements, shape functions and isoparametric formulation, ax-symmetric solids, three dimensional solids, bending of slender beam, thick/slender beams, Timoshenko theory, thin plates. Kirchhoff's theory, thick/thin plates, analysis of shells using flat elements, analysis of arbitrary shape shells using degenerate solid elements, three-dimensional rods and shell stiffness, prismatic structures, miscellaneous: inclined supports, displacements,

constrains, nodal condensation error estimation, pre and post-processing and Mesh generation and visualization of computer results.

STE 6148: Plastic-Hinge Methods For Framed Structures: Provides a rather complete procedure of the automatic plastic-hinge analysis: The one/two/three-linear behaviors of the material are considered Both fixed and repeated loading are authorized. The P-delta effects are also taken into account. The beam-to-column joints could be rigid or semi-rigid. The compact or slender cross-sections are examined. The analysis is carried out using alternatively direct or step-by-step methods. Both analysis and optimization aspects are envisaged in such a way that re-analyze of optimal structure is possible for eventual verification.

STE 6149: Earthquake Resistant Buildings: Provides a general introduction to the design of buildings which must be resistant to the effect of earthquakes, preventive building structure, examines building structures and vertical components, and examines analyses the disastrous influence of vertical components.

12.03.10 - Telecommunication:

TLM 6140: Network Flaws, Theory and Application: Lets students turn back-time as analyzing a network. Provides knowledge and training on how to use open source software to build a flow-based network awareness system and how to use network analysis and auditing to address problems and improve network reliability. It also provides knowledge and training on to use a flow analysis system; collect flow records; view, filter, and report flows; present flow records graphically; and use flow records to proactively improve your network. Emphasizes on how to Identify network, server, router, and firewall problems before they become critical, Find defective software, Quickly find virus-spewing machines, even if they're on a different continent, Determine whether your problem stems from the network or a server and Automatically graph the most useful data.

TLM 6141: Fundamentals of DSL Technology: Covers All DSL varieties: U.S. and international varieties include ANSI and ITU standards as well as legacy and proprietary DSL varieties, such as CAP, Cisco DSL-related equipment that supports all the DSL varieties and configurations in both Cisco IOS(r) Software and the graphical user interface Cisco DSL Manager (CDM) software, All six architectures that implement DSL using TCP/IP, with in-depth discussion of the four most commonly-used architectures, New standards and deregulation issues, including the ITU SHDSL standard and the evolving VDSL technology, International regulatory and infrastructure issues, with measurements expressed for both U.S. and international audiences and Common challenges and their solutions when deploying or migrating using DSL, including voice-over-IP (VoIP) and multimedia traffic; and Using MPLS to move DSL-generated traffic through networks.

TLM 6142: Microwaves and RF Engineering: Explores a large spectrum of topics within microwave and radio frequency (RF) engineering, encompassing electromagnetic theory, microwave circuits and components. It provides thorough descriptions of the most common microwave test instruments and advises on semiconductor device modeling.

TLM 6143: Antenna Theory and Design: Principles and development techniques for examining and designing antenna systems with emphasis on basic topics and applications, and much material that are not rely heavily on mathematics. Early sessions cover fundamentals, and further chapters detail commonly used antenna elements, synthesis of arrays, and evaluation techniques, including summaries, exercises designed to be solved using computing packages, and reference appendices of frequencies and formulas, plus short descriptions of computing packages available on a Web site.

TLM 6144: Advanced Topics in Signal Processing: Addresses many of the contemporary problems faced when processing hyper-spectral image data with focus thematic mapping and classification, spectral un-mixing, morphology and compression and the state of kernel based methods in image analysis. Focuses on advances in signal processing and exploitation techniques for optical remote sensing with a collection of state-of-the art algorithms for hyper-spectral and multispectral imaging technologies. Includes a collection of images and graphics, processing technologies and parallel implementations with up-to-date references at the end of each chapter

TLM 6145: Underwater Acoustics: Focuses on the acoustic environment, antenna structures, electric acoustic interface, and provides knowledge required to design, as well as the development and implementation of chain processes for active sonar from the conditioning input to output processing. The course includes a comprehensive range of all problems encountered in underwater acoustics for a sonar application, from physical phenomena governing the environment and the corresponding constraints, through to the technical definition of transducers and antennas, and the types of signal processing involved. In one section, measures in underwater acoustics are also proposed.

TLM 6146: LTE, WiMAX and WLAN Network Design: Provides a practical guide to LTE and WiMAX technologies introducing various tools and concepts used within. In addition, topics such as traffic modeling of IP-centric networks, RF propagation, fading, mobility, and indoor coverage are explored; new techniques which increase throughput such as MIMO and AAS technology are highlighted; and simulation, network design and performance analysis are also examined. Finally, in the latter part of the book Korowajczuk gives a step-by-step guide to network design, providing readers with the capability to build reliable and robust data networks.

TLM 6147: Satellite Communications Systems: Covers the entire field of satellite communications engineering from orbital mechanics to satellite design and launch, configuration and installation of earth stations, including the implementation of communications links and the set-up of the satellite network and provides a comprehensive treatment of satellite communications systems engineering and discusses the technological applications, demonstrates how system components interact and details the relationship between the system and its environment and discuses the systems aspects such as techniques enabling equipment and system dimensioning and state of the art technology for satellite platforms, payloads and earth stations.

TLM 6148: Telecommunications Network Design and Management: Represent the state-of-the-art of applying operations research techniques and solutions across a broad spectrum of telecommunications problems and implementation issues. Deal with the design of wireless networks, including UMTS and Ad-Hoc networks. Deal with the optimal design of telecommunications networks, Techniques used for network design range from genetic algorithms to combinatorial optimization heuristics, traffic flow in telecommunications networks, focusing on optimizing traffic load distribution and the scheduling of switches under multi-media

streams and heavy traffic, telecommunications network management, examining bandwidth provisioning, admission control, queue management, dynamic routing, and feedback regulation in order to ensure that the network performance is optimized and the construction of topologies and allocation of bandwidth to ensure quality-of-service.

TLM 6149: Systems Engineering in Wireless Communications: Focus on the area of radio resource management in third generation wireless communication systems from a systems engineering perspective. Provide an introduction into cellular radio systems as well as a review of radio resource management issues. A detailed discussion of power control, handover, admission control, smart antennas, joint optimization of different radio resources, and cognitive radio networks is offered. Emphasis is on the dynamical issues arising from mobile nodes in the network. Well-known control techniques, such as least squares estimation, PID control, Kalman filers, adaptive control, and fuzzy logic are used throughout the course.

04 - Education:

Educational Leadership:

ED 5120: Philosophy of Education: In this course Learners examine the philosophical foundations of education and explore the underlying principles of education and the nature of knowledge, how classical, modern and post modern theories impact the current education models. Learners investigate the philosophical underpinnings of American education in order to improve educational practice, policy, and participation. In a broader context, ED 5003 as a fundamental course is designed to present issues and perspectives aligned to the study and practice of education. Learners critically question and examine assumptions about the role of government in education, the constitution of classroom instruction, and the function of social identities in education. In this context, much of the discussion and debate centers on the nature of knowledge, of reality, of value and of the individual. Learners create and critique their personal and professional philosophy of education.

ED 5121: School Law: Students will investigate the impact of school law on the rights of students and educators as guaranteed by the Constitution and its amendments. This investigation will include state and federal statutory and regulatory provisions as well as tort and contract liability as they influence education.

ED 5122: Instructional Supervision and Leadership: The purpose of this course is to examine the theoretical framework and practical applications of instructional leadership within the economic, social, political, and educational context of schooling. This course proposes a concept of supervision and leadership designed to help educational leaders build a repertoire of approaches and strategies that will enhance professional growth while showing the importance of sensitivity to individual needs. Emphasis is placed upon the learner gaining a clear understanding of the interrelatedness among supervision and leadership, instruction, and assessment.

ED 5123: Policy Studies for Educational Leaders: Focuses on the background of education policy, what is policy and where it comes from, power and education policy, the economy and demographics, the political system and political culture, values and ideology. Also covers The Major Education Policy Actors, Setting the Stage and Getting on It: Issue Definition and Agenda Setting, Getting the Words and the Money: Policy Formulation and Policy Adoption, Looking at Policies: Policy Instruments and Cost Effectiveness, Policy Implementation: Getting People to Carry Out a Policy, Policy Evaluation: Determining If the Policy Works and Education Policy in the United States Retrospective and Prospective.

ED 5124: Improving Schools Through Action Research: prepares educators to conduct their own action research projects. The third edition provides the information needed to complete each step of the action research cycle. Chapter activities include a research paper component that helps readers create a research paper as they complete the activities. Additional activities have been added in this edition to help educators navigate through each step of the action research process—from choosing a topic and generating research questions through data analysis and reporting results and conclusions. Other features of the book include detailed strategies for (1) reviewing and synthesizing the literature and writing a literature review, (2) collecting, triangulating, and analyzing quantitative and qualitative data (including how to graphically display results), (3) drawing conclusions from results, and (4) writing in APA

(6th edition) style. Numerous Internet resources—including links to action research networks, professional organizations, and journals—are provided. Throughout the text, the book incorporates numerous pedagogical devices such as Exercises and Cases to help readers practically explore topics. Examples are provided throughout the book to document the ways teachers, principals, counselors, administrators, and support staff can improve their practice through action research

ED 5130: School Leadership and Administration: ISLLC Standard, Leadership, Decision Making, Authority, Power, and Influence, Communication, Conflict Management, Organizational Culture, School Improvement, Introduction to Clinical Materials and Learning Experiences, Beginning Challenges, Student Problems, Administrator-Staff Relationships, School-Community Relations, Role and Organizational Problems, Social Justice Issues and Problems of Change

ED 5131: School Finance: This course will provide students with an understanding of and practical experience with the major concepts and tools in school finance. The course will cover the three distinct components of education finance: 1) evaluating revenue sources, including school aid; 2) developing and defending budgets; and 3) managing the finances and business operations of a school district. The objective is to provide students with an understanding of the general principles of education finance that can be applied in any setting.

ED 5132: Leadership: Theory and Practice: Being a Leader, Recognizing Your Traits, Recognizing Your Philosophy and Style of Leadership, Attending to Tasks and Relationships, Developing Leadership Skills, Creating a Vision, Setting the Tone, Listening to Out-Group Members, Overcoming Obstacles and Addressing Ethics in Leadership.

ED 5133: Education and Social Change: Focuses on the evolving relationship between education and social change. This course considers the impact of social forces such as industrialization, urbanization, immigration, and cultural conflict on the development of schools and other educational institutions. It also examines the various ways that schools have contributed to social change, particularly in enhancing the status and accomplishments of certain social groups and not others. Detailed accounts of the experiences of women and minority groups in American history consider how their lives have been affected by education.

ED 5134: Policy Studies for Educational Leaders: Focuses on the background of education policy, what is policy and where it comes from, power and education policy, the economy and demographics, the political system and political culture, values and ideology. Also covers The Major Education Policy Actors, Setting the Stage and Getting on It: Issue Definition and Agenda Setting, Getting the Words and the Money: Policy Formulation and Policy Adoption, Looking at Policies: Policy Instruments and Cost Effectiveness, Policy Implementation: Getting People to Carry Out a Policy, Policy Evaluation: Determining If the Policy Works and Education Policy in the United States Retrospective and Prospective.

ED 5140: Improving Schools Through Action Research: prepares educators to conduct their own action research projects. The third edition provides the information needed to complete each step of the action research cycle. Chapter activities include a research paper component that helps readers create a research paper as they complete the activities. Additional activities have been added in this edition to help educators navigate through each step of the action research process—from choosing a topic and generating research questions through data analysis and reporting results and conclusions. Other features of the book include detailed strategies for (1) reviewing and synthesizing the literature and writing a literature

review, (2) collecting, triangulating, and analyzing quantitative and qualitative data (including how to graphically display results), (3) drawing conclusions from results, and (4) writing in APA (6th edition) style. Numerous Internet resources—including links to action research networks, professional organizations, and journals—are provided. Throughout the text, the book incorporates numerous pedagogical devices such as Exercises and Cases to help readers practically explore topics. Examples are provided throughout the book to document the ways teachers, principals, counselors, administrators, and support staff can improve their practice through action research

ED 5141: School Safety: This course is designed to provide learners with set of standards that educators can use to evaluate their schools and then develop practical and systematic plans for ensuring orderly and caring learning environments. The course also addresses several theoretical perspectives through which learners can come to understand school safety. Attention is given to the distinction between preventing violence and promoting safety.

ED 5142: Instructional Supervision and Leadership: The purpose of this course is to examine the theoretical framework and practical applications of instructional leadership within the economic, social, political, and educational context of schooling. This course proposes a concept of supervision and leadership designed to help educational leaders build a repertoire of approaches and strategies that will enhance professional growth while showing the importance of sensitivity to individual needs. Emphasis is placed upon the learner gaining a clear understanding of the interrelatedness among supervision and leadership, instruction, and assessment.

