The following curriculum information is presented to the University Community for its consideration. In accordance with the procedures of the university Curriculum Committee, objections to all proposed new courses, programs or program/course modifications should be communicated, in writing, within two weeks of the publication date of this bulletin to Adis Beesting, Library (Curriculum Committee) Professor Leonard Bliss, College of Education (Graduate Council) or Barbra Roller (Undergraduate Council).

HEARINGS on FRIDAY, DECEMBER 2, 2005
Joint Hearings Graduate Council and Curriculum Committee:

NAME: MASTER OF ARTS IN ARCHITECTURE (new post-professional track) INTERNATIONAL ARCHITECTURE
SCHOOL: School of Architecture
DATE: Friday, December 2, 2005
TIME: 9:00 – 9:30 A.M.
PLACE: GL 150 – University Park, LIB 155 – Biscayne Bay Campus
CONTACT: Adam Drisin

NAME: MASTER OF ARTS IN ARCHITECTURE (new post-professional track) URBAN DEVELOPMENT
SCHOOL: School of Architecture
DATE: Friday, December 2, 2005
TIME: 9:30 – 10:00 A.M.
PLACE: GL 150 – University Park, LIB 155 – Biscayne Bay Campus
CONTACT: Nathaniel Belcher

NAME: NEW TRACK IN FINANCIAL MATHEMATICS
COLLEGE: College of Arts & Sciences
DATE: Friday, December 2, 2005
TIME: 10:00 – 10:30 A.M.
PLACE: GL 150 – University Park, LIB 155 – Biscayne Bay Campus
CONTACT: Julian Edwards

NAME: PH.D. TRACK IN MATERIAL SCIENCE AND ENGINEERING
COLLEGE: College of Engineering
DATE: Friday, December 2, 2005
TIME: 10:30 – 11:00 A.M.
PLACE: GL 150 – University Park, LIB 155 – Biscayne Bay Campus
CONTACT: Kinsey Jones

HEARING: REQUEST TO CHANGE THE GRADUATE POLICIES AND PROCEDURE MANU
DATE: FRIDAY, December 2, 2005
TIME: 11:00 A.M.
PLACE: GL 150 – University Park, LIB 155 – Biscayne Bay Campus
CONTACT: Alan Kahan, Department of History and Sarah J. Mahler, Department of Sociology/Anthropology

Proposed: Departments which choose to lower the total number of credits required by their Doctoral Degree programs from 90 to 75 may also lower their dissertation research credit hour requirement from a minimum of 24 to a minimum of 15.

This proposal would require the following changes to the Graduate Policies and Procedures Manual:
Section 6.2: Enrollment in Dissertation Credits (Original Date 2/11/97): change 24 credit hour minimum to 15.
Section 3.3.1: Required Credit Hours: Doctoral Degree (Original Date 2/28/89): change 24 dissertation research credit hours to 15.
REQUEST TO CHANGE THE GRADUATE POLICIES AND PROCEDURE MANUAL, continued:

Rationale: On a national average basis and in benchmark universities FIU uses to compare its programs against, the number of dissertation credits falls well below the current minimum level of 24 at FIU. We wish to give our programs the ability to align dissertation hours more closely with our peer institutions. Moreover, in those programs that have opted to reduce total credit hours for the doctorate from the previous minimum of 90, a problem is surfacing. Students who enter a doctoral program with a Masters from another university—and particularly those who enter with an MA from another discipline—transfer 30 credits into FIU’s doctoral program. If students must complete 24 dissertation credits and the total credits for the program is 75, then unless they wish to pay for additional credits, they are left with only 21 credits to complete required courses for the program, leaving virtually no room for any electives at the doctoral level. We feel that this discourages rather than encourages PhD students from acquiring competency and breadth in their field, a fact that would likely affect their marketability post-degree. Overall, we ask that the Graduate Council see the wisdom in granting units greater flexibility in designing their doctoral programs. One size does not fit all which is essentially the current dissertation credit policy; units need more flexibility to design program-specific degree programs that align with disciplinary and academic standards. Our intention in requesting the possibility of a reduction in dissertation credits is no way is meant to demean the dissertation exercise nor the efforts of colleagues in the past. Quite to the contrary, we feel that the dissertation is the defining exercise that distinguishes doctoral from master’s degrees and is of utmost importance. However, this importance is not measured in credit hours but in the quality of the product and units are the entrusted with guaranteeing the quality of not only the dissertation but of their graduate programs in general.

NAME: PROPOSAL TO ESTABLISH UNIT SPECIFIC GRADUATE ADMISSION STANDARDS
COLLEGE: COLLEGE OF ARTS & SCIENCES – DEPARTMENT OF HISTORY
CONTACT: Alan Kahn

History is raising the minimum average GPA from 3 to 3.3 for students who are required to take 6 graduate credits before admission because they lack 12 undergraduate upper-division credits in History in order to have better grounds to deny admission to borderline students. They are changing the Fall application deadline to January 15 in order to allow students a better chance at University-wide fellowships with a February 1 deadline.

HEARINGS ON FRIDAY, DECEMBER 9, 2005
Joint Hearing with Undergraduate Council and Curriculum Committee:

NAME: NEW BACCALAUREATE IN STUDIO ART
COLLEGE: College of Arts & Sciences
DATE: Friday, December 9, 2005
TIME: 9:30-10:00 A.M.
PLACE: GL 835 – University Park, LIB 155 – Biscayne Bay Campus
CONTACT: Carole Damian

NAME: NEW UNDERGRADUATE PROGRAM: BS IN ENVIRONMENTAL ENGINEERING
COLLEGE: College of Engineering & Applied Science
DATE: Friday, December 9, 2005
TIME: 10:00-10:30 A.M.
PLACE: GL 835-University Park, Lib 155-Biscayne Bay Campus
CONTACT: Berrin Tansel

COMBINED BACHELOR/MASTERS DEGREES (No hearing required)

NAME: JURIS DOCTOR/MS IN ENVIRONMENTAL STUDIES JOINT DEGREE PROGRAM
COLLEGE: College of Arts & Sciences
CONTACT: David Bray

NAME: FIVE-YEAR ACCELERATED COMBINED BS/MS IN ELECTRICAL ENGINEERING PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Kang Yen

NAME: FIVE-YEAR ACCELERATED COMBINED BS IN ELECTRICAL ENGINEERING/MS IN TELECOMMUNICATIONS AND NETWORKING PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Niki Pissinou

NAME: FIVE-YEAR ACCELERATED COMBINED BS/MS IN COMPUTER ENGINEERING PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Kang Yen
NEW GRADUATE CERTIFICATES – NO HEARING
(Will be reviewed by a subcommittee of the Graduate Council)

NAME: Graduate Certificate in National Security Studies
COLLEGE: College of Arts & Sciences
CONTACT: John Stack

This is a proposal to establish a new Graduate Certificate in National Security Studies (GCNSS). The GCNSS program is designed to build a foundation for academic success within FIU majors and disciplines and for professional careers in the public and private sectors subsequent to graduation. The certificate draws its strength from the notable breadth and depth of FIU faculty and from departmental course offerings across the university.

Offered through the Jack D. Gordon Institute for Public Policy and Citizenship Studies, the certificate may be awarded to both degree and non-degree seeking students who complete the requirements. For students pursuing a degree, the certificate is a complement to a student’s discipline or major area of studies. For non-degree seeking students, the certificate provides a means for understanding more about national security in the 21st century.

Certificate Requirements
1. A total of 18 credit hours of graduate course work with a grade of B or higher. Courses must come from the approved GCNSS course listing or be approved by the certificate advisor. Courses may include those in the student’s departmental major, but must also be selected from at least two disciplines outside the student’s departmental major. With the approval of the Director, courses other than those listed herein maybe substituted on a case by case basis.

2. A two-course introductory language sequence at FIU with a grade of B or higher. Exemption from this requirement may be obtained through a proficiency examination administered by the FIU Department of Modern Languages. Language courses may not be counted toward the fulfillment of requirement #1 above.

Note: Intermediate-high on the ACTFL exam (1-plus on the US government scale) can normally be attained by students with two undergraduate semesters of basic language instruction and at least one undergraduate semester of intermediate (3000/4000) instruction. Attainment of the required language proficiency is the responsibility of the student, and extra courses to achieve the required proficiency level must be taken outside the GCNSS curriculum.

NAME: Graduate Certificate in International Real Estate
Contact: Ken H. Johnson, Faculty Director of Masters of Science in International Real Estate

Students will be admitted to the Graduate Certificate program in the Fall, Spring, and Summer semesters. The applicant must have an undergraduate GPA of 2.75 or better to be considered for admission. After a student has completed 12 credit-hours in the certificate program, he/she may express an interest for further graduate studies in International Real Estate. In that case, if the certificate GPA is 3.25 or higher for the 12 credit-hours, the student may transfer into the Master of Science in International Real Estate (MSIRE) Program provided he/she has completed the necessary graduate application and has submitted all required materials. If a student does not meet the 3.25 GPA in the first 12 credits, he/she cannot be considered for admission to the Master of Science in International Real Estate (MSIRE) Program at that time or in the future. The student will finish two more courses in the Certificate Program and will be awarded the Graduate Certificate in International Real Estate, as long as he/she satisfies all Graduate School requirements for graduation. Courses: The Graduate Certificate in International Real Estate will consist of 18 credit hours for completion. Students will be required to complete, with a GPA of 3.0 or better, two core courses REE-6045 (Real Estate Markets, Institutions and Practices) and PIN-6428 (Corporate Financial Management) as well as four additional courses.

COLLEGE OF ARTS & SCIENCES - ACCELERATED DEGREES – NO HEARINGS

ACCELERATED MASTER OF SCIENCE IN CHEMISTRY FOR CURRENT CHEMISTRY BS STUDENTS
Contact: Len Keller and Kevin O'Shea

Action deferred #05/06:21
ACCELERATED MASTER OF SCIENCE IN FORENSIC SCIENCE FOR CURRENT CHEMISTRY BS STUDENTS
Contact: Len Keller and J. Almirall

ACCELERATED MASTER OF SCIENCE IN ENVIRONMENTAL STUDIES
Contact: Mahadev Bhat

ACCELERATED MA IN RELIGIOUS STUDIES
Contact: Eric Larson

UNDERGRADUATE INFORMATIONAL (No Hearing)

MINOR IN INTERNATIONAL HOSPITALITY MANAGEMENT (Hospitality Management)
Contact: Dianne Newman

Students select 12 credits in hospitality management and create their own minor according to their particular interests. This minor available to non-hospitality majors only in our International Program Centers.

EVENT AND MEETING PLANNING CERTIFICATE (Hospitality Management)
Contact: Dianne Newman

Specialty Focus...B.S. Travel and Tourism Management

NEW Event and Meeting Planning Certificate (30)

Core Requirements (21)

FSS 4336 Culinary Event Management
3
Prerequisite: HFT 3230 or HFT 4802
Or permission of instructor

HFT 3XXX Travel Information Technology
3

HFT 3741 Planning Meetings and Conventions
3

HFT 4802 Catering Management
3
Prerequisite: HFT 3230 or HFT 4874
Or permission of instructor

HFT 4996 Advanced Events Management
3
Prerequisite: HFT 4784

Electives (9) (Choose 3)

HFT 3210 Fundamentals of Management
3
HFT 3483 Accounting for the Hospitality Industry
3
HFT 3701 Sustainable Tourism Practices
3
HFT 3753 Convention and Trade Show Management
3
HFT 3900 - HFT 3905 Independent Studies
3
HFT 4XXX Managing Tourism Services
3
HFT 4231 Human Resources
3
HFT 4244 Human Relations
3
HFT 4240 Managing Service Organization
3
HFT 4545 Leadership Training for Team Building
3
HFT 4727 Travel Industry Law
3
HFT 4805 Recreational and Non-commercial Foodservice
3

HISTORY M.A. OPTION FOR STUDENTS IN THE PH.D. PROGRAM (College of Arts & Sciences)
Contact: Alan Kahan

Option for Students in the Ph.D. Program – Only students who have been admitted to the Ph.D. program without previously receiving an M.A. in History are eligible to pursue this track.

1. Completion of 39 hours of course work for graduate history credit. All course work must be taken at FIU, and receive a grade of “B” (3.0) or better.
2. Completion of a minimum of two Research Seminars.
3. Completion of Historical Methods.
4. Reading competency in a language other than English
5. Approval of this option by the Director of Graduate Studies, who will determine if the student is making satisfactory progress towards the Ph.D.

UNDERGRADUATE CERTIFICATE IN AGROECOLOGY (College of Arts & Sciences)
Contact: David Bray

This interdisciplinary program is aimed at providing students with an opportunity to learn problems and issues that emerge from the interface between agriculture, natural ecosystems and urban areas. Students will gain an appreciation of how traditional agricultural production system will influence the quality of natural ecosystems and human environment, and also what ecological and developmental pressure that agriculture comes under from the human system. The program will emphasize natural and economic services that are provided by large agricultural areas interspersed between urban and natural areas. Students will learn structural changes that are necessary within agriculture in order to make it ecologically sustainable and community supported. The program includes farm- and field-level experiential learning through internships, field demonstrations and minor experiments. This is a collaborative effort between the Florida International University, US Department of Agriculture (USDA), Archbold Biological Station’s MacArthur Agro-Ecology Research Center (MAERC) and Miami Dade College (MDC).
CURRICULUM COMMITTEE BULLETIN #2, November 15, 2005

Agroecology Certificate, continued:

Prescribed courses and other requirements

The Agroecology Certificate Program requires successful completion of the following four categories of course work, with a total of 17-18 credit hours:

1. Introductory ecology requirement: Take any one of the following
   - PCB 3043L Ecology plus Lab
   - EVR 3013L Ecology of South Florida
   - Other ecology equivalent with a lab
   - (4)

2. Agroecology core requirement:
   - EVS 4xxx Sustainable Agriculture
   - EVS 4xxx Agroecology
   - (3)

3. Agricultural internship or problem analysis:
   - Take any one of the following:
     - EVR 4xxx Environmental GIS
     - BSC 4914 Student Research Lab
     - BSC 4914 Student Research Lab
     - BSC 3949 Cooperative Education in Biology
     - BSC 4915L Honors Research
     - EVR 3949/EVR 4949 Cooperative Education in Environmental Studies
     - EVR 4905 Independent Study
     - EVR 4xxx Cooperative Education
     - (2)

As part of the above course, student must complete a farm-, field- or lab-based internship that may involve working on farms, conducting agro-ecological field observations, carrying out agricultural science lab experiments, conducting geo-spatial modeling, or conducting agriculture-related socio-economic analysis. Student will produce a report based on the internship experience. Students also will have the option of doing internship or conducting agroecology science experiments at USDA’s Agricultural Research Service, Miami and MAERC.

4. General agricultural/environmental science and social studies electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVR 4592</td>
<td>Soils and Ecosystems</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 3010</td>
<td>Introduction to Environmental Energy</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4026</td>
<td>Biotech Resources</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4211</td>
<td>Water Resources</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4312</td>
<td>Energy Resources</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4321</td>
<td>Sustainable Resource Development</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4323</td>
<td>Restoration Ecology</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4401</td>
<td>Conservation Biology</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 4352</td>
<td>U.S. Environmental Policy</td>
<td>(3)</td>
</tr>
<tr>
<td>EVR 3415</td>
<td>Population and Environment</td>
<td>(2)</td>
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<tr>
<td>ECP 3302</td>
<td>Environmental Economics</td>
<td>(3)</td>
</tr>
<tr>
<td>ECP 4314</td>
<td>Natural Resource Economics</td>
<td>(3)</td>
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<tr>
<td>GEO 3510</td>
<td>Earth Resources</td>
<td>(3)</td>
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<tr>
<td>GEO 4476</td>
<td>Political Ecology</td>
<td>(3)</td>
</tr>
<tr>
<td>GEO 4354</td>
<td>Geography/Global Food System</td>
<td>(3)</td>
</tr>
<tr>
<td>GLY 3030</td>
<td>Environmental Geology</td>
<td>(3)</td>
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<tr>
<td>ENY 1004</td>
<td>General Entomology</td>
<td>(3)</td>
</tr>
<tr>
<td>ENY 4060</td>
<td>Advanced Entomology</td>
<td>(3)</td>
</tr>
<tr>
<td>MCB 3010</td>
<td>General Microbiology</td>
<td>(2)</td>
</tr>
<tr>
<td>MCB 4653</td>
<td>Food Microbiology</td>
<td>(3)</td>
</tr>
<tr>
<td>OCB 2061</td>
<td>Introductory Genetics</td>
<td>(2)</td>
</tr>
<tr>
<td>PCB 4301</td>
<td>Freshwater Ecology</td>
<td>(3)</td>
</tr>
<tr>
<td>APB 2170</td>
<td>Introductory Microbiology</td>
<td>(3)</td>
</tr>
<tr>
<td>BOT 3014</td>
<td>Plant Life Histories</td>
<td>(3)</td>
</tr>
<tr>
<td>BOT 3153</td>
<td>Local Flora</td>
<td>(3)</td>
</tr>
<tr>
<td>BOT 3663</td>
<td>Tropical Botany</td>
<td>(3)</td>
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<tr>
<td>BOT 3810</td>
<td>Economic Botany</td>
<td>(3)</td>
</tr>
<tr>
<td>BSC 4422</td>
<td>Biotechnology: Applications in Industry, Agriculture, and Medicine</td>
<td>(3)</td>
</tr>
<tr>
<td>INR 3045</td>
<td>Population and Society</td>
<td>(3)</td>
</tr>
<tr>
<td>INR 4054</td>
<td>World Resources, World Order</td>
<td>(3)</td>
</tr>
<tr>
<td>INR 4350</td>
<td>International Environmental Politics</td>
<td>(3)</td>
</tr>
</tbody>
</table>

The Certificate Committee will consider other courses toward the elective requirement on a case-by-case basis. Up to two courses taken at Miami Dade College or other colleges in the relevant areas of agricultural sciences, horticulture, ecology, and environmental sciences will count toward the ecology course requirement and general agricultural/environmental science elective requirement.

ASIAN STUDIES BACHELOR'S DEGREE WITH HONORS (College of Arts & Sciences)

Contact: Steven Heine

The Honors track is designed for promising students who possess a strong desire for intellectual challenge and growth that focuses on their interest in Asia.

Objectives: The Honors track provides students with a core in-depth foundation in the traditional cultures and modern socio-economic societies of Asia; and further prepares them for advanced studies as well as for careers in the public and private sectors.

Requirements:

a. To earn a B.A. with honors in Asian Studies a student must maintain a 3.5 GPA in Asian Studies courses.

b. Candidates for the B.A. with honors in Asian Studies will complete the same requirements as the B.A. major with one exception. In addition to the 18 semester hours on the concentration of choice (i.e. international political economy of Asia or Asian cultural studies), students will take 3 additional semester hours of "Independent Research in Asian Studies" (ASN 4911) during which the thesis or honors paper will be proposed, researched, written, and defended orally.

c. In the semester prior to graduation, the student will enroll in "Independent Research in Asian Studies" (ASN 4911) in which he or she will expand a term paper into an honors paper or will begin a thesis anew under the direction of an appropriate member of the Asian Studies or affiliated faculty.

d. When the thesis is approved by the faculty member, the coordinator of ASN 4911 will organize and schedule a defense of the honors paper/thesis, at which he or she will present the research and will respond to questions from faculty and students. This requirement will be deemed to have been met upon a majority positive vote of faculty.

e. The honors paper/thesis normally would be approximately 25-30 pages, must be presented according to FIU regulations (available in the department office), and will be deposited in the FIU library. The honors paper/thesis must demonstrate that the student has mastered skills in defining a topic, research and expository writing as well as oral skills required for presentation and defense of the honors paper/thesis.
Contact: John Stack

This is a proposal to establish a new Undergraduate Certificate in National Security Studies (UCNSS). The UCNSS program is designed to build a foundation for academic success within FIU majors and disciplines and for professional careers in the public and private sectors subsequent to graduation. The certificate draws its strength from the notable breadth and depth of FIU faculty and from departmental course offerings across the university.

More specifically, the certificate is envisioned as a means of (1) developing multidisciplinary conceptual approaches to the study of world politics that broaden student understanding and transcend conventional approaches, (2) providing a substantive introduction to the study of US the national security broadly defined, and (3) improving the analytical and writing skills of FIU graduates. Courses include those in the social sciences, humanities, and professional schools. The certificate also includes a rigorous language focus by which students will be offered opportunities to study abroad, deepen foreign language capabilities, and strengthen understandings of world politics from a variety of cross-national and multidisciplinary disciplinary perspectives.

A critical dimension of the proposed certificate program involves broadening and deepening academic expertise in Middle East studies, with supporting academic positions in the Departments of History, International Relations/Geography, and Political Science. Strengthening the faculty in this area will help fill lacunae across the curriculum while contributing to improved departmental offerings. Offered through the Jack D. Gordon Institute for Public Policy and Citizenship Studies, the certificate may be awarded to both degree and non-degree seeking students who complete the requirements. For students pursuing a degree, the certificate is a complement to a student's discipline or major area of studies. For non-degree seeking students, the certificate provides a means for understanding more about national security in the 21st century.

Certificate Requirements

3. A total of 18 credit hours of undergraduate course work with a grade of C or higher. Courses must come from the approved UCNSS course listing or be approved by the certificate advisor. Courses may include those in the student's departmental major, but must also be selected from at least two disciplines outside the student's departmental major. With the approval of the Director, courses other than those listed herein may be substituted on a case-by-case basis.

4. A two-course introductory language sequence at FIU with a grade of C or higher. Exemption from this requirement may be obtained through a proficiency examination administered by the FIU Department of Modern Languages. Language courses may not be counted toward the fulfillment of requirement #1 above.

Note: Intermediate-high on the ACTFL exam (1-plus on the US government scale) can normally be attained by students with two undergraduate semesters of basic language instruction and at least one undergraduate semester of Intermediate (3000/4000) instruction. Attainment of the required language proficiency is the responsibility of the student, and extra courses to achieve the required proficiency level must be taken outside the UCNSS curriculum.