ED 5143: The School Counseling and School Social Work Treatment: Covers disruptive classroom behaviors, reinforcing student success, bullying, peer conflict, and school violence. School and mental health professionals are provided with all the elements necessary to quickly and easily develop formal treatment plans that satisfy the demands of HMOs, managed care companies, third-party payers, and state and federal review agencies.

ED 5144: Measurement and Assessment in Teaching: The Measurement and Assessment Process, Educational Testing and Assessment, Context, Issues, and Trends, The Role of Measurement and Assessment in Teaching, Instructional Goals and Objectives: Foundation for Assessment, Validity, Reliability and Other Desired Characteristics, Classroom Tests and Assessments, Planning Classroom Tests and Assessments, Constructing Objective Test Items: Simple Forms, Constructing Objective Test Items: Multiple Choice Forms, Measuring Complex Achievement: The Interpretive Exercise, Measuring Complex Achievement: Essay Questions, Measuring Complex Achievement: Performance-Based Assessments, Portfolios, Assessment Procedures: Observational Techniques, Peer Appraisal, and Self-Report, Assembling, Administering, and Appraising Classroom Tests and Assessments, Grading and Reporting, Selecting and Using Published Tests, Achievement Tests, Aptitude Tests, Test Selection, Administration, and Use, Interpreting Test Scores and Norms.

ED 5145: School Based Leadership: Focuses on community participation (parents, etc.), decentralization and teacher empowerment to improve school performance.

ED 5146: School and Community Relations: Lends students a field-tested, step-by-step guide to establishing strong community communication in a variety of school environments, and Focuses on both the “haws” and the “whys” of each approach and stratagem.

ED 6011: Human Resource Management And Development: Examines methods that organizations use to meet organizational goals through influencing worker attitudes, behaviors, and performance. Topics include recruitment, selection, training, performance appraisal, and compensation.

ED 6020: Applied Statistics: Provides instruction on the calculation, use, and interpretation of descriptive and inferential statistics. Emphasis is placed on the application and interpretation of statistical tests in conducting research at the graduate level. This course introduces inferential statistics and its application to research design. Current SPSS software will be utilized. Both parametric and non-parametric approaches to the analysis of data will be discussed.

ED 6026: Cognition, Emotion and Motivation: A comprehensive overview of the theory of human cognition and cognitive psychology. Issues to be presented and researched will include, but are not limited to, attention, imagery and memory, consciousness, schemata, cognitive maps, decision making and problem solving.

ED 6130: School Leadership and Administration: ISLLC Standard, Leadership, Decision Making, Authority, Power, and Influence, Communication, Conflict Management, Organizational Culture, School Improvement, Introduction to Clinical Materials and Learning Experiences, Beginning Challenges, Student Problems, Administrator-Staff Relationships, School-Community Relations, Role and Organizational Problems, Social Justice Issues and Problems of Change

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ED 6134: Organizational Development: Survey of methodological approaches to planned change, including organizational diagnosis, data collection, interventions, feedback, and evaluation. Specific types of interventions covered include strategic planning, organizational design, culture change, team building, survey feedback, goal setting, and career development.

ED 6140: Improving Schools Through Action Research: prepares educators to conduct their own action research projects. The third edition provides the information needed to complete each step of the action research cycle. Chapter activities include a research paper component that helps readers create a research paper as they complete the activities. Additional activities have been added in this edition to help educators navigate through each

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ED 6148: Supervision of Curriculum: This is a course in curriculum management. Learners will examine the processes and procedures of supervising curriculum change, follow-through, and evaluation with special attention given to curriculum review committees, in-service training, articulation, and diversified programs for students.

ED 6149: Innovation and Change: To be an effective leader demands an understanding of the basic principles and practices underlying innovation and change processes in organizations. Learners will explore various change theories, and best practices for successful implementation in their workplace. Issues of visioning, coalition building, creating and promoting change agenda, and the Learners examine building capacity for change. Opportunity to investigate one's personal reaction and response to change is highlighted.

12.04.02 - Educational Leadership of Special Need Students:

ESE 5140: Introduction to Special Education: Examines bureaucracy at the federal, state, and local levels with particular focus on the government's working, public policies, and making choices for the benefit of society.

ESE 5141: Characteristics of Learning Disabled Students: This course is an introduction to non-categorical and mainstream programming and to the advantages and disadvantages of this approach. Emphasis is on legislation and litigation related to mildly handicapped students, on assessment and placement of these students, on the role of the special education teacher, and on meeting the educational and socio-emotional needs of these students.

ESE 5142: Strategies for Teaching Learners with Special Needs: offers the most comprehensive look at how to teach students with mild/high incidence disabilities. Balancing elementary and secondary teaching strategies, the text focuses on effective instructional practices, devotes an entire part to general curriculum content areas, and concludes with exceptional coverage of critical skills and transitions.

ESE 5143: Learning Disabilities and Related Mild Disabilities: Includes a cross-categorical emphasis that makes it suitable for a broad number of courses, including those aimed at teaching students with mild disabilities and which are part of many states' certification requirements. The book describes the characteristics of learning disabilities as well as various

mild disabilities, and offers teaching strategies for general education teachers, special education teachers, school psychologists, and other related professionals.

ESE 5144: Management of Students with Behavioral Problems: Positive Applications for Teachers outlines both school-wide and individual strategies for positive behavior supports — while also focusing on how educators can develop unique behavior management strategies for individual students. This comprehensive text emphasizes functional techniques, real-world classrooms, and practical information — all while covering the legal aspects of behavioral management, assessment strategies, strategies for special populations and diverse populations, age-related behavioral concerns, and the three-tier response-to-intervention approach.

ESE 5145: Teaching Students with Language Disabilities: Examines language development and disorders in school-age children, analyzes language difficulties associated with specific disabilities, and presents assessment techniques and instructional strategies used in today's classrooms.

ESE 5146: Transition Planning for Students with Disabilities: Understanding the varied transition needs of students with disabilities—and the potential options and career paths in transition education—pre- and in-service teachers and professionals get the support they need to develop and implement transition activities and programs. The course organizes transition topics around four essential elements of transition and a backward planning process with a focus and readability for the student new to transition.

ESE 6140: Introduction to Special Education: Examines bureaucracy at the federal, state, and local levels with particular focus on the government's working, public policies, and making choices for the benefit of society.

ESE 6141: Assessment of Student Achievement: develops high-quality assessments to use in classrooms and presents a balanced, concise, and practical guide for testing and performance assessment that is rooted in effective classroom instruction and learning through an approach that gives equal emphasis to testing and performance assessment—each used when it is most appropriate—as integral steps that improve student learning and ultimately build student success.

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ESE 6149: Conflict Resolution and Mediation: Dealing with conflict is an inevitable part of any leader's role. Timely and relevant, this course examines conflict management processes and skills with emphasis on interaction patterns, interpersonal relationships, and communication skills. Learners will examine the nature of conflict - its origins, sources, and types - as well as the concepts and skills of proactive intervention, conflict resolution and utilizing various conflict resolution strategies in organizational settings, it also issues such as dealing with diversity and ethical issues in multiple contexts, fostering creativity in problem solving and process design, and strategy and skills for successful mediation will be examined. Theory, structure, and practice of collaborative negotiation and mediated negotiations and application of the skills used to prevent and resolve conflict are emphasized.

12.04.03 - Educational Technology Management:

ETM 5140: Educational Application of Internet: provides K–12 examples of how Web tools such as blogs, wikis, Face book, and Twitter allow students to learn more, create more, and communicate better.

ETM 5141: Instructional Design: This course explores the foundations of instructional design and the design process as it applies in the development of educational media and software. Research, goal analysis, objectives, instructional strategy development, and evaluation in the design process are utilized in the planning and development of an educational product.

ETM 5142: Educational Technology Planning and Management: Covers Introduction to technology and planning, Basic concepts of planning, Technology, learning, and equity issues, Technology in educational administration, Technology in instruction, Multimedia in education, Data communications, the Internet, and educational applications, Distance learning, Hardware planning and evaluation, Software selection and evaluation, Staff development, Managing facilities and Financial planning

ETM 5143: Educational Application of Media and Technology: Offers a clear and current look at the range of educational technologies and how teachers can effectively use technology to enhance learning and provides a foundation in learning theory and instructional design that helps position educational technology within the framework of teaching and learning. Using practical applications, examples from the classroom, and an array of reflection activities, the course offers students the opportunity to fully explore and apply technologies as tools to enhance teaching and learning.

ETM 5144: Information Technology Project Management: The Nature Of Information Technology Projects, Conceptualizing And Initializing The IT Project, The Project Infrastructure, The Human Side Of Project Management, Defining And Managing Project And Product Scope, The Work Breakdown Structure And Project Estimation, The Project Schedule And Budget, Managing Project Risk, Project Communication, Tracking, And Reporting, IT Project Quality Management, Managing Organizational Change, Resistance And Conflict, Project Procurement Management And Outsourcing, Leadership And Ethics, and Project Implementation, Closure, And Evaluation.

ETM 5145: Teaching and Learning with Technology: Offers a clear and current look at the range of educational technologies and how teachers can effectively use technology to enhance learning. Provide a foundation in learning theory and instructional design that helps position educational technology within the framework of teaching and learning. Using practical applications, examples from the classroom, and an array of reflection activities, the course offers students the opportunity to fully explore and apply technologies as tools to enhance teaching and learning.

ETM 5146: Administering the School Library Media Center: Provides a complete instructional overview of the workings of the library media center-from the basics of administration, budgeting, facilities management, organization, selection of materials, and staffing to explanations on how to promote information literacy and the value of digital tools like blogs, wikis, and podcasting.

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ETM 6147: Educational Leadership and Planning for Technology: provides educators with both the theoretical and the practical considerations for planning and implementing technology in today's schools, with an emphasis on the total application of technology including both administrative and instructional uses. Designed for pre-service and in-service educators such as administrators, teachers, technology coordinators, and media specialists, this fifth edition text builds a strong foundation from which educators may provide informed leadership and become agents for realizing the powerful potential of technology in their schools.

ETM 6148: Multimedia Communications and Networking: Starts with a review of the fundamental concepts, requirements, and constraints in networks and telecommunications, and

describes channel disturbances that can hinder system performance—including noise, attenuation, distortion, and interferences—and provides transmission techniques for mitigating these limitations. Analyzing both cable and wireless transmission mediums with description of the network protocol architecture concept and includes coverage of twisted pairs, coaxial and optical fiber cables, wireless propagation, satellite communications, and terrestrial microwave systems.

ETM 6149: Distance Education: Theory and Process: Explores current distance learning practices and applications utilized in education and corporate training. Participants will research, evaluate and apply methods and techniques in developing a program of study designed for distance delivery. Students will consider the impact and relevance of distance education and its current and future role in meeting the needs of a learning society.

12.02.04 - Instructional Leadership:

IL 5140: Creation and Transfer of Knowledge: Covers the characteristics of the institutions regulating the production and diffusion of knowledge, Commutation of knowledge is a key determinant of economic growth, but only recently knowledge has moved to the core of economic analysis. Recent literature also gives profound insights into events like scientific progress, artistic and craft development which have been rarely addressed as socio-economic institutions, being the domain of sociologists and historians rather than economists.

IL 5141: Instructional Leader as Advocate and Decision Maker: In this course, Learners examine the role of instructional leader as that of advocate and decision maker. The importance of this particular role is grounded in the realization that the instructional leader articulates the vision that reflects the mission, core values, beliefs, and purpose of the educational enterprise. Additionally, the instructional leader's role as advocate is to support the development and maintenance of high standards of performance and achievement. As decision maker and standard-bearer for the enterprise, the instructional leader models the way and leads by example.

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IL 6140: Developing Instructional Strategies and Curriculum: Focuses on Strategic planning and academic prioritizing, Institutional and program improvement, Institutional and program accreditation, Institutional and program assessments and Academic resource effectiveness.

IL 6141: Teaching and Learning Foundations: Provide a clear, concise introduction to the major pedagogical and psychological theories and their implications for the design of new learning environments for schools, universities, or corporations. Describe the most important contemporary theories that form the foundation of the conception and design of student-centered learning environments and new applications of educational technologies.

IL 6142: Multiple Intelligences: Brilliant conception of individual competence has changed the face of education in the twenty-three years since the publication of the classic reference Frames of Mind. Since then thousands of educators, parents, and researchers have explored the practical implications and applications of Multiple Intelligences theory--the powerful-notion that there are separate human capacities, ranging from musical intelligence to the intelligence involved in self-understanding.