Skill Requirement: (3 credit hours)

<table>
<thead>
<tr>
<th>Skill Requirement: (3 credit hours)</th>
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<tbody>
<tr>
<td>Analytic Writing</td>
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Core Requirement: (6 credit hours)

Select one of the following courses:

| GEO 3176 | Applications of Geographic Information Systems |
| SYA 3300 | Research Methods |

Select one of the following courses:

| INR 3061 | Conflict, Security and Peace Studies In IR |
| INR 3102 | American Foreign Policy |
| INR 3203 | World Politics |

| INR 3303 | Foreign Policymaking |
| INR 4335 | Strategic Studies & Security Studies |

National Security Studies (3 credit hours)

Select one of the following courses:

<table>
<thead>
<tr>
<th>Criminal Justice</th>
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<tbody>
<tr>
<td>CCJ 3101</td>
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<td>CCJ 4641</td>
</tr>
<tr>
<td>CCJ 4661</td>
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<tr>
<td>CJE 4174</td>
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<td>CIL 4064</td>
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<tr>
<th>Economics</th>
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<tbody>
<tr>
<td>ECO 3013</td>
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<td>ECO 4400</td>
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<th>Business, Finance &amp; Management</th>
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<tbody>
<tr>
<td>FIN 4461</td>
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<td>MAN 4613</td>
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<td>MAN 4702</td>
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<td>MAN 4930</td>
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<td>TRA 4621</td>
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<tbody>
<tr>
<td>CHS 3xxx</td>
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<tr>
<td>CHS 4503C</td>
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</tbody>
</table>

History

| AMH 3270 | Contemporary US History |
| AMH 4365 | Technology and American Society |
| AMH 4540 | US Military History from the Colonial Era to the Present |
| AMH 4544 | The United States and the Vietnam War |
| AMH 4930 | Topics in US History: US-Inter American Relations |
| HIS 3308 | War and Society |

International Relations

| INR 3061 | Conflict, Security and Peace Studies In IR |
| INR 3081 | Contemporary International Problems |
| INR 3106 | International Relations of the United States |
| INR 3403 | International Law |
| INR 3502 | International Organizations |
| INR 4054 | World Resources and World Order |
| INR 4077 | International Relations & Women's Human Rights |
| INR 4404 | International Protection of Human Rights |
| INR 4411 | International Humanitarian Law |

Political Science

| CPO 3055 | Authoritarian Politics |
| CPO 4725 | Comparative Genocide |
| INR 3102 | American Foreign Policy |
| INR 4204 | Comparative Foreign Policy |

Sociology

| ANT 4406 | Anthropology of War and Violence |
| SYO 3400 | Political Sociology |
| SYO 4530 | Social Inequality |
| SYP 3300 | Social Movements |
| SYP 3456 | Societies in the World |
| SYP 3520 | Criminology |
| SYP 4460 | Sociology of Disasters |

Area Studies (6 credit hours)

Select two of the following courses:

<table>
<thead>
<tr>
<th>Economics</th>
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<tbody>
<tr>
<td>ECO 4701</td>
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<td>ECO 3123</td>
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<td>ECO 3200</td>
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### Business, Finance and Management

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>FIN 3652</td>
<td>Asian Financial Markets and Institutions</td>
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<tr>
<td>FIN 4651</td>
<td>Latin American Financial Markets and Institutions</td>
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<td>MAN 4660</td>
<td>Business in Latin America</td>
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<tr>
<td>MAN 4930</td>
<td>Special Topics</td>
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### Geography

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>GEO 3001</td>
<td>Geography of Global Change</td>
</tr>
<tr>
<td>GEO 3176</td>
<td>Applications of Geographic Information Systems</td>
</tr>
<tr>
<td>GEO 3421</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>GEO 3471</td>
<td>Political Geography</td>
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<tr>
<td>GEO 3502</td>
<td>Economic Geography</td>
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<tr>
<td>GEA 3210</td>
<td>Geography of North America</td>
</tr>
<tr>
<td>GEA 3320</td>
<td>Population and Geography of the Caribbean</td>
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<tr>
<td>GEA 3400</td>
<td>Population and Geography of Latin America</td>
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<tr>
<td>GEA 3500</td>
<td>Population and Geography of Europe</td>
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<tr>
<td>GEA 3554</td>
<td>Geography of Russia and Central Eurasia</td>
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<tr>
<td>GEA 3600</td>
<td>Population and Geography of Africa</td>
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<tr>
<td>GEA 3635</td>
<td>Population and Geography of the Middle East</td>
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<tr>
<td>GEA 3705</td>
<td>Geography of Central Asia and the Caucasus</td>
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<tr>
<td>GEA 4202</td>
<td>Geography of the Borderlands</td>
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### History

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>AFH 4100</td>
<td>History of Africa I</td>
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<tr>
<td>AFH 4200</td>
<td>History of Africa II</td>
</tr>
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<td>AFH 4342</td>
<td>History of West Africa</td>
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<tr>
<td>AFH 4405</td>
<td>History of East Africa</td>
</tr>
<tr>
<td>AFH 4450</td>
<td>History of South Africa</td>
</tr>
<tr>
<td>AMH 4170</td>
<td>Civil War and Reconstruction</td>
</tr>
<tr>
<td>AMH 4540</td>
<td>US Military History from the Colonial Era to the Present</td>
</tr>
<tr>
<td>ASH 3xxx</td>
<td>History of Japan</td>
</tr>
<tr>
<td>ASH 4300</td>
<td>East Asian Civilization and Culture</td>
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<tr>
<td>ASH 4374</td>
<td>History of Women in Asia</td>
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<tr>
<td>ASH 4404</td>
<td>History of China</td>
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<tr>
<td>EUH 2030</td>
<td>Western Civilization: Europe in the Modern Era</td>
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<tr>
<td>EUH 2382</td>
<td>European History, 1945 to Present</td>
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<tr>
<td>EUH 3570</td>
<td>Russian History</td>
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<tr>
<td>EUH 3576</td>
<td>Russian Revolution and the Soviet Union</td>
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<tr>
<td>EUH 4023</td>
<td>Nazism and the Holocaust</td>
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<tr>
<td>EUH 4286</td>
<td>Topics in European History</td>
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<tr>
<td>EUH 4462</td>
<td>History of Modern Germany</td>
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<tr>
<td>LAH 3132</td>
<td>The Formation of Latin America</td>
</tr>
<tr>
<td>LAH 3200</td>
<td>Latin America: The National Period</td>
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<tr>
<td>LAH 3450</td>
<td>Central America</td>
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<td>LAH 3718</td>
<td>History of U.S.-Latin American Relations</td>
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<tr>
<td>LAH 3740</td>
<td>Comparative History of Latin American Rebellions and Revolutions</td>
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<td>LAH 4932</td>
<td>Topics in Latin American History</td>
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<tr>
<td>WOH 3281</td>
<td>Jewish History to 1750</td>
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<td>WOH 3282</td>
<td>Modern Jewish History</td>
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### International Relations

<table>
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<tr>
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<tbody>
<tr>
<td>INR 3214</td>
<td>International Relations of Europe</td>
</tr>
<tr>
<td>INR 3223</td>
<td>Japan and the United States</td>
</tr>
<tr>
<td>INR 3224</td>
<td>International Relations of East Asia</td>
</tr>
<tr>
<td>INR 3226</td>
<td>International Relations of Central Asia and the Caucasus</td>
</tr>
<tr>
<td>INR 3232</td>
<td>International Relations of China</td>
</tr>
<tr>
<td>INR 3243</td>
<td>International Relations of Latin America</td>
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<tr>
<td>INR 3246</td>
<td>International Relations of the Caribbean</td>
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<tr>
<td>INR 3252</td>
<td>International Relations of North Africa</td>
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<tr>
<td>INR 3253</td>
<td>International Relations of Sub-Saharan Africa</td>
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<table>
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<th>Course Code</th>
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<tbody>
<tr>
<td>INR 3262</td>
<td>International Relations of Russia and the Former USSR</td>
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</table>

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>INR 3274</td>
<td>International Relations of the Middle East</td>
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<tr>
<td>INR 3331</td>
<td>European Foreign and Security Policy</td>
</tr>
<tr>
<td>INR 3705</td>
<td>Geography of Central Asia and the Caucasus</td>
</tr>
<tr>
<td>INR 4082</td>
<td>Islam in International Relations</td>
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<tr>
<td>INR 4085</td>
<td>Women and Men in International Relations</td>
</tr>
<tr>
<td>INR 4084</td>
<td>Ethnicity in World Politics</td>
</tr>
<tr>
<td>INR 4024</td>
<td>Ethnicity and Nationality: World Patterns and Problems</td>
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<tr>
<td>INR 4091</td>
<td>Ethical Problems in International Relations</td>
</tr>
<tr>
<td>INR 4283</td>
<td>International Relations, Development, and the Third World</td>
</tr>
</tbody>
</table>
CURRICULUM COMMITTEE BULLETIN #2, November 15, 2005

CERTIFICATE IN SOUTH ASIAN AREA STUDIES (College of Arts & Sciences)

Contact: Steve Heine

Objectives of the Proposed Certificate Program - This certificate program offers an 18-credit sequence of courses and is intended to provide students with a rich learning experience about an increasingly important region of the world, and is intended to enhance the student's competitiveness upon graduation. The program provides a multidisciplinary approach covering issues in geography, history, politics, religion, sociology/anthropology, and international relations.

Prescribed Courses and Other Requirements - All students are to choose from the courses listed below with the approval of the Director with a grade of C or better.

ASH 4384 History of Women in Asia
EUH 4520 England in the 18th Century
ECS 3021 Women, Culture, and Economic Development
ECS 3200 Economics of Asia
EVR 3402 Asian Environmental Issues
FIN 3652 Asian Financial Markets and Institutions
INR 3081 Contemporary International Problems
INR 4082 Islam in International Relations
LIT 4197 Global Asian Literature

From Abbas Tashakkori:

Please make the following corrections regarding prerequisites:
Remove EDF 6486 as a prerequisite for EDF 6475
Change prerequisites for EDF 6486 for EDF 6485 (non-existent) to EDF 6472
Change prerequisite for EDF 6481 for STA 6166 to EDF 6472

Others are included in the regular course change requests.
## Exceptional Student Education/ESOL

### Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Current Prerequisites/Corequisites</th>
<th>Revised Prerequisites/Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDG 3321 General Instructional Decision Making</td>
<td>Corequisite: EDG 3321L, EER</td>
<td>No prerequisites</td>
</tr>
<tr>
<td>EDF 4634 Cultural and Social Foundations of Education</td>
<td>EDG 3321, EDG 3321L, EDF 3515, EDP 3004, Senior Standing; FER</td>
<td>Prerequisites: EDG 3321, EDP 3004</td>
</tr>
<tr>
<td>SPA 3000 Acquisition of Speech and Language Skills</td>
<td></td>
<td>Prerequisite or corequisite: EEX 3012</td>
</tr>
<tr>
<td>TSL 3370 ESOL Principles and Practices I</td>
<td>Completion of block I</td>
<td>No prerequisites</td>
</tr>
<tr>
<td>EEX 3243 Instructional and Assistive Technology in Special Education</td>
<td>EEX 3012</td>
<td>Prerequisite or corequisite: EEX 3012</td>
</tr>
<tr>
<td>EEX 3221 Assessment of Students with Exceptionalities</td>
<td>EEX 3012, EEX 3202 (Personal Foundations and Transitional Services for Individuals with Disabilities)</td>
<td>Prerequisite or corequisite: EEX 3012</td>
</tr>
<tr>
<td>EDP 3218 Classroom Management</td>
<td>EDP 3004; Corequisite: EDG 3321</td>
<td>Prerequisite or corequisite: EDP 3004</td>
</tr>
<tr>
<td>EEX 4601 Behavioral Approaches to Learning and Classroom Management</td>
<td>EEX 3202, SPA 3000, EEX 3221</td>
<td>Prerequisite or corequisite: EDP 3004</td>
</tr>
<tr>
<td>RED 4150 Teaching Primary Literacy</td>
<td>LAE 3311 or SPA 3000; Corequisite: EDE 3941, Block 2 FE</td>
<td>Prerequisite EDG 3321</td>
</tr>
<tr>
<td>MAE 4310 Teaching Elementary Math</td>
<td>Three courses at college algebra and above; Corequisite: EDE 4940, Block 3 FE</td>
<td>Prerequisite: EDG 321</td>
</tr>
<tr>
<td>RED 4325 Subject Area Reading</td>
<td>EDG 3321, EDG 3321L</td>
<td>Prerequisite: EDG 3321</td>
</tr>
<tr>
<td>EEX 4940 Field Experience in Special Education (0)</td>
<td>Corequisites: RED 4150, LAE 4314, MAE 4310</td>
<td>Corequisites: RED 4150 or MAE 4310</td>
</tr>
<tr>
<td>EEX 4240 Literacy in Special Education</td>
<td>SPA 3000, RED 4150, RED 4311</td>
<td>Prerequisite: EEX 3012</td>
</tr>
<tr>
<td>EEX 3141 ESOL Principles and Practices II</td>
<td>Block I, II, III. Corequisite: EDE 4941</td>
<td>Prerequisite: TSL 3370</td>
</tr>
<tr>
<td>EEX 3066 Instructional Practices I</td>
<td>EEX 3012, EEX 3221, SPA 3000, EDP 3218</td>
<td>Prerequisite EEX 3012</td>
</tr>
<tr>
<td>EEX 4067 Instructional Practices II</td>
<td>EEX 3066, EEX 3012, EEX 3221, EDP 3218, SPA 3000; Corequisite: EEX 4810</td>
<td>Prerequisites: EEX 3221, EEX 3012, EEX 3221, EDP 3218; Corequisite: EEX 4810</td>
</tr>
<tr>
<td>EEX 4810 Supervised Practicum in Special Education (1 credit)</td>
<td>Senior Status</td>
<td>Prerequisites EEX 3221, EEX 3012, EEX 3221, EDP 3218; Corequisite: EEX 4810</td>
</tr>
<tr>
<td>EEX 4861 Student Teaching (9 credits)</td>
<td>Completion of all program requirements. Full admission as a degree-seeking student in the undergraduate special ed. program</td>
<td>Prerequisites: Full admission to the ESE/ESOL program; Passing scores on CLAST; EDG 3321, EDP 3004, EDP 4634; EEX 3012, EEX 3071; SPA 3000; TSL 3370; EEX 3243; EEX 3221; EDP 3218; EEX 4601; RED 4150; MAE 4310; RED 4325; EEX 4240; TSL 4141; EEX 3066; EEP 4067; EEX 4810</td>
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<tr>
<td>EEX 4936 Student Teaching Seminar</td>
<td>All program courses. Corequisites: EEX 4861, EEX 6862</td>
<td>Prerequisites: Full admission to the ESE/ESOL program; Passing scores on CLAST; EDG 3321, EDP 3004, EDP 4634; EEX 3012, EEX 3071; SPA 3000; TSL 3370; EEX 3243; EEX 3221; EDP 3218; EEX 4601; RED 4150; MAE 4310; RED 4325; EEX 4240; TSL 4141; EEX 3066; EEP 4067; EEX 4810</td>
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</table>
### Master of Arts

**Exceptional Student Education**

**With ESOL Endorsement**

#### Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Current Prerequisites (2004-2005 Catalog)</th>
<th>Proposed Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDG 5414 Instructional Strategies for the Classroom Teacher</td>
<td>Permission of the instructor. Corequisite: EDG 5414F, FER</td>
<td>No pre- or co-requisites</td>
</tr>
<tr>
<td>EDP 5219 Classroom Management</td>
<td>EDP 5053; Corequisite: EDG 5414</td>
<td>Prerequisite or Corequisite: EDG 5414, EDP 5053</td>
</tr>
<tr>
<td>EEX 6106 Acquisition of Speech and Language Skills</td>
<td>Prerequisite or Corequisite: EEX 6051</td>
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<tr>
<td>EEX 6227 Educational Assessment</td>
<td>Prerequisite or Corequisite: EEX 6051</td>
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<tr>
<td>EEX 5608 Behavioral Approaches to Learning and Classroom Management</td>
<td>EEX 6051</td>
<td>Prerequisite or Corequisite: EDP 5053</td>
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<tr>
<td>EEX 5259 Literacy in Special Education</td>
<td>Prerequisites or Co-requisites: EEX 6106, EEX 6051</td>
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<tr>
<td>EEX 5766 Instructional and Assistive Technology in Special Education</td>
<td>EEX 6051</td>
<td>Prerequisite or Corequisite: EEX 6051</td>
</tr>
<tr>
<td>RED 4150 Teaching Primary Reading</td>
<td>Undergraduate Level: LAE 3311 or SPA 3000; Corequisite: EDE 3941</td>
<td>Prerequisite: EDG 5414</td>
</tr>
<tr>
<td>MAE 4310 Teaching Elementary Math</td>
<td>Undergraduate Level: Three courses at college algebra and above; Corequisite: EDE 4940, Block 3 FE</td>
<td>Prerequisite: EEX 5061</td>
</tr>
<tr>
<td>RED 4325 Reading in Content Areas</td>
<td>Undergraduate Level: LAE 3311 or SPA 3000, RED 4150; Corequisite: EDE 4940, Block 3 FE</td>
<td>Prerequisite: EEX 5061</td>
</tr>
<tr>
<td>EEX 4940 Supervised Field Experience</td>
<td>Undergraduate Level, Corequisites: RED 4150, MAE 4310</td>
<td>Corequisites: RED 4150 or MAE 4310</td>
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<tr>
<td>EEX 5841 Graduate Supervised Practicum (1 credit)</td>
<td>Completion of professional studies and core courses. Corequisites: EED 5225 (Strategies for Students with Emotional Handicaps), ELD 5235 (Strategies in Teaching Students with Learning Disabilities), EME 5215 (Strategies for Teaching Students with Mental Retardation)</td>
<td>Corequisite: EEX 5069</td>
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<tr>
<td>EEX 5068 Instructional Practices in Exceptional Student Education I</td>
<td>EEX 6051, EEX 6227, EEX 6106, EDP 5319</td>
<td>Prerequisites or Corequisites: EEX 6106, EEX 6051, EEX 6227, EEX 5414</td>
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<tr>
<td>EEX 5069 Instructional Practices in Exceptional Student Education II*</td>
<td>EEX 6051, EEX 4XXX, EEX 6227, EEX 6106, EDP 5319, EEX 5068</td>
<td>Prerequisites: EEX 6106, EEX 6051, EEX 6227, EEX 5414</td>
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<tr>
<td>EEX 5862 Student Teaching (6 credits)</td>
<td>Successful completion of all program requirements</td>
<td>Prerequisites: EDG 5414; EDP 5053; EDP 5517, EDP 5219; ESD 5142, EEX 6051; EEX 6227, EEX 6106, EEX 5608, EEX 5057; EEX 5259; EEX 5766; RED 4150, MAE 4310; RED 4325; EEX 5841; EEX 5068; EEX 5069</td>
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<tr>
<td>EEX 5863 Supervised Field Experience (6 credits)</td>
<td>Successful completion of all program requirements</td>
<td>Prerequisites: EDG 5414; EDP 5053; EDP 5517, EDP 5219; ESD 5142, EEX 6051; EEX 6227, EEX 6106, EEX 5608, EEX 5057; EEX 5259; EEX 5766; RED 4150, MAE 4310; RED 4325; EEX 5841; EEX 5068; EEX 5069</td>
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#### Master of Science

**Exceptional Student Education**

#### Course Requirements

<table>
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<tr>
<th>Course</th>
<th>Current Prerequisites</th>
<th>Revised Prerequisites</th>
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<tbody>
<tr>
<td>EEX 6912 Advanced Theory and Research in Special Education</td>
<td>Certificate in Special Education and/or competence in Special Education</td>
<td>No pre-or corequisites</td>
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<tr>
<td>SPS 6199 Family/School Consultation and Collaboration</td>
<td>Graduate Standing</td>
<td>No pre-or corequisites</td>
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<tr>
<td>EEX 6228 Integration of Assessment, Curriculum and Instruction</td>
<td>Completion of required Masters course work</td>
<td>EEX 6912</td>
</tr>
<tr>
<td>EEX 6971 Masters Thesis (6 credits)</td>
<td>EEX 6912, EDF 5481, consent of instructor</td>
<td>No Change: Prerequisites: EEX 6912, EDF 5481, consent of instructor</td>
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</table>
Prerequisite Changes, College of Education, continued:

From the Department of Health, Physical Education and Recreation:

Exercise Science Courses:

PET 4940  **Internship in Exercise Physiology:** Undergraduate (variable credit 1-15 credits). Change prerequisites from PET 3351, PET 5521 and PEP 5115 to PET 3351 and PET 4384 or PEP 4111 or PET 4389.

PET 3310  **Kinesiology:** Change prerequisite from Anatomy (which computer interpreted as ZOO 3731 only) to ZOO 3731 or ZOO 3733 or PET 3325 or BSC 2085.

PET 5116  **Exercise Specialist:** Change prerequisites from PET 3351 and PET 5387 to PET 3351 and PET 5521.

PET 5931  **Special Topics in Exercise Physiology:** Change prerequisite from PET 3360 to PET 3351.

PET 6785  **Exercise Program Director:** Change prerequisites from PET 3351, PET 5387 and PEP 5115 to PET 3351, PET 5521 and PEP 5115.

Physical Education Teacher Education:

PEP 4102  **Applied Concepts of Fitness and Health:** Remove prerequisites PET 3351 and EDG 3321.

PEP 4442  **Physical Education in the Secondary School:** Remove prerequisites EDG 3321 and EDG 3321L.

From the Department of Education Leadership & Policy Studies:

ADE 5383: ADE 5386 or ADE 5387 or permission of instructor
ADE 6189: Delete all prerequisites.
ADE 6186: Delete all prerequisites.
ADE 6286: ADE 5383 or permission of instructor
ADE 6476: Delete: A working knowledge of personal computers is recommended. Prerequisite: ADE 5383 or permission of instructor. Insert: ADE 5383 and a working knowledge of personal computers are recommended.
ADE 6906: Delete: This course is subject to approval of the program advisor. Insert: Prerequisite: Permission of instructor.

ADE 6946: Permission of instructor.
ADE 6186: Delete all prerequisites.
ADE 7571: Delete all prerequisites.
ADE 7772: At least six doctoral research credit hours.

From the Center for Labor Research & Studies: (Delete the following courses)

LBS 4154: Workers and Diversity. Prerequisite: Junior or Senior Standing.
LBS 4260: Union Leadership and Administration. Prerequisite: LBS 3001.
LBS 4461: Labor Dispute Resolution. Prerequisite: LBS 3001.
LBS 5406: Collective Bargaining and Labor Relations. Prerequisite: Permission of instructor.
LBS 5465: Introduction to Mediation. Prerequisite: Permission of instructor.
LBS 5466: Family Mediation. Prerequisite: Permission of instructor.
LBS 5467: Civil Mediation. Prerequisite: Permission of instructor.
LBS 5485: Fundamentals of Conflict Resolution. Prerequisite: Permission of instructor.
LBS 5507: Labor and Employment Law. Prerequisite: Permission of instructor.
LBS 5658: Labor Movements and Economic Development. Prerequisite: Permission of instructor.
LBS 5930: Topics in Labor Studies. Prerequisite: Graduate standing.
LBS 5931: Topics in the Philosophy and Methods of Conflict Research. Prerequisite: Permission of instructor.

Add in the delineated prerequisite for the following:

LBS 4900: Directed study in Labor Studies. Prerequisite: Permission of instructor.