IL 6143: Educational Leadership And Student Achievement: Examines theoretical models of the possible effects of principal leadership and peer teacher influence on teachers' instructional practice and student learning. Data collected for this study come from a randomized delayed-treatment evaluation of school principal professional development in a mid-sized urban U.S. school district. Beyond investigation of the effectiveness of the professional development program, the teacher survey data and data on student ELA and mathematics achievement from this study provide a rich opportunity to examine of the plausible and possible influence of principals and teachers on teacher instruction and student learning. For this study, one year of teacher survey and two years of student achievement data were collected and linked. Scale development of the survey data was performed with special attention to the reliability and validity of measures.

IL 6144: Foundations of Distance Education: Covers the various technologies that can be used for the delivery of distance education and provides the basics needed to become a

knowledgeable distance educator or manager of distance education systems including the theory and research that inform distance learning, practical skills and knowledge needed to function immediately in a distance learning environment, and managerial and administrative issues that arise in distance learning environments.

IL 6145: Introduction to Special Education: Examines bureaucracy at the federal, state, and local levels with particular focus on the government's working, public policies, and making choices for the benefit of society.

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12.04.05 - Higher Education Leadership:

LHE 5140: Higher Education Policy: Analyzes how issues of affordability, access, and accountability influence the way in which state governments approach, monitor, and set public higher education policy. The contributors examine the latest research on pressing challenges, explore how states are coping with these challenges, and consider what the future holds for public postsecondary education in the United States.

LHE 5141: For Profit Colleges and Universities: Analysis of for-profit colleges and universities, reviewing their history, business strategies, and management practices; setting them in the context of marketplace conditions, the framework of public policy and government regulations; and viewing them in the light of the public good. Variously explore FPCU's governance, how they develop courses and programs, and the way they define faculty work; present findings from in-depth interviews with part-time and full-time faculty to understand how external forces and the imperative of profit generation affect faculty roles and responsibilities of

faculty; analyze policy considerations that affect FPCUs, including federal regulation and oversight, accountability and assessment, and the legal and regulatory issues FPCUs face internationally; and finally address the notion of academic freedom and the distribution of public monies to FPCUs.

LHE 5142: Budget and Financial Management in Higher Education: This course examines financial management and budgeting practices internal to institutions of higher education. The course provides Learners with a working knowledge of budget development, financial management, and fiduciary control in colleges and universities

LHE 5143: Organization and Governance in Higher Education: Because of the complex nature of the postsecondary institution, this course creates eight subject area lenses. Each lens allows the reader to engage the specific paradigms and phenomena related to that aspect of higher education. The areas are arranged in the following order: classic organization theory, traditional administrative and governance models, campus climate and culture, leadership analysis, management principles, institutional change and assessment, perspectives on race and gender, and critical approaches to organizational governance.

LHE 5144: Academic Leadership for Higher Education: Provides a compassionate understanding of the stresses of leadership in higher education and offers insights to those who do not fully appreciate why higher education is so hard to 'manage' and validation for those entirely familiar with this world.

LHE 5145: Foundations of Distance Education: Covers the various technologies that can be used for the delivery of distance education and provides the basics needed to become a knowledgeable distance educator or manager of distance education systems including the theory and research that inform distance learning, practical skills and knowledge needed to function immediately in a distance learning environment, and managerial and administrative issues that arise in distance learning environments.

LHE 5146: Community College Leadership and Administration: Emphasis is placed on deconstructing outdated practices and constructing new approaches to how contemporary community college leadership is viewed, practiced, and envisioned to develop new models focused on facilitating leadership innovativeness.

LHE 6140: Adult Education: Covers Exploring the world of learning theory; Theories of learning; A theory of adult learning, Theories of teaching, process model for learning; Advancements in Adult Learning; Adult learning within human resource development; New perspectives on The future and Practice in Adult Learning;

LHE 6141: Higher Education Policy: Analyzes how issues of affordability, access, and accountability influence the way in which state governments approach, monitor, and set public higher education policy. The contributors examine the latest research on pressing challenges, explore how states are coping with these challenges, and consider what the future holds for public postsecondary education in the United States.

LHE 6142: Academic Transformation: Balances cognitive theory and research with realistic and proven skills that students can deftly apply, utilizing a narrative tone, eye-catching design, and plentiful real-life examples, this course bestows students with life lessons covering the subjects of motivation, procrastination, time management, stress management, and

behavior redirection — all while giving a solid understanding of why certain strategies lead to goal achievement.

LHE 6143: For Profit Colleges and Universities: Analysis of for-profit colleges and universities, reviewing their history, business strategies, and management practices; setting them in the context of marketplace conditions, the framework of public policy and government regulations; and viewing them in the light of the public good. Variously explore FPCU's governance, how they develop courses and programs, and the way they define faculty work; present findings from in-depth interviews with part-time and full-time faculty to understand how external forces and the imperative of profit generation affect faculty roles and responsibilities of faculty; analyze policy considerations that affect FPCUs, including federal regulation and oversight, accountability and assessment, and the legal and regulatory issues FPCUs face internationally; and finally address the notion of academic freedom and the distribution of public monies to FPCUs.

LHE 6144: Budget and Financial Management in Higher Education: This course examines financial management and budgeting practices internal to institutions of higher education. The course provides Learners with a working knowledge of budget development, financial management, and fiduciary control in colleges and universities

LHE 6145: Organization and Governance in Higher Education: Because of the complex nature of the postsecondary institution, this course creates eight subject area lenses. Each lens allows the reader to engage the specific paradigms and phenomena related to that aspect of higher education. The areas are arranged in the following order: classic organization theory, traditional administrative and governance models, campus climate and culture, leadership analysis, management principles, institutional change and assessment, perspectives on race and gender, and critical approaches to organizational governance.

LHE 6146: Transnational Higher Education: Coves the extent and form of offshore activity, the pedagogical and cultural controversies that have plagued transnational education, the challenges it presents to governments, educators and HE managers, how governments are developing forms of regulation to integrate cross-border programs and branch-campuses into their strategic planning for the sector, the new opportunities for students and institutions.

LHE 6147: Academic Leadership for Higher Education: Provides a compassionate understanding of the stresses of leadership in higher education and offers insights to those who do not fully appreciate why higher education is so hard to 'manage' and validation for those entirely familiar with this world.

LHE 6148: Foundations of Distance Education: Covers the various technologies that can be used for the delivery of distance education and provides the basics needed to become a knowledgeable distance educator or manager of distance education systems including the theory and research that inform distance learning, practical skills and knowledge needed to function immediately in a distance learning environment, and managerial and administrative issues that arise in distance learning environments.

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12.04.06 - Organizational Leadership

OL 5140: Building Organizational Capacity: There are numerous definitions and usages for the phrase, "capacity building" in the education and leadership literature. For the purpose of this course, the term, "building organizational capacity," will be used to describe a parallel "universe," where both the Learner's capacity AND the organization's capacity must be developed to achieve the organization's mission and goals. When demand exceeds personal capacity, it is impossible to tap into personal talents and skills to help the organization. Personal and professional performance, health, and potential success are all compromised. The critical element for high performance at work and effectiveness in life requires sufficient capacity. A Learner interested in building organizational capacity must also understand how to build their own capacity for achieving these organizational goals. Learners will analyze (audit) their own organization to assess internal and external capacity - looking at all the individual parts of the organization (tangible and intangible) to understand their individual and collective impact on achieving maximum effectiveness and productivity. Simultaneously, Learners will also critically evaluate their own role in their organization as it relates to building capacity.

OL 5141: Quality Management for Organizational Excellence: Covers the theories and principles of total quality in the real world, current and comprehensive, it covers every aspect of total quality -- including several that receive little or no attention in other total quality books, and makes an understanding in order to compete in the global arena, businesses must achieve consistent peak performance, continual improvement, and maximum competitiveness with coverage of Lean and Lean Six Sigma. Key topics covered include global competitiveness; strategic management; ethics and corporate social responsibility; partnering and strategic alliances; quality culture; customer satisfaction and retention; employee empowerment; leadership; teamwork; communication; education and training; overcoming negativity; the ISO 9000 quality management system; tools and techniques; and implementing total quality management.

OL 5142: Organizational Culture and Leadership: Transforms the abstract concept of culture into a tool that can be used to better shape the dynamics of organization and change. This updated edition focuses on today's business realities. Edgar Schein draws on a wide range of contemporary research to redefine culture and demonstrate the crucial role leaders play in successfully applying the principles of culture to achieve their organizational goals.

OL 5143: Law and Ethics in Educational Leadership: Detailed study of The Importance of Ethical and Legal Decision Making, Legal Bodies Governing Education, Education, Religion, and Community Values, Student Privacy and First Amendment Rights, Due Process and Safe Schools, Student Search, Equal Protection, Children with Disabilities, Tort Liability, Teacher Employment, Supervision, and Collective Bargaining, Teacher Constitutional Law, Computers and the Internet Law, Ethics, and Educational Leadership: Making the Connection

OL 5144: Theory and Practice of Organizational Leadership: Leadership theory spans academic disciplines and draws as much from artistry of relationships as it does from writings and reflections of leadership as an applied science. Students of leadership gain as much from the experiences of others, as they do from studies of attributes of successful leaders and organizations. This course will examine contemporary leadership theory and its applications in current organizational settings. This course is designed to incorporate the Learner's

experiences and observations regarding leadership from their personal and professional experiences and current work setting.

OL 5145: Executive Coaching: Executive coaching is vital for developing talent in organizations today. Despite the recognized promise that executive coaching holds as a powerful means for leadership development, gaps remain in what we know about the science and practice of coaching. This volume provides a comprehensive resource for those addressing the most critical issues impacting the future of leadership coaching as an organizational development initiative.

OL 5146: Organizational Development: Survey of methodological approaches to planned change, including organizational diagnosis, data collection, interventions, feedback, and evaluation. Specific types of interventions covered include strategic planning, organizational design, culture change, team building, survey feedback, goal setting, and career development.

OL 6140: Human Resource Management And Development: Examines methods that organizations use to meet organizational goals through influencing worker attitudes, behaviors, and performance. Topics include recruitment, selection, training, performance appraisal, and compensation.

OL 6141: Organizational Development: Survey of methodological approaches to planned change, including organizational diagnosis, data collection, interventions, feedback, and evaluation. Specific types of interventions covered include strategic planning, organizational design, culture change, team building, survey feedback, goal setting, and career development.

OL 6142: Innovation and Change: To be an effective leader demands an understanding of the basic principles and practices underlying innovation and change processes in organizations. Learners will explore various change theories, and best practices for successful implementation in their workplace. Issues of visioning, coalition building, creating and promoting change agenda, and the Learners examine building capacity for change. Opportunity to investigate one's personal reaction and response to change is highlighted.

OL 6143: Conflict Resolution and Mediation: Dealing with conflict is an inevitable part of any leader's role. Timely and relevant, this course examines conflict management processes and skills with emphasis on interaction patterns, interpersonal relationships, and communication skills. Learners will examine the nature of conflict - its origins, sources, and types - as well as the concepts and skills of proactive intervention, conflict resolution and utilizing various conflict resolution strategies in organizational settings, it also issues such as dealing with diversity and ethical issues in multiple contexts, fostering creativity in problem solving and process design, and strategy and skills for successful mediation will be examined. Theory, structure, and practice of collaborative negotiation and mediated negotiations and application of the skills used to prevent and resolve conflict are emphasized.

OL 6144: Building Organizational Capacity: There are numerous definitions and usages for the phrase, "capacity building" in the education and leadership literature. For the purpose of this course, the term, "building organizational capacity," will be used to describe a parallel "universe," where both the Learner's capacity AND the organization's capacity must be developed to achieve the organization's mission and goals. When demand exceeds personal capacity, it is impossible to tap into personal talents and skills to help the organization. Personal and professional performance, health, and potential success are all compromised. The critical element for high performance at work and effectiveness in life requires sufficient capacity. A

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OL 6149: Executive Leadership in Nonprofit Organizations: Covers Understanding This Big Job, Developing as an Executive Director, Finding Balance in the Role of Executive Director, Understanding Nonprofit Organizational Culture, Embracing Your Organization's Values, Creating a Vision and Plan, Determining Organizational Effectiveness, Embracing a Changing Nonprofit Environment, Understanding Changing Life Cycle Stages in Nonprofits, Leading Organizational Change, Nurturing a Relationship with the Board, Developing Relationships with Individual Board Members, Establishing Productive Staff Relationships, Following the Founder, Engaging External Stakeholders, Embracing Partnerships and Collaboration, Ensuring Sound Financial Management, Sustaining the Organization with Team-

Based Fundraising, Planning for Healthy Transitions of Leadership and Moving On: Making Your Own Career Transition.

12.04.07 - Teacher Leadership:

TL 5140: Teachers as Servant Leaders: Provide pre-service teachers and those currently in the profession with a renewed perspective of being not just content experts or classroom/behavioral managers, but leaders within their own classrooms, school buildings, and local communities. Building on servant leadership: A journey into the nature of legitimate power and greatness by Robert Greenleaf, this course applies the concept of servant leadership to the classroom teacher where the focus is on services to students, parents, colleagues, the school, and Community.

TL 5141: Teacher as a Change Agent: Explores what parents, teachers, and employers must do to develop the capacities of young people to become innovators in their lives nurtured their creativity and sparked their imaginations, while teaching them to learn from failures and persevere; Identifies a pattern-a childhood of creative play leads to deep-seated interests, which in adolescence and adulthood blossom into a deeper purpose for career and life goals. Play, passion, and purpose: These are the forces that drive young innovators.

TL 5142: Teaching Management: Describe the fundamental elements in every learning situation, allowing students to adapt the suggestions to their particular teaching context. It sparks reflection on what we do in the classroom, why we do it, and how it might be done more effectively.

TL 5143: Standards and Practice of Teacher Leadership: Plans and strategies for exceeding state and Common Core Standards, cohesive principles and common language that strengthen professional collaboration, classroom vignettes that show teachers and kids at work, reading, writing, math, science, and social studies that support unified instructional goals, special attention to technology in the classroom, special education, ELLs, struggling readers, and the arts.

TL 5144: Teacher Leadership Technology: Presents research on the practical applications of technology in learning environments, assisting both educators and researchers in the quest to optimize and revolutionize educational practices. Experience-based scenarios and solutions allow readers to investigate and benefit from best practices in the design and development of online environments for both students and professionals.

TL 5145: Teacher as a Mentor: Demonstrate how to build effective, active teacher mentoring programs from helping new teachers implement active classroom principles to creating a school-wide climate for mentoring.

TL 5146: Innovation and Change: To be an effective leader demands an understanding of the basic principles and practices underlying innovation and change processes in organizations. Learners will explore various change theories, and best practices for successful implementation in their workplace. Issues of visioning, coalition building, creating and promoting change agenda, and the Learners examine building capacity for change. Opportunity to investigate one's personal reaction and response to change is highlighted.

TL 6140: Executive Coaching: Executive coaching is vital for developing talent in organizations today. Despite the recognized promise that executive coaching holds as a powerful means for leadership development, gaps remain in what we know about the science and practice of coaching. This volume provides a comprehensive resource for those addressing the most critical issues impacting the future of leadership coaching as an organizational development initiative.

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TL 6148: Teacher's Role in Implementing Cooperative Learning: Provides a comprehensive overview of the challenges and issues with clear guidelines on how teachers can embed cooperative learning into their classroom curricula to obtain the benefits widely attributed to this pedagogical practice with an overview of the major research and theoretical perspectives that underpin the development of cooperative learning pedagogy and outlines how specific small group experiences can promote thinking and learning; discusses the key role teachers play in promoting student discourse; and, demonstrates how interaction style among students and teachers is crucial in facilitating discussion and learning.

TL 6149: Educational Leadership and Planning for Technology: provides educators with both the theoretical and the practical considerations for planning and implementing technology in today's schools, with an emphasis on the total application of technology including both administrative and instructional uses. Designed for pre-service and in-service educators such as administrators, teachers, technology coordinators, and media specialists, this fifth edition text builds a strong foundation from which educators may provide informed leadership and become agents for realizing the powerful potential of technology in their schools.

12.05 - Psychology and Behavioral Science:

12.05.01 - Health Psychology and Behavioral Medicine:

HBM 5120: Research Methods for the Behavioral Sciences: Principles and methods for evaluating, planning, and carrying out psychological research, Non-experimental, quasi-experimental, experimental designs for research in experimental and applied areas of psychology.

HBM 5121: Psychopharmacology: Provides an overview of contemporary, theoretical, clinical and research issues in psychopathology and abnormal behavior. Emphasis will be on experimental and conceptual analysis of mental disorders as described in the DSM-IV.

HBM 5122: Group Therapy: Focuses on the basic issues and key concepts of group processes and the application of these concepts in a variety of group settings.

HBM 5123: Trance-work: Practice of Clinical Hypnosis: Offers a practical framework of ways to structure suggestions, pattern communications and induce trance. The most recent innovations and research in the field will be presented and a variety of approaches are synthesized into a comprehensive approach to the practice of clinical hypnosis.

HBM 5124: Posttraumatic Stress Disorder: Presents the latest scientific information and clinical challenges regarding posttraumatic stress disorder (PTSD) as well as acute reactions to stressful events and explicitly addresses diagnostic, including differential diagnostic, and assessment issues.

HBM 5140: Psychology of Chronic Illness: Provides a better understanding of manifestations of common chronic illnesses, disabilities, the impact that chronic illness and disability on all aspects of clients' lives in order to help them build and strengthen personal resources to achieve optimal functioning and full inclusion and participation in all aspects of their life. Discussions include symptoms, diagnoses, treatments, and prognoses.

HBM 5141: Behavioral Medicine I: Behavior is a primary determinant of death and disease. Emerging Research considers theories of how psychological factors, behavior, and physiological processes can interact to produce both positive and negative health and emotional states. The following topics are included: issues, assessment techniques, psycho-neuro-immunology, environmental toxicology, nutrient deficiencies, and personality factors (e.g. addictive personality).

HBM 5142: Behavioral Medicine II: A number of non-pharmacological interventions available today that can contribute to a person's state of behavioral, emotional, and physical health. Interventions can include those of ecological classification such as nutritional state, food and chemical sensitivities, and natural phenomena, as well as those addressing behavioral issues such as reinforcement history, personality traits, and physiological responsiveness. Also included will be topics on behavioral interventions, EEG/biofeedback, neurolinguistic programming, workplace wellness, cessation programs, and issues of compliance.

HBM 5143: Essentials of Pain Management: A concise, evidence-based course contains essential pain management, both acute and chronic pain management principles and techniques are discussed, while numerous case vignettes help reinforce basic concepts and improve clinical decision making. Throughout, a multidisciplinary approach to pain is stressed.

Behavioral and physical therapies, plus ethical considerations, are also discussed in this indispensable guide for anyone involved in the management of pain.

HBM 5144: Psychopharmacology: Provides an overview of contemporary, theoretical, clinical and research issues in psychopathology and abnormal behavior. Emphasis will be on experimental and conceptual analysis of mental disorders as described in the DSM-IV.

HBM 5145: Positive Psychology: Focuses on the positive psychology principles of positive subjective experience, positive traits, and positive institutions. It is an emerging shift within the field of psychology. The emphasis includes a scientific investigation of the latest research of positive psychology focusing on positive human strengths such as optimism, gratitude, hope, and justice. The course offers an opportunity for theoretical exploration and practical application.

HBM 5146: Physiological Psychology: Study of the relations between psychological manipulations and resulting physiological responses to promote understanding of mind/body interaction; examine psycho-physiological measurement methods, research, and the application of psychophysiology.

HBM 5147: Health Care Grants: Introduces the methods and means of acquiring a public or private sector health care grant.

HBM 5148: Essentials Of Managed Health Care: Prepares learner to assume roles in the management dimension of HMO's/PPO's in the private-for-profit/not-for-profit and publicly-sponsored HMO's.

HBM 5149: Comparative Health Care Systems: The comparison of major health care systems, their measurement and effects are studied. The focus is on the health care systems in Canada, United States, Japan, Russia, Cuba, China, England, and Sweden.

HBM 5150: Assessment And Planning In Health Programs: Analyzes the strengths, weaknesses, and future potential for survival of health care corporations preparing for the new millennium. Strategic planning is the ongoing corporate process which allows such organizations to wisely grasp the opportunities of the future.

HBM 5151: Health Psychology/Behavioral Medicine Practicum: Provides the opportunity for learners to experience the direct application of theory and techniques of psychology in supervised professional settings.

HBM 6140: Advances in Psychology Research: Presents original research results on the leading edge of psychology, in an attempt to present substantial results across a broad spectrum and reviews research on the empirical status of cognitive models in social anxiety; critical variables in cognitive-behavioral therapy for pediatric and adult obsessive-compulsive disorders; the impact of overseas working on family members; and treatment trial and long-term follow-up evaluation among co-morbid youth major depression and a cannabis use disorder.

HBM 6141: Psychology of Chronic Illness: Provides a better understanding of manifestations of common chronic illnesses, disabilities, the impact that chronic illness and disability on all aspects of clients' lives in order to help them build and strengthen personal resources to achieve optimal functioning and full inclusion and participation in all aspects of their life. Discussions include symptoms, diagnoses, treatments, and prognoses.

HBM 6142: Behavioral Medicine I: Behavior is a primary determinant of death and disease. Emerging Research considers theories of how psychological factors, behavior, and physiological processes can interact to produce both positive and negative health and emotional states. The following topics are included: issues, assessment techniques, psycho-neuro-immunology, environmental toxicology, nutrient deficiencies, and personality factors (e.g. addictive personality).

HBM 6143: Behavioral Medicine II: A number of non-pharmacological interventions available today that can contribute to a person's state of behavioral, emotional, and physical health. Interventions can include those of ecological classification such as nutritional state, food and chemical sensitivities, and natural phenomena, as well as those addressing behavioral issues such as reinforcement history, personality traits, and physiological responsiveness. Also included will be topics on behavioral interventions, EEG/biofeedback, neurolinguistic programming, workplace wellness, cessation programs, and issues of compliance.

HBM 6144: Pain Management: Chronic pain can render an otherwise productive life unbearable. This course will study the etiology of pain and its control through both pharmacological agents and non-pharmacological interventions.

HBM 6145: Psychopharmacology: Provides an overview of contemporary, theoretical, clinical and research issues in psychopathology and abnormal behavior. Emphasis will be on experimental and conceptual analysis of mental disorders as described in the DSM-IV.

HBM 6146: Physiological Psychology: Study of the relations between psychological manipulations and resulting physiological responses to promote understanding of mind/body interaction; examine psycho-physiological measurement methods, research, and the application of psychophysiology.

HBM 6147: Counseling Theory and Practice: Provides a step-by-step approach to developing an effective consulting practice in mental health, training, and organizational settings.

HBM 6148: Health Psychology/Behavioral Medicine Practicum: Provides the opportunity for learners to experience the direct application of theory and techniques of psychology in supervised professional settings.

HBM 6149: Applied Health Psychology/Behavioral Medicine Project: Allows the graduate learner to study the practical application of Health Psychology/Behavioral Medicine Psychology principles and practices and to document the results of this course study in a formal project report. (1-5 credits) Note: Proposed topic of independent study must be pre-approved by Learner's faculty mentor and academic advisor.

12.05.02 - Industrial/Organizational Psychology:

IOP 5008: Survey Research: This course provides an in-depth understanding of the survey research process as it is used in psychological, educational and social science research. This includes development of research questions and hypotheses, sampling, questionnaire design, survey administration, data processing and analysis.

IOP 5140: Organizational Behavior and Management: Behavioral theories of the organization are inherent in the operation of all organizations. Behavior of individuals and groups in organizations serve to determine the organizational climate and health. This course examines the nature of the behavior of organizations.

IOP 5141: Work Motivation and Attitudes: Analysis and application of motivational theories and principles to individuals and groups in the workplace. Evaluation of the theory and application of various programs and techniques tried previously, including job enrichment, participative management, improved supervision, compensation systems, goal setting, and management by objectives, reinforcement, and leadership development and influence techniques.

IOP 5142: Organizational Development: Survey of methodological approaches to planned change, including organizational diagnosis, data collection, interventions, feedback, and evaluation. Specific types of interventions covered include strategic planning, organizational design, culture change, team building, survey feedback, goal setting, and career development.

IOP 5143: Conflict and Negotiation: The goals of this course are: to review the history of negotiation research in psychology, to identify the major findings and conclusions, and to apply them directly to negotiation situations that will be conducted. There is a heavy focus on participation in this class, and students should be prepared to develop their practical negotiation skills through engaging in negotiation exercises both inside and outside of class.

IOP 5144: Psychology of Decision Making: Exploration of the psychological processes that underlie people's judgments and decision making. First identifies some general rules that capture the way people make decisions. Then explores how people make decisions in numerous domains, including consumer, social, clinical, managerial, and organizational decision making. Looks at both rational and irrational patterns in the way people select options. It discusses the impact of the media on our choices. Also examines how different ways of presenting options and different decision-making strategies can influence decision outcomes. In general, emphasizes the applied implications of the various perspectives on decision making.

IOP 5145: Executive Coaching and Development: Executive Coaching is an advanced elective on theories, methods, and techniques of coaching executives for leadership development and management effectiveness. The organization benefits from the leadership development gained from coaching executives in terms of: accelerated delivery of strategic objectives; developing greater organizational resilience in response to change; and improving quality of work life. Coaching is a tailored learning program for behavioral change and optimized performance. Coaching differs from other types of training programs because of the individualized relationship established between the client and coach over an extended time frame. The course examines coaching engagement processes, how assessment is used, feedback mechanisms, and techniques for counseling for enhanced performance. Although the focus of the course will be on individual coaching, applications to team development will be included. The course includes lectures, guest lectures, and a mentoring assignment in which coaching skills can be practiced. Learning coaching skills is useful for management and leadership roles more generally.