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<table>
<thead>
<tr>
<th>Course Prefix and Number</th>
<th>Course Title</th>
<th>Changes in Prerequisites and Co-requisites</th>
<th>Final and Complete List of Prerequisites and Co-requisites</th>
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<tbody>
<tr>
<td>ECH 3704</td>
<td>Principles of Industrial Electrochemistry</td>
<td>Prerequisites: Delete: CHM 3411. Ad: CHM 1045.</td>
<td>Prerequisite: CHM 1045.</td>
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<tr>
<td>ECH 4706</td>
<td>Engineering Applications of Electrochemistry</td>
<td>Prerequisites: Delete: ECH 3704. Ad: CHM 1045.</td>
<td>Prerequisite: CHM 1045.</td>
</tr>
<tr>
<td>ECH 4826</td>
<td>Corrosion Control</td>
<td>Prerequisites: Delete: CHM 3411.</td>
<td>Prerequisite: EGN 3365.</td>
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<tr>
<td>EGM 3503</td>
<td>Applied Mechanics</td>
<td>Prerequisites: Delete: Permission of the instructor. Add: MAC 2312, PHY 2048.</td>
<td>Prerequisites: MAC 2312 and PHY 2048.</td>
</tr>
<tr>
<td>EGM 4350</td>
<td>Finite Element Analysis in Mechanical Engineering</td>
<td>Prerequisites: Delete: CGS 2420 or CGS 2423. Add: EML 2032.</td>
<td>Prerequisites: EML 2032, EMA 3702 and EML 4140.</td>
</tr>
<tr>
<td>EML 3126</td>
<td>Transport Phenomena</td>
<td>Prerequisites: Delete or EGN 3343. Delete or EGM 3311.</td>
<td>Prerequisites: MAP 2302 and EGN 3321.</td>
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<tr>
<td>EML 3222</td>
<td>System Dynamics</td>
<td>Prerequisites: Delete: EML 2030 or CGS 2420 or CGS 2423. Add: EML 2032.</td>
<td>Prerequisites: EML 2032, EGN 3321 and EMA 3702.</td>
</tr>
<tr>
<td>EML 3262</td>
<td>Kinematics and Mechanism Design</td>
<td>Prerequisites: Delete: EML 2030 or CGS 2420 or CGS 2423. Add: EML 2032.</td>
<td>Prerequisites: EML 2032 and EGN 3321.</td>
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<tr>
<td>EML 3450</td>
<td>Energy Systems</td>
<td>Prerequisites: Delete: EML 3101. Add: EGN 3343.</td>
<td>Prerequisite: EGN 3343.</td>
</tr>
<tr>
<td>EML 4140</td>
<td>Heat Transfer</td>
<td>Prerequisites: Delete: EML 2030 or CGS 2420 or CGS 2423. Delete: EML 3111. Add: EML 2032.</td>
<td>Prerequisites: EML 2032, MAP 2302 and EGN 3321.</td>
</tr>
<tr>
<td>EML 4220</td>
<td>Mechanical Vibrations</td>
<td>Prerequisites: Delete: EML 2030 or CGS 2420 or CGS 2423. Add: EML 2032.</td>
<td>Prerequisites: EML 2032, EGN 3321 and EMA 3702.</td>
</tr>
<tr>
<td>EML 4312</td>
<td>Automatic Control Theory</td>
<td>Prerequisites: Delete: EML 2030 or CGS 2420 or CGS 2423. Delete: EML 3111. Add: EML 2032.</td>
<td>Prerequisites: EML 2032, MAP 2302 and EGN 3321.</td>
</tr>
<tr>
<td>EML 4410</td>
<td>Combustion Processes</td>
<td>Prerequisites: Delete: EML 3101. Add: EGN 3343.</td>
<td>Prerequisites: EGN 3343 and EML 4140.</td>
</tr>
<tr>
<td>EML 4419</td>
<td>Propulsion Systems</td>
<td>Prerequisites: Delete: EML 3101. Add: EGN 3343.</td>
<td>Prerequisites: EGN 3343 and EML 3126.</td>
</tr>
<tr>
<td>EML 4421</td>
<td>Internal Combustion Engines</td>
<td>Prerequisites: Delete: EML 3101. Add: EGN 3343.</td>
<td>Prerequisite: EGN 3343.</td>
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<td>EML 4535</td>
<td>Mechanical Computer Aided Design</td>
<td>Prerequisites: Delete: EML 2030. Add: EML 2032.</td>
<td>Prerequisite: EML 2032.</td>
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<tr>
<td>EML 4551</td>
<td>Design Project Organization</td>
<td>Prerequisites: Delete: EML 3101.</td>
<td>Prerequisites: EGM 3311, EML 3500 and EML 4140.</td>
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<tr>
<td>EML 4601</td>
<td>Principles of Refrigerating and Air Conditioning</td>
<td>Prerequisites: Delete: EML 3101. Add: EGN 3343.</td>
<td>Prerequisite: EGN 3343 or permission of the instructor.</td>
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<td>EML 4603</td>
<td>Air Conditioning Design</td>
<td>Prerequisites: Delete: EML 3101. Add: EGN 3343.</td>
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<td>EML 4608C</td>
<td>Mechanical Systems in Environmental Control</td>
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<td>EML 4706</td>
<td>Design of Thermal and Fluid Systems</td>
<td>Prerequisites: Delete: EML 3101.</td>
<td>Prerequisite: EML 4140.</td>
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<tr>
<td>EML 4721</td>
<td>Introduction to Computational Thermo-Fluid</td>
<td>Prerequisites: Delete: EML 2030. Add: EML 2032.</td>
<td>Prerequisites: EML 2032 (equivalent or permission of the instructor), EML 3311 (or equivalent), and EML 3126, Co-requisite: EML 4140.</td>
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<tr>
<td>EML 4806</td>
<td>Modeling and Control of Robots</td>
<td>Prerequisites: Delete: EML 3262. Add: EGN 3321 and EMA 3702.</td>
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<td>EML 5103</td>
<td>Intermediate Thermo Dynamics</td>
<td>Prerequisites: Delete: EML 3101.</td>
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<td>Course Prefix and Number</td>
<td>Course Title</td>
<td>Changes in Prerequisites and Co-requisites</td>
<td>Final and Complete List of Prerequisites and Co-requisites (as the list will appear in the catalog)</td>
</tr>
<tr>
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From Tim Downey:

- **CGS 4366 Information Storage and Retrieval Concepts**
  - Current: COP 3804 and CGS 4825
  - Proposed: COP 3804

- **CGS 4825 Website Construction and Management**
  - Current: COP 3804 and CGS 3559
  - Proposed: COP 3804 or COP 3337, and CGS3559

- **COP 3344 Introduction to Using Unix/Linux Systems**
  - Current: COP 2250 or CGS 2423 or equivalent
  - Proposed: COP 2250 or COP 2210 or equivalent

- **COP 4005 Windows Programming for IT Majors**
  - Current: Data Structures for IT
  - Proposed: COP 3804 or COP 3337

- **COP 4009 Windows Components Technology**
  - Current: COP 4226 or Windows Programming for IT
  - Proposed: COP 4226 or COP 4095

- **COP 4226 Advanced Windows Programming**
  - Current: COP 4338
  - Proposed: COP 3337
# Changes to the Graduate Program in Landscape Architecture

**Contact:** Marta Canaves

### Typical Curriculum

<table>
<thead>
<tr>
<th>First Year (Fall Semester)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>LAA 5710</td>
<td>Landscape Architecture Theory</td>
</tr>
<tr>
<td>LAA 5994</td>
<td>Free elective (course name change)</td>
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<tr>
<td>LAA 5404</td>
<td>Computer-Aided Design</td>
</tr>
<tr>
<td>LAA 5003</td>
<td>Formative Studio</td>
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<tr>
<td>First Year (Spring Semester)</td>
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</tr>
<tr>
<td>LAA 5561</td>
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<tr>
<td>LAA 5974</td>
<td>Site Design (Course name change)</td>
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<td>LAA 5053</td>
<td>Site Studio</td>
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<td>First Year (Summer Semester)</td>
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<tr>
<td>LAA 6916</td>
<td>Research Methods</td>
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<td>LAA 6926</td>
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### Second Year (Fall Semester)

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<thead>
<tr>
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<tbody>
<tr>
<td>LAA 5222</td>
<td>Site Analysis (Course name change)</td>
</tr>
<tr>
<td>LAA 5151</td>
<td>Tropical Landscape</td>
</tr>
<tr>
<td>LAA 6054</td>
<td>Community Studio</td>
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### Second Year (Spring Semester)

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<tbody>
<tr>
<td>LAA 5235</td>
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<tr>
<td>LAA 5423</td>
<td>Landscape Construction</td>
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<td>Regional Studio</td>
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### Second Year (Summer Semester)

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<table>
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<tr>
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<tr>
<td>LAA 5491</td>
<td>Landscape Architecture (Course name change)</td>
</tr>
<tr>
<td>AAM 5957</td>
<td>Urban Design (Course name change)</td>
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<td>AA 6055</td>
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<tr>
<td>LAA 6210</td>
<td>Professional Practice in Landscape Architecture</td>
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<tr>
<td>LAA 6971</td>
<td>Theory of Landscape Architecture (Course name change)</td>
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### Proposed Curriculum Changes

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<td>LAA 5710</td>
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<td>LAA 6054</td>
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### Second Year (Spring Semester)

<table>
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### Third Year (Spring Semester)

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### Changes to the Master in Architecture Track 2

**Contact:** Adam Drisin

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<thead>
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<th>New</th>
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<tbody>
<tr>
<td>Fall First Year</td>
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</tr>
<tr>
<td>ARC 5361</td>
<td>Graduate Design I</td>
</tr>
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<td>ARC 5295</td>
<td>Advanced Design Theories</td>
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<td>ARC 5483</td>
<td>Innovations in Landscape Design</td>
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<td>ARC 5483</td>
<td>Innovations in Digital Tools</td>
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<tr>
<td>ARC 5361</td>
<td>Graduate Design II</td>
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<tr>
<td>ARC 6947</td>
<td>Research Methods</td>
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<td>JOC 6000</td>
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<td>JOC</td>
<td>Open Elective</td>
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| Fall Second Year |   |
| ARC 6396 | Graduate Design III |
| ARC 5910 | Thesis Seminar |
| BLA 5110 | Legal Environment of Business |
| JOC 6000 | Open Elective |
| Spring Second Year |   |
| ARC 6971 | Graduate Masters Thesis |
| JOC | Elective |

### Old Total Credits: 61 |
### New Total Credits: 60
### CHANGES TO THE MASTER IN ARCHITECTURE TRACK 3

**CONTACT:** Adam Drisin

<table>
<thead>
<tr>
<th>Old Curriculum</th>
<th>New Curriculum</th>
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<tbody>
<tr>
<td><strong>Fall First Year</strong></td>
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<tr>
<td>ARC 5975</td>
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<td>ARC 6411</td>
<td>Formative Studio &amp; Methods of Design</td>
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<td>ARC 3243</td>
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<tr>
<td>ARC 5975</td>
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<tr>
<td>ARC 2590</td>
<td>Structures &amp; Systems 1</td>
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<td>ARC 5977</td>
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<td>ARC 4873</td>
<td>History of Des. 1840 to present</td>
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<td>ARC 4553</td>
<td>Structures 2</td>
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<td>ARC 6110</td>
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<td>BUS 6110</td>
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<td>ARC 5205</td>
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**GRADUATE DEGREE PROGRAM CHANGES - COLLEGE OF ARTS & SCIENCES**

**CONTACT:** Maureen Donnelly

### CHANGES TO THE MS IN BIOLOGY

**Old Description**

(Changes highlighted by strikeout)

**New Description**

(Changes highlighted by underscore)

**Master of Science in Biology**

To be admitted into the Master's degree program in Biology, a student must:

1. Hold a Bachelor's degree in a relevant discipline from an accredited college or university.
2. Have a 3.0 average or higher during the last two years of the undergraduate program and a combined score (verbal and quantitative) of 1000 or higher on the Graduate Record Exam.
3. Two letters of recommendation of the student's academic potential.
4. Be accepted by a faculty sponsor.
5. Receive approval from the Departmental Graduate Committee.
6. Foreign students whose native language is not English must take the TOEFL (Test of English as a Foreign Language) and obtain a score of 550 or higher (220 on computer-based TOEFL).
Degree Requirements

The Master of Science in Biology Consists of a minimum of 36 credits, including a thesis based upon the student's original research. A maximum of six credits of post-baccalaureate course work may be transferred from other institutions, subject to the approval of the Graduate Committee.

Required Courses

BSC 6457 Introduction to Biological Research 3
BSC 5931 Thesis Proposal Seminar 1
BSC 5975 Thesis Defense Seminar 1
Workshops and Laboratories\(^1\) 4
BSC 6971 Master's Thesis\(^2\) 6
Electives\(^3\) 21

Foreign-Language Competency\(^4\)

\(^1\)Following graduate committee approval, students may fulfill this requirement with any combination of graduate workshops, graduate laboratories, and graduate techniques course (minimum of three separate courses).

\(^2\)To be taken after qualifying exam is passed.