IOP 5146: Industrial Organizational Psychology: The psychology of work and organizations; Introduction to the use and application of psychology in the workplace. Focus is on the development of employees and organizational structure, and social behavior including the management of work groups and organizations.

IOP 5147: Industrial / Organizational Psychology Practicum: Provides the opportunity for learners to experience the direct application of theory and techniques of psychology in supervised professional settings.

IOP 6140: Psychological Tests and Measurements: Introduces the Learner to psychological test construction, administration and interpretation as well as current research in the area. Commonly used tests to assess cognition and personality will be studied.

IOP 6141: Organizational Industrial Psychology: Introduces organizations as psycho-social systems with values, norms and behavioral dynamics.

IOP 6142: Survey Research: This course provides an in-depth understanding of the survey research process as it is used in psychological, educational and social science research. This includes development of research questions and hypotheses, sampling, questionnaire design, survey administration, data processing and analysis.

IOP 6143: Organizational Behavior and Management: Behavioral theories of the organization are inherent in the operation of all organizations. Behavior of individuals and groups in organizations serve to determine the organizational climate and health. This course examines the nature of the behavior of organizations.

IOP 6144: Family Therapy: Concepts and Methods: In the field of mental health today, there is a rising demand for the utilization of effective short-term therapy. This course offers an overview of brief therapy roots and demonstrates techniques common to all brief therapy models.

IOP 6145: Applied Statistics: Provides instruction on the calculation, use, and interpretation of descriptive and inferential statistics. Emphasis is placed on the application and interpretation of statistical tests in conducting research at the graduate level. This course introduces inferential statistics and its application to research design. Current SPSS software will be utilized. Both parametric and non-parametric approaches to the analysis of data will be discussed.

IOP 6146: Organizational Industrial Psychology: Introduces organizations as psycho-social systems with values, norms and behavioral dynamics.

IOP 6147: Multivariate Statistics: The central theme of the course is the general linear model, and statistical methods include multivariate hypothesis testing, principal components analysis, factor analysis, discriminate analysis, canonical correlation analysis, and multivariate analysis of variance and covariance. The course covers theoretical, computational, and interpretive issues of multivariate techniques using computer solutions.

IOP 6148: Applied I/O Psychology Project: Requires the Learner to conduct a research study in the area of Industrial/Organizational Psychology and to document the results in a formal research project report. Note: Individual topic areas are to be submitted and approved by the Learner's advisor and faculty mentor.

IOP 6149: Industrial / Organizational Psychology Practicum: Provides the opportunity for learners to experience the direct application of theory and techniques of psychology in supervised professional settings.

12.05.03 - Marriage and Family Therapy

MFT 5140: Human Communication: Develops an understanding of the process of communication and interviewing skills required of the helping professional.

MFT 5141: Positive Psychology: Focuses on the positive psychology principles of positive subjective experience, positive traits, and positive institutions. It is an emerging shift within the field of psychology. The emphasis includes a scientific investigation of the latest research of positive psychology focusing on positive human strengths such as optimism, gratitude, hope, and justice. The course offers an opportunity for theoretical exploration and practical application.

MFT 5142: Brief Marriage and Family Therapy: Brief Marriage and Family Therapy - In the field of mental health today, there is a rising demand for the utilization of effective short-term therapy. This course offers an overview of brief therapy roots and demonstrates techniques common to all brief therapy models.

MFT 5143: Advanced Techniques for Counseling and Psychotherapy: A comprehensive, in-depth exploration of the origins, contemporary developments, and applications to practice related to each major counseling theory that is complete with useful learning aids, instructions for ongoing assessment, and valuable case studies—all designed to facilitate comprehension and lead to effective, ethical practice.

MFT 5144: Couples Therapy: Exploration of the sociology and intervention theories of marital and related interventions for dealing with a variety of couples, marital and divorce issues, e.g. dual career, multicultural/multinational, domestic violence, chemical dependency, human sexuality, remarriage, etc. Course includes assessment and intervention of spouse and partner abuse.

MFT 5145: Therapy with Children and Adolescents: Provides an overview of issues and therapeutic methods relevant to the treatment of children and adolescents. Issues distinguishing working with youth as opposed to adults are examined, along with relevant legal and ethical concerns, assessment strategies, major theoretical approaches to treating children and adolescents, and treatment strategies for common forms of childhood psychopathology. Emphasis is placed on using therapeutic methods with established efficacy and on incorporating parents, family, and other contextual factors into treatment.

MFT 5146: Counseling Theories and Strategies: Covers an overview, survey and applications of the major psychological theories of therapy and points of view in current use.

MFT 5147: Family Systems Theories: Examines couple and family relationship systems, focuses on communication, structural, emotional and behavioral patterns, and assessment of normal and dysfunctional patterns.

MFT 5148: Family Therapy: Concepts and Methods: In the field of mental health today, there is a rising demand for the utilization of effective short-term therapy. This course offers an overview of brief therapy roots and demonstrates techniques common to all brief therapy models.

MFT 5149: Psychological Tests and Measurements: Introduces the Learner to psychological test construction, administration and interpretation as well as current research in the area. Commonly used tests to assess cognition and personality will be studied.

MFT 5150: Practicum I: Supervised clinical experience in marriage and family therapy; includes development of assessment and outcome evaluation skills.

MFT 5151: Practicum II: Supervised clinical experience in marriage and family therapy; includes development of assessment and outcome evaluation skills.

MFT 6140: Brief Marriage and Family Therapy: Brief Marriage and Family Therapy - In the field of mental health today, there is a rising demand for the utilization of effective short-term therapy. This course offers an overview of brief therapy roots and demonstrates techniques common to all brief therapy models.

MFT 6141: Advanced Techniques for Counseling and Psychotherapy: A comprehensive, in-depth exploration of the origins, contemporary developments, and applications to practice related to each major counseling theory that is complete with useful learning aids, instructions for ongoing assessment, and valuable case studies—all designed to facilitate comprehension and lead to effective, ethical practice.

MFT 6142: Couples Therapy: Exploration of the sociology and intervention theories of marital and related interventions for dealing with a variety of couples, marital and divorce issues, e.g. dual career, multicultural/multinational, domestic violence, chemical dependency, human sexuality, remarriage, etc. Course includes assessment and intervention of spouse and partner abuse.

MFT 6143: Therapy with Children and Adolescents: Provides and overview of issues and therapeutic methods relevant to the treatment of children and adolescents. Issues distinguishing working with youth as opposed to adults are examined, along with relevant legal and ethical concerns, assessment strategies, major theoretical approaches to treating children and adolescents, and treatment strategies for common forms of childhood psychopathology. Emphasis is placed on using therapeutic methods with established efficacy and on incorporating parents, family, and other contextual factors into treatment.

MFT 6144: Family Systems Theories: Examines couple and family relationship systems, focuses on communication, structural, emotional and behavioral patterns, and assessment of normal and dysfunctional patterns.

MFT 6145: Family Therapy: Concepts and Methods: In the field of mental health today, there is a rising demand for the utilization of effective short-term therapy. This course offers an overview of brief therapy roots and demonstrates techniques common to all brief therapy models.

MFT 6146: Abnormal Child Psychology: Provides the most authoritative, scholarly, and comprehensive coverage of accurate balance of developmental, clinical-diagnostic, and experimental approaches to child and adolescent psychopathology, tracing the developmental course of each disorder and showing how biological, psychological, and socio-cultural factors interact with a child's environment. Coverage includes the DSM-IV-TR and dimensional approaches to classification as well as evidence-based assessment and treatment, contemporary research, and the latest theories related to the predominantly inattentive ADHD subtype, early-onset and the developmental propensity model of conduct disorder, the triple vulnerability model of anxiety, the tripartite model in children, depression, and autism.

MFT 6147: Conducting Psychological Testing and Assessment: Carefully working through all the phases of assessment, including integrating, conceptualizing, test selection, administering, scoring, and report writing, Conducting Psychological Assessment provides clinicians with a step-by-step methodology for conducting skilled individual assessments, from beginning to end.

MFT 6148: Practicum I: Supervised clinical experience in marriage and family therapy; includes development of assessment and outcome evaluation skills.

MFT 6149: Practicum II: Supervised clinical experience in marriage and family therapy; includes development of assessment and outcome evaluation skills.

12.05.04 - Psychology

PSY 4006: Persuasion and Attitude Change: Human beings develop attitudes as a result of experience. Attitudes shape future behavior and impact perception. This course will explore how attitudes are identified, categorized and measured, and will examine many of the variables associated with changing established attitudes.

PSY 4008: Industrial Organizational Psychology: The psychology of work and organizations; Introduction to the use and application of psychology in the workplace; Focus is on the development of employees and organizational structure, and social behavior including the management of work groups and organizations.

PSY 4012: Social Psychology: Survey of social, cultural, and cognitive influences on individual and group behavior; Introduces attitude formation, social conformity, personal perception, aggression, cooperation, and interpersonal and intergroup relations.

PSY 4013: Judgment and Decision Making: Using examples from medicine, politics, law, business, and daily life, we review "descriptive" (psychological), "normative" (rational), and "prescriptive" (decision-engineering) theory. Topics include judgment, cognition, emotion, risk, uncertainty, optimization, heuristics, biases, morality, and applications.

PSY 4014: Environmental Psychology: Psychological effects of the physical environment and effects of human action on the socio-physical environment, including an examination of global environmental issues and ecologically-relevant behavior.

PSY 4020: Human Factors Psychology: Advanced concepts critical to the design of human-technological systems, such as capitalizing upon human capabilities and compensating for human limitations. Topics may include perceptual and motor abilities, human error and cognitive engineering.

PSY 4022: Human Performance: An overview of cognitive task analysis and process tracing methods used to examine human performance in complex socio-technical systems. Topics include knowledge elicitation, concept mapping, critical decision method, and protocol analysis.

PSY 4023: Cognitive Psychology: A systematic survey of classical and contemporary research topics in human information processing and learning. Topics include models of

cognition, perception/pattern recognition, attention, the nature of mental representation and processing; the architecture of memory, imagery, concepts, and prototypes; reasoning, decision making, problem solving, and cognitive development.

PSY 4024: Cognitive Neuroscience: Topics in the field of cognitive neuroscience, examining the neural basis of cognition. Topics may include perception, attention, memory and language.

PSY 4028: Learning and Memory: Theories of learning and memory from traditional animal research findings, human research, and more recent trends examining the neural basis of learning and memory will be examined to understand changes in behavior, including the acquisition and retention of knowledge.

PSY 4038: Psychology and Law: Application of psychological principles to legal concerns and the interaction of psychology and law. Topics include perception, memory, and decision-making processes as applied to eyewitnesses, identification and evaluation of suspects, jury trials, capital punishment, and other current topics.

PSY 4120: Introduction to Psychology: Introduction to the scientific study of psychological structures and processes involved in individual and group behavior. Explores theoretical accounts of the foundations of human behavior and examines empirical support. Topics may include personality, disorders, therapy, development, and social psychology, perception, learning, cognition, emotion, and states of consciousness.

PSY 4121: Theories and Techniques of Counseling and Psychotherapy: Major approaches used in contemporary counseling psychology, the current status of the profession, and ethical issues encountered will be examined to provide students with a broad understanding of the field. This course does not train students to be counselors.

PSY 4122: Behavior Modification: An introduction to techniques of behavior modification through the application of learning theories such as classical and operant conditioning. Students will conduct a case study project designed to modify a personal behavior.

PSY 4123: Developmental Psychology: A survey of human development across the life span (prenatal, infant, child, adolescent, and adult) in the areas of biological, cognitive, social, emotional, and personality development. It provides insight into both the universality of human development and the uniqueness of individuals.

PSY 4124: Psychology Tools and Technology: Psychology majors examine the field of psychology and major degree requirements resulting in an undergraduate plan of study focused on graduate school admission or career preparation. An introduction to the technological tools used within psychology, including hardware, software, and instrumentation.

PSY 4125: Psychology of Trauma: A comprehensive overview of the theoretical, clinical and research relevance of Posttraumatic Stress and associated disorders. Diagnostic clarification, etiology, psychotherapeutic interventions and treatment related issues will be addressed. The relationship to other DSM-IV-TR classifications, the legal and ethical controversies, and cultural phenomena surrounding trauma will be an important consideration.

PSY 4126: Experimental Methods & Statistics I: Introduction to experimental design, general research methodology, computer analysis and interpretation of data. It emphasizes

issues and methods involved in psychological research. Topics include experimental design and validity, choosing appropriate data analysis techniques, statistical analysis, and APA writing style.

PSY 4127: Experimental Methods & Statistics II: Second course in psychological research methodology and statistics, both experimental and non-experimental. Students design, execute, interpret, and report psychological research.