\(^3\)These must include at least 16 credits of courses in the Department of Biological Sciences. No more than six credits can be transferred from another graduate program, subject to the approval of the Graduate Committee. At least six credits must be at the 5000- or 6000-level (excluding thesis credits). Credits taken at the 4000-level beyond six, or at a lower levels, will not count towards graduation.

\(^4\)Competency will be determined by examination consisting of a clear translation of technical material in a foreign language. Credits taken to gain such proficiency will not count towards graduation. As an alternative, students may substitute either six credits of computer programming or mathematics beyond Calculus II.

Graduation Requirements

A grade of 'C' or higher must be obtained in all courses with a cumulative average of 3.0 or higher in the 36 credits, and a thesis must be completed and accepted after presentation to an ad hoc Thesis Committee chosen by the student's Major Professor.

Degree Requirements

The Master of Science in Biology Consists of a minimum of 36 credits, including a thesis based upon the student's original research. A maximum of six credits of post-baccalaureate course work may be transferred from other institutions, subject to the approval of the Graduate Committee.

Required Courses

BSC 6457 Introduction to Biological Research 3
BSC 5931 Thesis Proposal Seminar 1
Workshops and Laboratories\(^1\) 4
BSC 6971 Master's Thesis\(^2\) 6
Electives\(^3\) 21

Quantitative Skills Requirement\(^4\)

\(^1\)Following graduate committee approval, students may fulfill this requirement with any combination of graduate workshops, graduate laboratories, and graduate techniques course (minimum of three separate courses).

\(^2\)To be taken after qualifying exam is passed.

\(^3\)These must include at least 16 credits of courses in the Department of Biological Sciences. No more than six credits can be transferred from another graduate program, subject to the approval of the Graduate Committee. At least six credits must be at the 5000- or 6000-level (excluding thesis credits). Credits taken at the 4000-level beyond six, or at a lower level, will not count towards graduation.

\(^4\)Two semesters of graduate courses in quantitative skills (e.g., statistics, mathematics, computer programming), or demonstrated equivalence of such, is required for the Master of Science in Biology.

Graduation Requirements

A grade of 'C' or higher must be obtained in all courses with a cumulative average of 3.0 or higher in the 36 credits, and a thesis must be completed and accepted by the University.
Changes to the Ph.D. in Biology

Contact: Maureen Donnelly

Old Description

(Changes highlighted by strikethrough)

Doctor of Philosophy in Biology

To be admitted into the Ph.D. program in Biology, a student must:

1. Hold a Bachelor's degree in a relevant discipline from an accredited college or university.
2. Have a 3.0 average or higher during the last two years of the undergraduate program or a Master's degree in a relevant discipline.
3. Have a combined score (verbal and quantitative) of 1120 or higher on the Graduate Record Exam (GRE).
4. Be sponsored by a Biology faculty member.
5. Arrange to have three letters of recommendation sent to the Biology Graduate Program Director evaluating the applicant's potential for graduate work.
6. Receive approval from the Departmental Graduate Committee.
7. Foreign students whose native language is not English must take the TOEFL (Test of English as a Foreign Language) and obtain a score of 550 or higher (220 on computer-based TOFEL).

Degree Requirements

The Ph.D. in Biology is conferred on individuals in recognition of their demonstrated ability to master a specific field of knowledge and to conduct significant independent, original research. A minimum of 90 semester credits of graduate work beyond the baccalaureate are required, including a dissertation based upon the student's original research. A maximum of 36 credits may be transferred from another graduate program with the approval of the Advisory Committee.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>BSC 7981 Dissertation Proposal Seminar 1</td>
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<tr>
<td>BSC 7982 Dissertation Defense Seminar 1</td>
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<tr>
<td>BSC 5945 Supervised Teaching in Biology 2</td>
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<tr>
<td>Workshops and Laboratories</td>
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<tr>
<td>BSC 7980 Ph.D. Dissertation</td>
<td>24</td>
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<tr>
<td>Electives</td>
<td>8</td>
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</table>

Electives

Foreign-Language Competency

Recommended Course

BSC 6457 Introduction to Biological Research 3

New Description

(Changes highlighted by underscore)

Doctor of Philosophy in Biology

To be admitted into the Ph.D. program in Biology, a student must:

1. Hold a Bachelor's degree in a relevant discipline from an accredited college or university.
2. Have a 3.0 average or higher during the last two years of the undergraduate program or a Master's degree in a relevant discipline.
3. Have a combined score (verbal and quantitative) of 1120 or higher on the Graduate Record Exam (GRE).
4. Be sponsored by a Biology faculty member with Dissertation Advisor Status (see list of graduate faculty with DAS).
5. Arrange to have three letters of recommendation sent to the Biology Graduate Program Director evaluating the applicant's potential for graduate work.
6. Receive approval from the Departmental Graduate Committee.
7. Foreign students whose native language is not English must take the TOEFL (Test of English as a Foreign Language) and obtain a score of 550 or higher (220 on computer-based TOFEL).

Degree Requirements

The Ph.D. in Biology is conferred on individuals in recognition of their demonstrated ability to master a specific field of knowledge and to conduct significant independent, original research. A minimum of 90 semester credits of graduate work beyond the baccalaureate are required, including a dissertation based upon the student's original research. A maximum of 36 credits may be transferred from another graduate program with the approval of the Advisory Committee.

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Electives

Quantitative Skills Requirement

Recommended Course

BSC 6457 Introduction to Biological Research 3

Graduation Requirements

A grade of 'C' or higher must be obtained in all courses with a cumulative average of 3.0 or higher in the 90 credits; demonstration of foreign language competency, and a dissertation completed and accepted by the University.
EXISTING

Course work Requirements

Students must complete 48 hours (15 courses) of graduate level course work. Supervised research, independent study, seminars, and dissertation credit do not count towards this objective. This required minimum of 15 courses consists of ten courses in the Core, four courses in two Fields of Specialization (at least two courses per field, some fields may have special requirements), and two electives as approved by the student's advisor (Norman) or the student's dissertation advisor. No credit toward a graduate degree is given for any course in which a grade of "C" or less is obtained. A graduate student who receives a grade lower than 'B' in a course must retake that course. If the student retakes a course, the student will not be permitted to continue in the Ph.D. Program. A graduate student who receives a grade lower than 'B' in more than two courses will not be allowed to stay in the Economics Ph.D. Program. Students are required to maintain a minimum GPA of 3.0 (or 4) in their coursework.

Core Courses
ECO 6112 Fundamentals of Graduate Microeconomics
ECO 7115 Microeconomic Theory I 3
ECO 7116 Microeconomic Theory II 3
ECO 6204 Fundamentals of Graduate Macroeconomics 3
ECO 7200 Macroeconomic Theory I 3
ECO 7207 Macroeconomic Theory II 3
ECO 7400 Mathematical Methods in Economic Analysis 3
ECO 7404 Econometric Methods I 3
ECO 7405 Econometric Methods II 3
ECO 7300 History of Economic Thought 3

Core Study
During the first three semesters, students are required to take courses which include the first nine core courses listed above. Following the third semester, students are required to pass a comprehensive qualifying examination in core theory—the first four core courses listed above. A student who fails below will not be allowed to remain in the program. A student must receive at least a 'B' (3.0) average in the first four courses in order to participate in the comprehensive core theory qualifying examination.

Final Study

During the fourth and fifth semesters, students will complete coursework in two fields of specialization. Students must pass the field examination in one of the major fields at the end of the fifth semester. In the other field, students must write a field paper. The field paper must be completed, processed in a workshop, and accepted by the student's field paper committee by the end of the third year. Students who fail twice any of their field requirements will not be allowed to continue in the field. History of Economic Thought should also be completed by the end of the third year.

Dissertation Work

Upon completion of the field examination requirements, students will be required to choose a specific area of doctoral research. During this phase, which will normally have a total length of at least one year, the student will:

a. Conduct research and complete a dissertation
b. Continue taking courses to complete a minimum of 12 credits of Advanced Workshop and 16 credits of dissertation
c. Attend Advanced Workshops by enrolling in ECO 7625 in the dissertation area and present at least one paper a year on the work in that workshop. Students will normally be required to be enrolled as full-time students at the University for at least one year during the dissertation period. Except under abnormal circumstances, the maximum number of years during which a student may do dissertation work is five years. Graduation Requirements

To graduate, students must complete all course requirements; fulfill workshop presentation requirements, pass the comprehensive and field dissertations, and complete the oral defense and acceptance of the Ph.D. dissertation.

NEW

Course work Requirements

Students must complete 36 hours (15 courses) of graduate level course work. Supervised research, independent study, seminars, and dissertation credit do not count towards this objective. This required minimum of 15 courses consists of nine courses in the Core and four courses in two Fields of Specialization (at least two courses per field, some fields may have special requirements).

No credit toward a graduate degree is given for any course in which a grade of "C" or less is obtained. A graduate student who receives a grade lower than "B" in a course must retake that course. A student who retakes a course, the student will not be permitted to continue in the Ph.D. Program. A graduate student who receives a grade lower than "B" in more than two courses will not be allowed to stay in the Economics Ph.D. Program. Students are required to maintain a minimum GPA of 3.0 (or 4) in their coursework.

Core Courses
ECO 6112 Fundamentals of Graduate Microeconomics 3
ECO 7115 Microeconomic Theory I 3
ECO 7116 Microeconomic Theory II 3
ECO 6204 Fundamentals of Graduate Macroeconomics 3
ECO 7200 Macroeconomic Theory I 3
ECO 7207 Macroeconomic Theory II 3
ECO 7400 Mathematical Methods in Economic Analysis 3
ECO 7404 Econometric Methods I 3
ECO 7405 Econometric Methods II 3
ECO 7300 History of Economic Thought 3

Core Study
During the first three semesters, students are required to take courses which include the nine core courses listed above. Following the second semester, students are required to pass a comprehensive qualifying examination in core theory—the first four core courses listed above. A student who fails below will not be allowed to remain in the program. A student must receive at least a 'B' (3.0) average in the first four courses in order to participate in the comprehensive core theory qualifying examination.

Final Study

During the fourth and fifth semesters, students will complete coursework in two fields of specialization. Students must write a field paper in their major field. The field paper must be completed, presented in a workshop, and accepted by the student's field paper committee by the end of the third year. Students who fail twice their field requirement will not be allowed to continue in that field.

Dissertation Work

Upon completion of field paper requirement, students will be required to choose a specific area of doctoral research. During this phase, which will normally have a total length of two years, the student will:

a. Conduct research and complete a dissertation
b. Continue taking courses to complete a minimum of 12 credits of Advanced Workshop and 16 credits of dissertation
c. Attend Advanced Workshops by enrolling in ECO 7625 in the dissertation area and present at least one paper a year on the work in that workshop. Students will normally be required to be enrolled as full-time students at the University for at least one year during the dissertation period. Except under abnormal circumstances, the maximum number of years during which a student may do dissertation work is five years. Graduation Requirements

To graduate, students must complete all course requirements; fulfill workshop presentation requirements, pass the comprehensive and field dissertations, and complete the oral defense and acceptance of the Ph.D. dissertation.
Changes to the MS Degree in Environmental Studies

Contact: Mahadev Bhat

CURRICULUM COMMITTEE BULLETIN NUMBER 2, November 15, 2005

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Current

Thesis Track: Course Requirements

<table>
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Proposed

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<td></td>
<td>36</td>
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</table>

The research methods course and electives are selected:

- Additional thesis or research credit, above the 6-credit minimum, may also be applied as elective credit. A maximum of six credit hours may be taken at the graduate level.

- A maximum of 5 credit hours of independent study credit (EVR 9907 Graduate Independent Study) may be applied toward graduation.

JUSTIFICATION:

Under thesis track Environmental Studies masters, the current rules are such that students can theoretically take up to 5 credits of Graduate Independent Study and 13 credits of Thesis Research, without having to take any Environmental Studies or non-Environmental Studies elective courses. That amounts to 50 percent of the total graduate credits required for graduation. This considerably weakens the program, although students are normally advised to take actual courses in most cases. The proposed change will set a maximum limit (3 credits) on the total number of Independent Study, Thesis Research and Master's Thesis in addition to the 6-minimum required Thesis credits.

CHANGE IN THE THESIS OPTION/REPORT OPTION IN THE MA IN HISTORY

Contact: Alan Kahan

Degree Requirements

Thesis Option

1. A minimum of 30 semester-hours for the degree, including the maximum of 6 semester-hours of Thesis Research. All coursework must be taken at FIU.
2. A minimum of 24 semester-hours of course work.
3. Two Research Seminars (6 semester hours).
4. Reading competence in a foreign language.
5. A minimum of six semester-hours of EVR 5930 (Historical Methods). Students may not transfer credits from other programs to fulfill this requirement.
6. The following limits are placed in accumulating credits toward the M.A. degree:
   a. No more than three semester-hours of HIS 5909 (Independent Study) are permitted.
   b. Students must receive the grade of "B" (3.0) or better in order for any course to count toward the degree.
   c. A maximum of six semester-hours of HIS 5900 (Special Topics) are permitted.
   d. Students are prohibited from taking more than one Research Seminar per semester.
7. Core Area. Students will select one core area for concentration in United States History, European History, African History or Latin American and Caribbean History. In consultation with the Graduate Advisor, further semester-hours of course work will be taken within the core area.

Degree Requirements

Thesis Option

1. A minimum of 30 semester-hours for the degree, including the maximum of 6 semester-hours of Thesis Research. All coursework must be taken at FIU.
2. A minimum of 24 semester-hours of course work, including two Research Seminars.
3. Two Research Seminars (6 semester hours).
4. Reading competence in a foreign language, demonstrated by achieving a Pass or High Pass on the departmental examination. Language-competency is assessed by the faculty of the Department of History, as appropriate. Courses taken to meet the language competency requirement do not count towards the degree. The Latin American concentration requires proficiency in Spanish or Portuguese; the modern European concentration requires proficiency in French, German, Italian, or Spanish; the United States concentration requires proficiency in a foreign language; and the medieval or ancient concentration is at least one of those languages in addition to Hebrew, Latin, Greek or another ancient language as deemed appropriate by the student's advisor.
5. All students are required to take HIS 6059 (Historical Methods). Students may not transfer credits from other programs to fulfill this requirement.
6. The following limits are placed in accumulating credits toward the M.A. degree:
   a. No more than three semester-hours of HIS 5909 (Independent Study) are permitted.
   b. Students must receive the grade of "B" (3.0) or higher in order for any course to count toward the degree.
   c. A maximum of six semester-hours of HIS 5900 (Special Topics) are permitted.
   d. Students are prohibited from taking more than one Research Seminar per semester.
   e. Students are prohibited from taking graduate-level cross-listed courses that they have already taken at the undergraduate level.
7. All students are required to take HIS 6059 (Historical Methods).
CHANGE IN THE THESIS OPTION/REPORT OPTION IN THE MA IN HISTORY. Continued:

CONTACT: Alan Kahan

67. Core Area. Students will select one core area for concentration in United States History, European History, African History or Latin American and Caribbean History. In consultation with the Graduate Advisor, twelve semester-hours of course work will be taken within this core area.

68. Breadth Areas. Students will take six semester-hours in breadth areas. These may be courses taken within the Department of History that are outside the culture area of concentration, or in associated disciplines outside of the Department (with the approval of the Graduate Advisor), or a combination of the two.

9. Students will register for up to six semester-hours of HIS 6570 (Thesis Research).

10. The thesis must be successfully defended and formally approved by a Supervisory Committee composed of three members of the Department of History. The Supervisory Committee is convened and headed by the thesis supervisor. In cases of cross-disciplinary research, an external reader from a different department may form part of the Supervisory Committee, substituting for one member from the Department of History.

11. The degree candidate will prepare the thesis in accordance with the regulations stipulated in the University's Graduate Policies Manual. The degree will be conferred after the approval of the final version of the thesis by the Office of the Dean of the College of Arts and Sciences and the University Graduate School.

Report Option

1. A minimum of 30 semester-hours of course work are needed for the M.A. degree. The report option does not meet requirements for the Core/Breadth area distribution. Students will design their distribution needs in consultation with the Graduate Advisor and the relevant faculty. All courses must be taken in the Department of History at IU.

2. A minimum of two Research Seminars (6 semester-hours) must be taken. Only Research Seminar papers (2) that secure relevant faculty approval may be submitted to the Graduate Advisor for process of final approval.

3. The following limits are placed on accumulating credits towards the Master's degree:

- Students must receive a grade of "B" (3.0) or better for the course to count towards the degree.

- HIS 5900 (Independent Study) is limited to three semester-hours.

- HIS 5930 (Special Topics) is limited to six semester-hours.

- HIS 6059 (Historical Methods) is required of all students.

- HIS 6059 (Historical Methods) is required of all students.

- HIS 6059 (Historical Methods) is required of all students.

3. HIS 6059 (Historical Methods) is required of all students.

4. Semester-hours, not including Historical Methods, must be comparative. Comparative courses must have HIS or WGN prefixes or else be Independent Study approved for this purpose by the Director of Graduate Studies.

5. The following limits are placed on accumulating credits towards the Master's degree:

- Students must receive a grade of "B" (3.0) or better for the course to count towards the degree.

- HIS 5900 (Independent Study) is limited to three semester-hours.

- HIS 5930 (Special Topics) is limited to six semester-hours.

- HIS 6059 (Historical Methods) is required of all students.
CHANGE TO THE ADMISSIONS REQUIREMENTS FOR THE MASTERS IN HISTORY

CONTACT: Alan Kahan

CURRICULUM COMMITTEE BULLETIN NUMBER 2, November 15, 2005

We are raising the minimum average GPA from 3 to 3.3, for students who are required to take 6 graduate credits before admission because they lack 12 undergraduate upper-division credits in History in order to have better grounds to deny admission to borderline students. We are changing the Fall application deadline from 15 January in order to allow our students a better chance at University-wide fellowships with a 1 February deadline.

Master of Arts in History

The Department of History offers the M.A. degree, with concentrations in one of four culture areas: United States, Africa, Europe, and Latin America. Students will choose a Thesis, Report, or Internship in Public History option, in consultation with the Department's Graduate Advisor. Students must select their option either prior to registering for their first research seminar or before completing the first twelve (12) semester-hours toward the degree, whichever comes first. The degree requirements for the M.A. vary somewhat, according to the option taken.

Entrance Requirements

Requirements for admission into the M.A. degree program in History are the same regardless of the option selected. Applicants must, in addition, meet any additional requirements the University sets for admission to graduate work. Applications should include transcripts from any postsecondary institutions attended, and two (2) letters of recommendation.

Applicants seeking entrance for the Fall Term should prepare all application materials in time for the Department of History to receive them no later than February 15. Applicants will be notified of the Department's recommendation regarding their application no later than March 15. Application materials from individuals seeking entrance for the Spring Term must be received by the Department of History no later than October 15. Applicants will be notified of the Department's recommendation no later than November 15.

1. An applicant who feels the earned GPA is not indicative of his or her ability to be successful in a graduate degree program may also submit scores on the Graduate Record Examination which will be taken into consideration by the admissions committee in its evaluation of the application. The GRE may be taken no later than three years prior to the application.

2. Two letters of recommendation. Applicants should ensure that each letter on their behalf is signed by the writer and placed in the flap of the envelope. Letters should be mailed directly to the Graduate Program Director.

Applicants must complete 24 semester-hours of credit (at the basis of 3-hour courses) in undergraduate courses in History.

Master of Arts in History

The Department of History offers the M.A. degree, with concentrations in one of four culture areas: United States, Africa, Europe, and Latin America. Students will choose a Thesis, Report, or Internship in Public History option, in consultation with the Department's Director of Graduate Studies. Graduate applicants must make their initial decision prior to registering for their first research seminar or before completing the first twelve (12) semester-hours toward the degree, whichever comes first. The degree requirements for the M.A. vary somewhat, according to the option taken.

Entrance Requirements

Requirements for admission into the M.A. degree program in History are the same regardless of the option selected. Applicants must, in addition, meet any additional requirements the University sets for admission to graduate work. Applications should include transcripts from any postsecondary institutions attended, and two (2) letters of recommendation.

Applicants seeking entrance for the Fall Term should prepare all application materials in time for the Department of History to receive them no later than February 15. Applicants will be notified of the Department's recommendation regarding their application no later than March 15. Completed applications generally receive notification of admission by March 1.

Applicants seeking entrance for the Spring Term must be received by the Department of History no later than October 15. Completed applications generally receive notification of admission by December 1.

1. Applicants must hold a bachelor's degree from an accredited institution and have a 3.0 GPA in upper-level work. An applicant who feels their GPA is not indicative of their ability to be successful in a graduate degree program may also submit scores on the Graduate Record Examination which will be taken into consideration by the admissions committee in its evaluation of the application. The GRE must be taken no later than three years prior to the application. The GRE is not, however, required.

2. Two letters of recommendation. Applicants should ensure that each letter on their behalf is signed by the author and placed in the flap of the envelope. Letters should be mailed directly to the Graduate Program Director.

Any applicant with fewer than twelve (12) semester-hours of undergraduate courses in History may be accepted provisionally and take a maximum of nine (9) semester-hour credits by registering for courses under the category of Special Student (consult the University Catalog and the Office of Graduate Admissions). After completing nine semester-hours of undergraduate coursework in History (9000-4999), which will be taken into consideration by the admissions committee in its evaluation of the application, the student may apply for regular admission. The student may continue to be enrolled by the Department's Graduate Program Director, in consultation with the Department's faculty. The provisional admission criteria are only minimum requirements. All applications are reviewed by the Graduate Studies Committee which makes the final admissions recommendation to the University Graduate School.

The above admission criteria are only minimum requirements. All applications are reviewed by the Graduate Studies Committee which makes the final admissions recommendation to the University Graduate School.
Department of History

Justification for History Program Change—Internship in Public History Option

Changes 1-2 broaden the list of acceptable courses for the public history MA track to include Museum Ethics, which the Art History department offers regularly when it does not offer Introduction to Museum Studies, and to allow the History DGS to accept other courses when appropriate. Change 3 lowers the hours of the required 6-credit internship from 520 (the equivalent of 20 hours/week for 26 weeks!) to a more reasonable 300 (20 hours/week for 15 weeks). Change 4 eliminates language requirement for Public History track MA’s, which brings their language requirement into line with the Report option, the other non-thesis MA offered by the History department.

Internship in Public History Option

1. A minimum of 30 semester hours for the degree, including a minimum of 6 semester hours of Independent Study tied to an internship in the fields of Museum Studies or Public History. Six credit hours equal to a minimum of 520 hours of work that is to be documented by the project supervisor or museum director. The internship must be approved by the Graduate Program Director and supervised by a regular member of the department’s faculty.

2. A minimum of 24 semester hours of course work, of which 6 credit hours must be taken from the following list of courses: HIS 5007 (Public History), HIS 5004 (Museum History), ARH 5850 (Introduction to Museum Studies), or ARH 5859 (Libraries and Museums).

3. A minimum of two Research Seminars (4 semester hours).

4. Reading competency in a language other than English. The appropriate language is to be determined in consultation with the Graduate Program Director. Language competency is assessed by the faculty of the Department of History or by a specialist designated by the Graduate Program Director.

5. HIS 6059: Historical Methods.

6. The following limits are placed on accumulating credits toward the internship in Public History Option of the MA degree:
   a) Students must receive the grade of ‘B’ or better.
   b) Students may not take more than one Research Seminar per semester.
   c) Students may not take graduate-level cross-listed courses which they have already taken as an undergraduate.