PSY 4130: Theories of Personality: Presents an overview of theories of personality development involving genetic, interpersonal, and environmental forces affecting human development, emphasizing personality theories as alternative orienting viewpoints.

PSY 4131: Abnormal Psychology: Helps the student build an understanding of abnormal behavior through critical examination of historical and contemporary models used in this field. The student learns the causes and treatment proposed by Cognitive-Behavioral, Psychodynamic and Social-cultural Models with particular emphasis placed on the Diagnostic and Statistical manual used by clinicians for diagnoses.

PSY 4132: History and Systems of Psychology: Traces major historical contributions to current psychology from ancient to modern times; Examines significant ideas and discoveries from philosophy, mathematics, and the natural and medical sciences as they relate to the development of psychology; Discusses philosophical, theoretical, and methodological controversies that surfaced as part of these historical developments.

PSY 4133: Physiological Psychology: Study of the relations between psychological manipulations and resulting physiological responses to promote understanding of mind/body interaction; examine psycho-physiological measurement methods, research, and the application of psychophysiology.

PSY 4134: Cross-Cultural Psychology: Introduces the student to cross cultural psychology and socio-cultural theory as it is applied to psychology; Examines research on cultural specific and universal behaviors; Emphasizes the benefits and challenges of diversity in organizations and diversity skills that promote interpersonal and organizational success.

PSY 4135: Directed Psychology Research: Directed research in the field of Psychology through the application of research techniques.

PSY 4136: Application of Treatment Models: An applied review of psychological treatment models, including their history, their strengths and weaknesses, and the fundamental concepts that support each model. Students will be required to apply one of the models in a direct practice format.

PSY 4140: Motivation and Emotion: Introduction to the theoretical, physiological, cognitive, and behavioral factors underlying the processes of motivated behaviors and emotional states. Emphasis is placed on methods for studying motivation and emotion and their role in human behavior.

PSY 5120: Human Behavior and the Social Environment: Introduces and incorporates current research on the biological, psychological, socio-cultural, and spiritual dimensions of human behavior throughout the life-cycle and provides an appropriate focus on contemporary perspectives that are central to the practice of social work, such as trauma, neurobiological

underpinnings of behavior, chronic illness and disability. Course pays particular attention to models of racial, ethnic, class, gender and gay, lesbian, bisexual and transgender identity development; to the influences of gender, sexual orientation, social class, race and culture on family structure and function, and to issues pertinent to a variety of "post-modern" family forms.

PSY 5121: Cognition, Emotion and Motivation: A comprehensive overview of the theory of human cognition and cognitive psychology. Issues to be presented and researched will include, but are not limited to, attention, imagery and memory, consciousness, schemata, cognitive maps, decision making and problem solving.

PSY 5122: Human Performance: An overview of cognitive task analyses and process tracing methods used to examine human performance in complex socio-technical systems. Topics include knowledge elicitation, concept mapping, critical decision method, and protocol analysis.

PSY 5123: Judgment and Decision Making: How can we make better decisions? Using examples from medicine, politics, law, business, and daily life, we review "descriptive" (psychological), "normative" (rational), and "prescriptive" (decision-engineering) theory. Topics include judgment, cognition, emotion, risk, uncertainty, optimization, heuristics, biases, morality, and applications.

PSY 5124: Advanced Statistical Analysis and Design: An overview of research ethics, experimental design, proposal writing, and invariant statistics such as t-tests and ANOVA.

PSY 5130: Counseling Theories and Strategies: Covers an overview, survey and applications of the major psychological theories of therapy and points of view in current use.

PSY 5131: Ethics in Counseling and Psychotherapy: Covers Professional Identity and Ethics, Awareness and Sensitivity to Ethical Issues, Cognitions and Reasoning/Hermeneutics, Client Autonomy and Client Rights, Dual Relationship, Counselor Competence, Diversity and Multicultural Competence, Use of Technology and Ethics, Supervision and Ethics, Ethical Use of Research in Counseling Practice, Professional Codes of Ethics and the Law, Western Theories of Ethics, Eastern Theories of Ethics, Middle Eastern Theories of Ethics and Native American, Latino and Pan African Ethics.

PSY 5132: Psychology of Learning: The aim of this course is to survey and interpret human learning using major theoretical perspectives. The course includes experiential knowledge in human learning and applications to teaching and counseling.

PSY 5133: Sensation and Perception: Examination of basic sensory mechanisms and perceptual phenomena. Sensory mechanisms reviewed will include vision, audition, olfaction, gestation, vestibular system and touch.

PSY 5134: Human Factors Psychology: Advanced concepts critical to the design of human-technological systems, such as capitalizing upon human capabilities and compensating for human limitations. Topics may include perceptual and motor abilities, human error and cognitive engineering.

PSY 6130: Positive Psychology: Focuses on the positive psychology principles of positive subjective experience, positive traits, and positive institutions. It is an emerging shift within the field of psychology. The emphasis includes a scientific investigation of the latest research of

positive psychology focusing on positive human strengths such as optimism, gratitude, hope, and justice. The course offers an opportunity for theoretical exploration and practical application.

PSY 6131: Social Psychology: Survey of social, cultural, and cognitive influences on individual and group behavior; Introduces attitude formation, social conformity, personal perception, aggression, cooperation, and interpersonal and intergroup relations.

PSY 6132: Dynamic Psychotherapy: Practical step-by-step introduction to the principles of dynamic psychotherapy to teach students more about dynamic psychotherapy, the emphasis is on the practical rather than the theoretical. The book opens with a description of the steps involved in conducting insight-oriented psychotherapy, then moves on to the modifications required for time-limited therapy, supportive and management techniques, and the combination or augmentation of psychotherapy with medications. Included are such topics as the significance of different patient-referral sources, recommendations on how to set up the initial appointment, and practical issues like the arrangement of office furniture and professional fees.

PSY 6133: Personality Theories: Presents an overview of theories of personality development involving genetic, interpersonal, and environmental forces affecting human development, emphasizing personality theories as alternative orienting viewpoints.

PSY 6134: Research Methods for the Behavioral Sciences: Principles and methods for evaluating, planning, and carrying out psychological research, Non-experimental, quasi-experimental, and experimental designs for research in experimental and applied areas of psychology.

PSY 6140: Multicultural Psychology: Combines quantitative and qualitative research with anecdotal material to examine an array of multicultural issues and capture the richness of diverse cultures, and focuses on such compelling topics as differences in worldviews, communication, racial and cultural identity development, racism, and immigration. It also covers other issues including gender, sexuality, age, and ability.

PSY 6141: The Psychology of Learning and Motivation: Ecological Validity and the Study of Concepts, Social Embodiment, The Body's Contribution to Language, Using Spatial Language, In Opposition to Inhibition, Evolution of Human Cognitive, Architecture, Cognitive Plasticity and Aging, Index, Contents of Previous Volumes

PSY 6142: Cognitive Psychology: A systematic survey of classical and contemporary research topics in human information processing and learning. Topics include models of cognition, perception/pattern recognition, attention, the nature of mental representation and processing; the architecture of memory, imagery, concepts, and prototypes; reasoning, decision making, problem solving, and cognitive development.

PSY 6143: Psychology of Attitudes and Attitude Changes: Review and integrate some of the most recent, cutting-edge developments in research on attitudes and attitude change, presenting the work of eminent scholars in this field and deals with such intriguing questions as: What role do associative processes play in the formation of attitudes? How do attitudes function as global and local action guides? What is the function of implicit evaluations, and vicarious experiences in producing attitude change? Are implicit associations a useful way to measure attitudes? What role does affect play in attitude formation and change? What role do social interaction processes play in persuasion, and how does persuasion work in real-life settings?

PSY 6144: Sensation and Perception: Explains that he and his colleagues sought to convey their enthusiasm for the field by offering chapters telling coherent, interesting stories. The colorfully-illustrated chapters cover early philosophers' views on perception to current research- based understanding of neurobiological, genetic, and social factors in normal and impaired sensory perception.

PSY 6145: Psychology of Gender: Explores perspectives on gender differences based on biological predispositions, social environmental influences and the interaction between them.

PSY 6146: Positive Psychology Coaching: An Introduction to Applying Positive Psychology Coaching, using Your Best to Make You Better, Harnessing Positivity, Making Molehills out of Mountains: Coaching Goals and Hope for the Future, Positive Diagnosis, Positive Assessment, Gray Hairs and Gravestones: Positive Psychology Coaching Across the Lifespan, and The Practice of Positive Psychology Coaching.

PSY 6147: School Psychological Consultation: shows in expert detail how this relationship works by synthesizing mental health and behavioral models of consultation with the most effective evidence-based practices (e.g., implementation support, response to intervention) informing the field today. And provide real-world contexts for all participants in the equation—consultants, teachers, students, staff, and the school itself—and thoroughly review consultation processes and outcomes for a contemporary practice-oriented approach suited to the new consultant, trainee, or researcher.

PSY 6148: Adult Development and Aging: Focuses on "successful aging" and how to accomplish it and combining research and applied perspectives, it is evenly balanced between biological, social, cognitive, and personality theory as it relates to adulthood an aging and takes the bio-psychosocial perspective that is gaining ascendency in psychology as a whole and applies it to the years of adulthood and old age.

PSY 6149: Applied Psychology Project: Allows the graduate learner to study the practical application of Psychology principles and practices and to document the results of this course study in a formal project report. (1-5 credits) Note: Proposed topic of independent study must be pre-approved by Learner's faculty mentor and academic advisor

12.06 – Sciences:

12.06.01 - Medical Informatics:

MI 5120: Introduction to Medical Informatics: Course covers fundamental subjects such as medical decision support systems, telemedicine, medical ethics and biostatistics. Topics include consumer health informatics, international health care systems, global health informatics, translational research informatics and homecare. Students will see medical informatics from diverse perspectives. Scientific writing and communication will be encouraged.

MI 5121: Essentials of Health Information Management: Focuses on the description of health care delivery and contents of medical records, provides skills and professional training at the field of Health Information Technology, hands on familiarity with health care facilities settings, with a comprehensive study of automated health and medical information systems, and detailed study of health information at ambulatory services, diagnostic departments and inpatient floors. It also provides hands on training on numbering, coding, medical abstract and records analysis and medical auditing.

MI 5122: Introduction to Medical Sciences and Human Pathophysiology: Course provides basic concepts in medicine and Human Pathophysiology to introduce a molecular understanding of human metabolism and disease. Topics also include physical examination of patient, taking medical history, laboratory medicine, disease management and treatment, medical diagnostics, clinical workflow, and medical special/subspecialties.

MI 5123: Human Anatomy: Detailed illustrated Study of Human Body's Systems including enfant, male an d female bodies

MI 5124: Physiology: covers closed study of human body systems functions, functional disorders with full study of organs behavior and effect to other systems, functional illness and causes of death

MI 5130: Medical Terminology: Systematic study of medical terminology from the basis up to professional skills understanding compound medical terms.

MI 5131: ICD 9 CM: Hands on coverage of the international coding of diseases, procedures and causes of death using clinically modified coding reference both manual and automated

MI 5132: Lean Six-Sigma: includes enhancing customer satisfaction; maintaining a safe, clean, and organized workplace; utilizing an effective logistics, scheduling, and shipping system; deploying facilities, raw materials, and technology effectively; managing incoming, work-in-process, and finished goods inventory levels; employing and motivating talented people; and maintaining equipment and facilities; all while providing a quality product or service that customers desire. A leader's ability to manage in a complex environment is crucial to their organization's success. Quality, productivity,

MI 5133: Data Mining And Medical Knowledge Management: presents case studies on applications of various modern data mining methods in several important areas of medicine, covering classical data mining methods, elaborated approaches related to mining in

electroencephalogram and electrocardiogram data, and methods related to mining in genetic data. A premier resource for those involved in data mining and medical knowledge management, this book tackles ethical issues related to cost-sensitive learning in medicine and produces theoretical contributions concerning general problems of data, information and knowledge.

MI 5134: Health Care Politics, Policy and Services: Presents an overview of the factors which govern and affect the development of health care policy in America.

MI 5140: Security and Privacy: Examines key health information security, policy, and procedures. It investigates how to distinguish elements of a security audit and key security policies. Analyzes the roles of people maintaining health information security and explains elements of these roles within the organization.

MI 5141: Clinical Decision Support and Improving Healthcare: Course addresses complex medical decisions, evidence-based medicine, disease management and comprehensive laboratory informatics. Topics include improving physical order entry and healthcare, using medical literature, clinical case discussions, meaningful use of medical data, enhancing patient and care-giver education, disease prevention, and public health and environmental health informatics.

MI 5142: Data Warehousing and Business intelligence: Identifies database solutions and key elements of an enterprise data warehouse. It explains how to apply best practices for development of data warehouses, the role of business intelligence and data mining in supporting the strategic business decision process, and OLAP (Online Analytical Processing) and its use in reporting and analyzing database and data warehouse information and defines security practices for a data warehouse environment.

MI 5143: Statistical Methods for Intrusion Detection: An introduction to the data and methodologies of computer intrusion detection. It focuses on statistical and machine learning approaches to detection of attacks on computers. Topics include network monitoring and analysis, network-based attacks such as probes and denial of service, host-based attacks such as buffer overflows and race conditions, and malicious code such as viruses and worms. Statistical pattern recognition methods will be described for the detection and classification of attacks.

MI 5144: Designing Security Systems: Provides an overview of techniques used in the design of secure systems with a primary focus on real-world case studies. Students will examine attacks on deployed systems and investigate how these vulnerabilities have been addressed. Practical advantages and shortcomings of several notions of provable security will also be examined. Students will be expected to read, understand, and present recent research papers.

MI 5145: Healthcare Security Management: Addresses information security in the public health and medical fields, with special emphasis on clinical care, research, and the role of the academic medical center. Also focuses on disaster recovery and response, anonymization of records, billing, and communication of public health information to EHRs, along with physical and administrative security.

MI 5146: Health Care Ethics: Examines the legal and ethical issues affecting health care delivery in America including abortion, organ donation and transplantation, termination of life

support, rights of the terminally ill and consent issues, state and federal regulation, and patient and provider relationship.

MI 6132: Tools of Bioinformatics: Computer applications in molecular biology. Hands-on experience with using popular computer programs for DNA, RNA and protein sequence analysis, database management, data editing, assembly, and organization, multiple sequence comparisons, protein structural analysis, evolutionary relationships of genes, use of Internet for data retrieval, comparison and analysis.

MI 6133: Biometeorology: Studies the quantitative exchange of radiation, heat, mass and momentum between the atmosphere, vegetation, and soils with an emphasis on forest processes. Other topics include the physical and biological controls of water vapor exchange and carbon dioxide exchange, models of stand-scale evaporation, transpiration, photosynthesis and respiration.

MI 6134: Ethical, Legal and Social Issues in Biotechnology: Covers Ethics and concepts of dealing with Biological data and medical information including gene detailing and controls of information handling and release.

MI 6140: Bioinformatics: Presents mathematical models in bioinformatics and describes the biological problems that inspire the computer science tools used to handle the enormous data sets involved and covers the mathematical and computational methods, the practical applications, and mathematical presentation, with emphasis on motivation through biological problems and cross applications.

MI 6141: Fundamentals of Healthcare Programming: Demonstrates that biomedical professionals with fundamental programming knowledge can master any kind of data collection and provides access to data, nomenclatures, and programming scripts and languages that are all free and publicly available. Describes the structure of data sources used, with instructions for downloading, Includes a clearly written explanation of each algorithm, Offers equivalent scripts in Perl, Python, and Ruby, for each algorithm, Shows how to write short, quickly learned scripts, using a minimal selection of commands, Teaches basic informatics methods for retrieving, organizing, merging, and analyzing data sources, Provides case studies that detail the kinds of questions that biomedical scientists can ask and answer with public data and an open source programming language, Requiring no more than a working knowledge of Perl, Python, or Ruby, this subject will have students writing powerful programs in just a few minutes. Within the course, students will find descriptions of the basic methods and implementations needed to complete many of the projects they will encounter in their biomedical career.

MI 6142: Informatics in Medical Imaging: This course provides a comprehensive survey of the field of medical imaging informatics. In addition to radiology, it also addresses other specialties such as pathology, cardiology, dermatology, and surgery, which have adopted the use of digital images. The course discusses basic imaging informatics protocols, picture archiving and communication systems, and the electronic medical record. It details key instrumentation and data mining technologies used in medical imaging informatics as well as practical operational issues, such as procurement, maintenance, Tele-radiology, and ethics.

MI 6143: Probabilistic Modeling in Medical Informatics: Provides a self-contained introduction to the methodology of Bayesian networks, demonstrates how these methods are applied in bioinformatics and medical informatics with an introduction, tutorials, advanced

applications and case studies to the methodology of probabilistic modeling, bioinformatics, and medical informatics.

MI 6144: Clinical Information Systems: Covers The Evolution of Health Information Systems; Frameworks: A Collection of Business Objects; Frameworks: A Collaboration of Objects; The Patient Component; The Act Component; The Medical Record Component; The Knowledge Components; The Resource Management Component; The Security Component and Imaging Management and Integration.

MI 6145: Health Information Technology & Management: Provides a comprehensive understanding of the history, theory, and potential benefits of health information management systems, this course helps students understand the connectivity and applications that make up the health information systems of today and of tomorrow. Focuses on the contents of patient's medical record, automated systems, filing systems, health data mining, digital retrieval, international coding, and medical abstract.

MI 6146: Comparative Health Information Management: Covers health care practice and information management in a wide variety of settings, from free-standing and hospital-based ambulatory clinics to veterinary offices and correctional facilities, and the challenges associated with managing the information flow among various sites.

MI 6147: Medical Devices Design for Six-Sigma: Integrates concept and design methods such as Pugh Controlled Convergence approach, QFD methodology, parameter optimization techniques like Design of Experiment (DOE), Taguchi Robust Design method, Failure Mode and Effects Analysis (FMEA), Design for X, Multi-Level Hierarchical Design methodology, and Response Surface methodology, Covers contemporary and emerging design methods, including Axiomatic Design Principles, Theory of Inventive Problem Solving (TRIZ), and Tolerance Design, Provides a detailed, step-by-step implementation process for each DFSS tool included, Covers the structural, organizational, and technical deployment of DFSS within the medical device industry, Includes a DFSS case study describing the development of a new device and Presents a global prospective of medical device regulations

MI 6148: Essentials of Health Information Management: Focuses on the description of health care delivery and contents of medical records, provides skills and professional training at the field of Health Information Technology, hands on familiarity with health care facilities settings, with a comprehensive study of automated health and medical information systems, and detailed study of health information at ambulatory services, diagnostic departments and inpatient floors. It also provides hands on training on numbering, coding, medical abstract and records analysis and medical auditing.

MI 6149: Knowledge Management and Data Mining in Biomedicine: Mapping Medical Informatics Research.- Bioinformatics Challenges.- Medical Concept Representation.- Standards in Medical Informatics.- Information Retrieval and Digital Library.- Genomics Information Retrieval.- Managing Information Security and Privacy in Health Care.- Ethical and Social Challenges in Medical Informatics.- Characterizing Biomedical Concept Relationships.- Anatomic Images for the Public -3D Medical Informatics.- Medical Oncology .- Semantic Parsing and Knowledge Representation in Biomedicine.- Semantic Text Parsing for Patient Records.- Identification of Biological Relationships from Text Documents.- Creating, Modeling and Visualizing Metabolic Networks: FC Modeler and Path-Binder for Network Modeling and Creation.- Gene Pathway Text Mining and Visualization.- The Genomic Data Mine.- Exploratory

Genomic Data Analysis.- Joint Learning Using Data and Text Mining.- Disease Informatics and Outbreak Detection.

MI 6I30: Gene Expression Data Analysis: Students will learn statistical methods and skills for analyzing large-scale gene expression data resulting from high-throughput technologies, become familiar with various bioinformatics tools and resources, and develop useful working knowledge of how to analyze genetic data.

MI 6I31: Data Analysis and Graphics Using R: This course is designed to teach the essential skills for analyzing experimental data, and in particular, generating informative graphics that can be used directly in reports, theses, dissertations, and manuscripts.

12.06.02 - Nutritional Science:

NTR 5120: Food Biochemistry and Food Processing: Essential principles of food biochemistry, enzymology, and food processing, the course then discusses commodity-by-commodity of biochemistry of raw materials and product processing. Chapters in this second edition have been revised to include safety considerations and the chemical changes induced by processing in the bimolecular of the selected foodstuffs. This edition also includes a new section on health and functional foods, as well as ten new chapters including those on thermally and minimally processed foods, separation technology in food processing, and food allergens.

NTR 5121: Advanced Nutrition and Human Metabolism: Focuses on cells and A Microcosm of Life, The Digestive System, Mechanism for Nourishing the Body, MACRONUTRIENTS AND THEIR METABOLISM, Carbohydrates, Fiber, Lipids, Protein, Integration and Regulation of Metabolism and the Impact of Exercise and Sport, Body Composition, Energy Expenditure, and Energy Balance, THE REGULATORY NUTRIENTS, The Water-Soluble Vitamins, The Fat-Soluble Vitamins, Major Minerals, Water and Electrolytes, Essential Trace and Ultra-trace Minerals, Nonessential Trace and Ultra-trace Minerals.

NTR 5122: Statistical Methods and Variance Analysis: An introduction to the data and methodologies of computer intrusion detection. It focuses on statistical and machine learning approaches to detection of attacks on computers. Topics include network monitoring and analysis, network-based attacks such as probes and denial of service, host-based attacks such as buffer overflows and race conditions, and malicious code such as viruses and worms. Statistical pattern recognition methods will be described for the detection and classification of attacks.

NTR 5123: Experimental Design: Review of basic statistical concepts, models for testing significance of one or many factors, reducing experimental effort by incomplete blocks, and Latin squares. Factorial and fractional factorial designs and response surface analysis for optimal response.

NTR 5124: Group Therapy: Focuses on the basic issues and key concepts of group processes and the application of these concepts in a variety of group settings.

NTR 5130: Biostatistics: Covers Introduction to Biostatistics, Descriptive Statistics, Some Basic Probability Concepts, Probability Distributions, Some Important Sampling Distributions, Estimation, Hypothesis Testing, Analysis of Variance, Simple Linear Regression and

Correlation, Multiple Regression and Correlation, Regression Analysis: Some Additional Techniques, The Chi-Square Distribution and the Analysis of Frequencies, Nonparametric and Distribution-Free Statistics, and Survival Analysis

NTR 5131: Food Intake: Regulation, Assessing and Controlling: Presents current research in the regulation and control of food intake. Topics discussed include understanding food intake regulation in chicks; indigenous fermented foods and beverages produced in Latin America; regulation of food intake and its relation to age and body composition and food-borne carcinogens.

NTR 5132: Nutritional Education Theories and Practice: Provides a simple, straightforward model for designing effective nutrition education that addresses the personal and environmental influences that affect food choice and assists individuals in adopting healthy behaviors. Using a six-step process, this course integrates theory, research, and practice and provides advice on designing, implementing, and evaluating theory-based nutrition education.

NTR 5133: Metabolic Disorders: Focuses on the disorders of carbohydrate metabolism and the diseases of lipids metabolism, highlights the diseases of protein metabolism including different forms of disorders, discusses the diseases associated with nucleic acids metabolism, provides useful information on molecular genetics and various instrumental techniques used in a clinical diagnostic laboratory and presents An overview of respective macromolecules metabolism.

NTR 5134: Nutrition Research Methods: Aims to fill a critical gap in dietetics, nutrition and health education literature by providing a comprehensive guide to conducting research and understanding the research of others, teaches how researchers identified problems; how they framed those problems; and how they reported, interpreted and implemented their findings and covers an overview of the process, statistical and measurement concepts, types of research (including experimental, quasi-experimental, descriptive, and qualitative research), how to present results and computer techniques for data analysis.

NTR 5140: Laboratory Nutritional Assessment: Includes inflammatory biomarkers, biochemical assessment of malnutrition, hydration status, nutritional anemia, and specific information on more than 90 lab tests used for assessing nutrition-related conditions and comprehensive list of medications that may give false lab test results.

NTR 5141: Advanced Medical Nutrition Therapy: A comprehensive coverage of the relevant physiology, path-physiology, nutritional therapy and dietetic application for each specialist dietetic area, with coverage of all major specialist areas involved in the treatment of adults through clinical governance, including patient-centered care, clinical decision-making and developing evidence-based practice; in addition to focusing on advanced clinical practice describes several clinical conditions or dietetic areas in detail.

NTR 5142: Medical Nutrition Therapy: Building a bridge from classroom to clinical practice, this casebook is composed of 34 realistic case studies appropriate for introductory and advanced level courses in nutrition and diet therapy. Each case study uses the medical record as its structure. The student "solves the case" by using the information provided such as hospital admission data, laboratory test results, intake/output records, and the physician's progress notes.

NTR 5143: Food and Nutritional Toxicology: Provides a broad overview of the chemicals in food that have the potential to produce adverse health effects including the impact on human health of food containing environmental contaminants or natural toxicants, food additives, the migration of chemicals from packaging materials into foods, and the persistence of feed and food contaminants in food products. Classes address the adverse effects of nutrient excesses, the impact of contaminants on nutrient utilization, metabolism of food toxicants, and the relationship of the body's biologic defense mechanisms to such toxicants. Also, includes discussions on the risk determination process, food safety regulation, and the current status of the regulatory processes.

NTR 5144: Nutritional Epidemiology: Overview of Nutritional Epidemiology, Foods and Nutrients, Nature of Variation in Diet, 24-Hour Dietary Recall and Food Record Methods, Food Frequency Methods, Reproducibility and Validity of Food-Frequency Questionnaires, Recall of Remote Diet, Surrogate Sources of Dietary Information, Biochemical Indicators of Dietary Intake, Anthropometric Measures and Body Composition, Implications of Total Energy Intake for Epidemiologic Analysis, Correction for the Effects of Measurement Error, Issues in Analysis and Presentation of Dietary Data, Nutrition Monitoring and Surveillance, Vitamin A and Lung Cancer, Dietary Fat and Breast Cancer, Diet and Coronary Heart Disease, Folic Acid and Neural Tube Defects, Future Research Directions

NTR 5145: Molecular Biology/Genetics: Basic Chemical and Biological Principles including Cells and Organisms, Basic Genetics, DNA, RNA, and Protein, Genes, Genomes, and DNA, Manipulation of Nucleic Acids, The Genome, Polymerase Chain Reaction, Cloning Genes for Analysis, and DNA Sequencing, Genomics & Systems Biology. Central Dogma of Molecular Biology including Cell Division and DNA Replication, Transcription of Genes, Processing of RNA, Protein Synthesis, Protein Structure & Function, Proteomics and Global Analysis of Proteins. Regulate Gene Expression including Regulation of Transcription in Prokaryotes, Regulation of Transcription in Eukaryotes, Regulation at RNA Level, Analysis of Gene Expression, Sub-cellular Life Forms, Plasmids, Viruses and Mobile DNA. Changing the DNA Blueprint including Mutations and Repair, Recombination, Bacterial Genetics and Molecular Evolution

NTR 5146: Behavioral Group Therapy: Focuses on the basic issues and key concepts of group processes and the application of these concepts in a variety of group settings.

NTR 6130: Human Nutrition Science: Focuses on human nutrition, genetics, Nutritional status, Nutritional epidemiology, Basic nutrients, Alcohol, Vitamins, Water, electrolytes, minerals and trace elements, Agricultural chemicals, Eating and digestion, the metabolism of nutrients, Specific nutritional requirements, Dietary deficiency, and Nutrition in the etiology of diseases.

NTR 6131: General Biochemistry: Covers an Introduction to Biochemistry, History of Biochemistry, types of molecules, Discipline related to Biochemistry, Biochemical Reactions, Major types of Biochemical Reactions, Types of Chemical Groups, Carbohydrates, Lipids, Proteins, Nucleic Acids, Enzymes, Membranes, Fermentation and Fats, Hormones and Metabolic Disorder:

NTR 6132: Human Physiology: The Study of Body Function, Chemical Composition of the Body, Cell Structure and Genetic Control, Enzymes and Energy, Cell Respiration and Metabolism, Interactions Between Cells and the Extracellular Environment, The Nervous System: Neurons and Synapses, The Central Nervous System, The Autonomic Nervous System, Sensory Physiology, Endocrine Glands: Secretion and Action of Hormones, Muscle:

Mechanisms of Contraction and Neural Control, Blood, Heart and Circulation, Cardio Output, Blood Flow, and Blood Pressure, The Immune System, Respiratory Physiology, Physiology of the Kidneys, The Digestive System, Regulation of Metabolism and Reproduction

NTR 6133: Foundations of Public Health: Addresses major functions and issues surrounding public health service institutions, particularly within the context of a general administrative structure. A framework for developing a foundation and understanding of administrative, environmental, regulatory, financial and planning factors, which influence public health services, is established.

NTR 6134: Principles and Practices of Epidemiology: Presents the basic mathematical components, ethics, and study design options in epidemiology, as well as the primary types and sources of error in epidemiologic studies, in addition to covering key issues associated with solving public health problems including solid understanding of fundamental principles, the methodologies employed by epidemiologists and other public health professionals.

NTR 6140: Evaluation of Nutritional Status: Represents an intense research on constituents of food essential for normal growth and development and reveals the discovery of proteins, fats, carbohydrates, calcium, iron, thiamine, riboflavin, niacin, vitamin-c and energy and thus provides an opportunity in understanding the nutritional intake of the people.

NTR 6141: Genome Organization, Structure and Maintenance: about the role of the structure of chromatin, the organization of the genome, and the structure of the interphase nucleus in the control of gene expression in eukaryotes. The first section analyzes the relationship between gene expression and the dynamic chromatin structure at the nucleosome level. Section two looks into higher order chromatin structure in relation to transcription. The final section covers the molecular basis of epigenetic phenomena, like X-chromosome inactivation, starting from our knowledge of chromatin structure. Together these topics form the molecular basis for our understanding of cell differentiation, knowledge essential for the design of transgenic animals and plants and for gene therapy in humans. This course provides essential tools for work on fundamental problems in transgenic and gene therapy. A number of human disorders may turn out to be caused by genetic or somatic errors at this level of gene control, making this field of central importance.

NTR 6142: Genome Expression and Regulation: Structure of a Human Rhinovirus with its Receptor Molecule; Cascade Regulation of Vaccine and Virus Gene Expression; Transcriptional Activation by the Adenovirus E1A Proteins; Mechanisms Regulating Nuclear Formation of the Hepatitis B Viruses; Transcriptional Activation by the Hepatitis B Virus X Protein; Transcription Factors of the ETS Family; Structure and Function of the Vesicular Gastritis Virus RNA-Dependent RNA Polymerase; RNA Synthesis and mRNA Editing in Para-viral Infections; Translational Regulation by viral Structural Proteins; The Regulation of Corona-virus Gene Expression and Aspects of the Molecular Biology of Poliovirus Replication.

NTR 6143: Health Benefits of Functional Foods: Focuses on Nutrigenetics and metabolic diseases, Nutrition intervention strategies to improve health, Nutrition consumption timing around exercise sessions, Nutritional therapies for mental disorders, Health benefits of particular foods, such as eggs, milk, cereal, garlic, cinnamon, nuts, blueberries, Mineral and protein-enriched foods

NTR 6144: Metabolic Disorders: Focuses on the disorders of carbohydrate metabolism and the diseases of lipids metabolism, highlights the diseases of protein metabolism including

different forms of disorders, discusses the diseases associated with nucleic acids metabolism, provides useful information on molecular genetics and various instrumental techniques used in a clinical diagnostic laboratory and presents An overview of respective macromolecules metabolism.

NTR 6145: Advanced Medical Nutrition Therapy: A comprehensive coverage of the relevant physiology, path-physiology, nutritional therapy and dietetic application for each specialist dietetic area, with coverage of all major specialist areas involved in the treatment of adults through clinical governance, including patient-centered care, clinical decision-making and developing evidence-based practice; in addition to focusing on advanced clinical practice describes several clinical conditions or dietetic areas in detail.

NTR 6146: Food Intake: Regulation, Assessing and Controlling: Presents current research in the regulation and control of food intake. Topics discussed include understanding food intake regulation in chicks; indigenous fermented foods and beverages produced in Latin America; regulation of food intake and its relation to age and body composition and food-borne carcinogens.

NTR 6147: Laboratory Nutritional Assessment: Includes inflammatory biomarkers, biochemical assessment of malnutrition, hydration status, nutritional anemia, and specific information on more than 90 lab tests used for assessing nutrition-related conditions and comprehensive list of medications that may give false lab test results.

NTR 6148: Advanced Community Nutrition: Provides students with the knowledge, skills, tools, and evidence-based approaches that they need to promote health and prevent diseases, and provides pertinent statistics on the national health objectives and discusses traditional concepts as well as current and, emerging nutrition issues and explains nutritional concepts and presents the learner with an application of these important topics.

NTR 6149: Advanced Nutrition and Human Metabolism: Focuses on cells and A Microcosm of Life, The Digestive System, Mechanism for Nourishing the Body, MACRONUTRIENTS AND THEIR METABOLISM, Carbohydrates, Fiber, Lipids, Protein, Integration and Regulation of Metabolism and the Impact of Exercise and Sport, Body Composition, Energy Expenditure, and Energy Balance, THE REGULATORY NUTRIENTS, The Water-Soluble Vitamins, The Fat-Soluble Vitamins, Major Minerals, Water and Electrolytes, Essential Trace and Ultra-trace Minerals, Nonessential Trace and Ultra-trace Minerals.

12.07 - Research Subjects and Activities:

RES 4119: Graduation Research Project: Examines a topic chosen by the learner in order to develop and broaden professional or personal skills and knowledge, especially in applying skills learned in coursework to a specific business or industry.

RES 4129: Graduation Project: Independent project assignment that requires student to apply the gained knowledge and training to include pure intellectual product with narrative description and presentation based on scholar criteria.

RES 5699: Thesis: An independent research and scholar reporting on a selected topic specifically selected from related subjects. The department schedules and coordinates a number of seminars to assist students selecting the topics and to fine tune their work up to reporting. Credit is granted based on the quality of final product after evaluation of correctness, simplicity and clarity, amount of work done, amount of references and materials used and optimality factors.

RES 6120: Statistical Modeling and Analysis for Complex Data Problems: reviews some of today's more complex problems, and reflects some of the important research directions in the field. Twenty-nine authors – largely from Montreal's GERAD Multi-University Research Center and who work in areas of theoretical statistics, applied statistics, probability theory, and processes – present survey chapters on various theoretical and applied problems of importance and interest to researchers and students across a number of academic domains.

RES 6121: Optimal Experimental Design: Introduces the philosophy of experimental design, provides an easy process for constructing experimental designs, calculating necessary sample size using R programs and teaches by example using a custom made R program package: OPDOE introduces experimenters to the philosophy of experimentation, experimental design, and data collection. It gives researchers and statisticians guidance in the construction of optimum experimental designs using R programs, including sample size calculations, hypothesis testing, and confidence estimation. A final chapter of in-depth theoretical details is included for interested mathematical statisticians.

RES 6122: Mathematical Modeling: complete range of basic modeling techniques: it provides a consistent transition from simple algebraic analysis methods to simulation methods used for research. Such an overview of the spectrum of modeling techniques is very helpful for the understanding of how a research problem considered can be appropriately addressed.

RES 6123: Research Methods and Design: Learners gain a thorough understanding of statistical tests appropriate to their dissertation topic and design, how to interpret the results of the tests and how to conduct follow-up analyses, as appropriate. This course includes guidelines and "best practices" for collecting data. Power analysis, what it is, why do it, and how to use available software is covered. Data preparation, use of software to analyze data, and understanding the calculated results are covered. Experience with computer-based statistical analysis techniques is stressed. Emphasizes what is applicable to the Learner's proposed research questions, design, construct/variable definitions and properties of measurements. Satisfactory/Unsatisfactory grade only.

RES 6124: Dissertation Planning, Writing, and Defending: step-by-step through the dissertation process, with checklists, illustrations, sample forms, and updated coverage of ethics, technology, and the literature review.

RES 7160: Concept Paper: Ethical issues in research are studied and the Learner evaluates the research plan developed in modules RSH8951-RSH8953 against accepted ethical principles and practices in the field. The material developed in the modules is integrated into a summarizing document called the Dissertation Research Proposal. The proposal is comprised of Chapter I (Introduction), Chapter II (Literature Review), and Chapter III (Methodology). The Learner develops the Dissertation Research Proposal under the supervision of the faculty mentor, with a focus on the conceptual and methodological clarity of the research plan for the Learner's dissertation topic. Once acceptable to the Learner and the faculty mentor, the draft of the Research Proposal is reviewed by the Learner's Dissertation Committee and the University's Ethics Committee. Satisfactory/Unsatisfactory grade only.

RES 7161: Doctoral Comprehensive Examination: Assures that the Learner has mastered knowledge of his or her discipline, specialization, and can demonstrate applications of that knowledge before formal candidacy status is granted and research in support of the dissertation is initiated. Satisfactory/Unsatisfactory grade only.

RES 7162: Doctoral Dissertation Research I: Continuation of RSH8954-P. The draft of the Dissertation Research Proposal is finalized and approved by the Learner's Dissertation Committee and the University's Ethics Committee. All steps necessary to begin data collection, including any necessary pilot testing, are completed. Candidates for the Ph.D. must maintain continuous enrollment. Satisfactory/Unsatisfactory grade only.

RES 7163: Doctoral Dissertation Research II: Dissertation data are collected and analyzed. Candidates for the Ph.D. must maintain continuous enrollment. Satisfactory/Unsatisfactory grade only.

RES 7164: Doctoral Dissertation Research III: the dissertation process is completed. The manuscript is prepared, accepted by the Learner's Dissertation Committee, and the oral defense is conducted. Candidates for the Ph.D. must maintain continuous enrollment. Candidates must have satisfied all financial obligations to the University and be enrolled at the time the oral defense is conducted. Satisfactory/Unsatisfactory grade only.