Students must submit a written report following departmental regulations of their internship activities to the Graduate Committee before the degree can be awarded.
CURRICULUM COMMITTEE BULLETIN NUMBER 2, November 15, 2005

REVISION TO MA IN LATIN AMERICAN AND CARIBBEAN STUDIES

CONTACT: Astrid Arraras

Latins American and Caribbean Studies

Eduardo A. Gusmara, LACC, Director
Juliana Castellanos, LACC, Associate Director

LACC Academic Advisory Committee
Ivan Alonso, (Economics)
David Bray, (Environmental Studies)
Ana Roza, (Modern Languages)
Victor Urbis, (History)

The Master of Arts in Latin American and Caribbean studies (MALACS) is a multidisciplinary program that requires students to concentrate half their courses in one disciplinary or topical area. The program prepares students for careers as analysts for the public and private sectors. Many graduates also continue on to doctoral-level studies in a variety of academic disciplines. While the program is strongest in the social sciences, opportunities are available for students to also concentrate their study in the fields of cultural studies, environmental studies, history, international business, Hispanic literature and film, and Bilingual Journalism.

MALACS is administered by the FIU Latin American and Caribbean Center (LACC), one of the largest area and language studies centers in the US that specializes in the region. In addition to the MALACS degree, LACC also administers joint JD/MALACS and MBA/MALACS degree programs that allow the student to receive both degrees in substantially less time than would be required to pursue each degree individually.

Admission Requirements

Applicants must meet the following minimum admissions requirements:

1. Completed FIU graduate application.
2. A baccalaureate degree from an accredited institution for higher education, or equivalent.
3. A grade-point average of at least 3.0 on a 4.0 scale (or equivalent) for the last two years of undergraduate study and for any postbaccalaureate study.
4. GRE score or TOEFL score for foreign students.
5. A statement of purpose consistent with the goals of the program.
6. Three letters of recommendation.
7. For foreign applicants whose native language is not English, a TOEFL score of at least 550.
8. Application for M.A. assistantship or fellowship (if applicable).
9. Approval by the program admissions committee.

Change 1:
Astrid Arraras, LACC Graduate Program Director

Change 2:
The program's main objective is to prepare graduates for careers as analysts for the public and private sectors. Many graduates also continue on to doctoral-level studies in a variety of academic disciplines. While the program is strongest in the social sciences, opportunities are available for students to also concentrate their study in the areas of cultural studies, environmental studies, history, international business, Hispanic literature and film, and Bilingual Journalism.

Change 3:
LACC also administers partnership degree programs with the Joint Forces Staff College and the Western Hemisphere Institute for Security Cooperation (WHINSEC).

Change 4:
A combined verbal and quantitative score of at least 1000 (50th percentile) on the GRE or the equivalent percentile or higher on other exams such as PRAXIDEPT, GMAT or LSAT.

Change 5:
Students with either a grade-point average or GRE score below the above minimums may still apply and request conditional admission.
Degree Requirements
The MALACS program requires 36 graduate credits. Nine credits consist of the program’s multidisciplinary gateway course (3 credits) and two research methods courses (6 credits). Twelve credits are taken in one of the MALACS concentrations. Nine credits of breadth requirements are taken from at least two other areas of MALACS concentration or from courses outside the concentrations with Latin American and Caribbean content. All concentrations have individual requirements.

MALACS Course Work
A minimum of thirty credits of course work to be selected from the approved list of MALACS graduate courses, is required. Courses must be passed with a grade of "B" or better and distributed as follows:
1) The gateway course, LAS 6001 Survey of Latin America and the Caribbean (3 credits).
2) Required Course: The 12 credits must include the concentration’s introductory foundation or theory course(s) when designated.
3) MALACS concentration: nine credits (three courses) selected from the graduate offerings of at least two MALACS concentrations other than those of the student’s primary concentration. Subject to approval of the LACC Graduate Program Director, up to six credits (two courses) may be selected from the graduate offerings of FIU programs outside those of the MALACS concentrations, provided the courses have substantial Latin American and Caribbean content. FIU policy also allows the transfer of 3 graduate credits from other universities or between FIU graduate programs, provided the courses meet program subject matter requirements.
4) Breadth requirements: nine credits (three courses) selected from the graduate offerings of at least two MALACS concentrations other than those of the student’s primary concentration. Subject to approval of the LACC Graduate Program Director, up to six credits (two courses) may be selected from the graduate offerings of FIU programs outside those of the MALACS concentrations, provided the courses have substantial Latin American and Caribbean content. FIU policy also allows the transfer of 3 graduate credits from other universities or between FIU graduate programs, provided the courses meet program subject matter requirements.

Foreign Language
Each student is required to demonstrate reading proficiency in either Spanish or Portuguese, or in another language such as French, Haitian Creole, or American and Caribbean courses and passing a comprehensive examination.

As a non-credit requirement, students must demonstrate advanced knowledge in Spanish or Portuguese or, when approved, another foreign language from Latin America or the Caribbean. Note: The International and Comparative Law concentration is only available to students in the joint JD/MALACS degree program described below.

Change 6:
DELETE

Change 7:
MALACS offers four graduation exit options (see exit options below).

Change 8:
DELETE
1. Completion of thesis project (6 credits).
2. Participation in an internship and preparation of a major research paper (6 credits).
3. Completion of two directed research projects (6 credits), or
4. Completion of six (6) additional credits of Latin American and Caribbean courses and passing a comprehensive examination.

Change 9:
2) Two research methods courses: (1) Introductory research methods course, either in the student’s concentration or (2) one offered by MALACS; and (3) 6008 Latin American and Caribbean Data Analysis (3 credits).

Change 10:
MALACS concentration: 12 credit (four courses) selected from the graduate offerings of the student’s concentration (Andean Studies, Brazilian Studies, Caribbean Studies, Comparative Politics, Comparative Sociology, Cuban Studies, Colonial Studies, Economics, Environmental Studies, Foreign Policy and Security Studies, Haitian Studies, Hispanic Literature and Film, History, International Business, International and Comparative Law, International Development, International Relations or Bilingual Journalism).

Change 11:
Breadth requirements:
Dutch when justified by research interests. For other language, corresponding tests of proficiency and levels of achievement will be required.

MALACs Graduation Exit Options

Students pursuing careers in the public or private sectors, requiring strong research and analytic skills, or students planning to continue with Ph.D. studies, are encouraged to select the MALACs thesis exit option. The thesis is publicly defended and approved by a committee of three faculty members. The committee chair and at least one other member must be from FIU departments offering courses in the MALACs concentration. The committee as a whole must be drawn from at least two concentration departments. During the thesis period, students register for thesis credits (six credits minimum required) with their thesis committee chair.

Directed Research Option

Another substitute for the thesis option is a directed research exit option. Students selecting this option will prepare and publicly defend two major research papers during this option.

Change 12:

Proficiency demonstrated by scoring an advanced level on the ACTFL exam for Spanish, Portuguese, or French.

Change 13:

Advanced level on the ACTFL exam (4+ on the 10-point government scale) can normally be attained by students with six undergraduate semesters of language instruction (one basic, intermediate and advanced level).

Change 14:

DELETE

Change 15:

1) Thesis Option

2) Internship and Major Research Paper Option

As an alternative to the thesis option, students may select an internship and major research paper exit option. The internship exit option entails a one semester resident internship in either the public or private sector. Internships are related to the student's MALACs concentration. A major professor from a department offering MALACs concentration courses supervises the internship. Internships may be arranged through LACC or by the student. Upon completion of the resident internship, the student prepares and publicly defends a major research paper related to the internship. During the internship period, students register for internship credits (six credits minimum required) with their major professor.

Change 16:

One research paper will address a topic in the student's MALACs concentration and the second paper will be a topic of more general interest to the region. Students will register for two directed research seminars (2 credits each) with their major professor(s).
CURRICULUM COMMITTEE BULLETIN NUMBER 2, November 15, 2005

REVISION TO MA IN LATIN AMERICAN AND CARIBBEAN STUDIES, continued

CONTACT: Astrid Arraras

**Comprehensive Examination Option**
A comprehensive examination exit option is available for mid-career professionals who already possess strong research and analytic skills or for those whose educational interests do not encompass a thesis or internship option. Students selecting the comprehensive examination option complete two additional courses in Latin American and Caribbean studies (6 credits required). The courses are

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<td>LS5000 Comprehensive Examination</td>
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**Course Descriptions**

1. **FLAC** – Foreign Language Across Curriculum;
2. **LAS** – Latin American and Caribbean Studies;
3. **SSC** – Interdisciplinary Courses;
4. **F** – Fall semester offerings;
5. **S** – Spring semester offerings;
6. **SU** – Summer semester offerings

**LS 5907 Independent Study (1–3)**: Supervised readings or field research and training. Prerequisite: and Caribbean Studies (3), introduces students to intermediate level research methods while they complete a directed research project. Prerequisites: LAS 6930 or equivalent.

**LS 6492 Internship in Latin American and Caribbean Studies (1–6)**: Supervised internship leading to a major research paper in Latin American and Caribbean Studies. Prerequisites: All MALACS course work completed (F, S, SS).

**LS 6970 Thesis (1–6)**: Requires students to enroll for thesis research for at least one credit hour every semester until thesis is completed. Prerequisite: Completion of all MALACS courses (F, S, SS).

**MALACS Approved Courses**
A sample of courses approved for each MALACS concentration is provided on the MALACS web site at [http://flac.fiu.edu](http://flac.fiu.edu).

Courses approved for the MALACS program are posted each semester on the FIU Class Schedule at [http://blass.fiu.edu/classschedule](http://blass.fiu.edu/classschedule). Under Special Programs and Certificate Programs select Latin American & Caribbean Studies. All courses listed from 5000 through 7000 series may be applied to the degree program. Approved courses are also posted each semester outside LACC (DM 355) or are available from the Graduate Program Director.

**MALACS Joint and Partnership Degree Programs**

**Joint JD/MALACS Degree Program**
An agreement approved by the University Graduate School, between the FIU College of Law and the College of Arts and Sciences allows students to pursue simultaneously the Juris Doctor (JD) and MALACS degrees, thereby saving considerable time over pursuing each degree separately. Students must meet the entrance requirements for both the JD and MALACS programs. Fifteen credits from the law school curriculum will be allowed toward the MALACS program and will constitute a MALACS concentration in International and Comparative Law. Nine credits from the MALACS program will also count toward the law school curriculum requirements. All other requirements to receive either the JD or MALACS degree must be met. Additional information on the joint degree program is available on the College of Law and MALACS web sites.

**Joint MBA/MALACS Degree Program**

**Change 18:**

The LACC Graduate Program Director arranges for the student to take comprehensive examinations covering the student's MALACS concentration and interdisciplinary Latin American and Caribbean issues. Students will not receive credit for the comprehensive exam.

**Change 19:**

ADD:
LS 5XXX Special Topics in Latin American Studies (3). Variable according to instructor. Prerequisite: Graduate standing or permission of the instructor.

**Change 24:**

An agreement approved by the University Graduate...
**Revised MA in Latin American and Caribbean Studies, continued**

**Contact:** Astrid Arraras

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**School:** Between the FIU Alton H. Chapman, Jr. Graduate School of Business and College of Arts and Sciences, allows students to pursue simultaneously the Master’s in Business Administration (MBA) and MALACS. By doing so, the student will finish both programs much sooner than if they pursue each degree separately.

**MALACS Partnership Degree with Joint Forces Staff College**

An agreement between FIU and the Joint Forces Staff College (JFSC) of the National Defense University allows JFSC graduates to transfer 15 JFSC credits toward the MALACS degree completion requirements. Students will receive a MALACS concentration in Foreign Policy and Security Studies from JFSC courses. Students wishing to take advantage of this partnership must be accepted into the MALACS program through normal application procedures.

**JFSC students must also complete a MALACS exit option (6 credit hours) and meet MALACS language proficiency requirements. Additional information on the JFSC partnership degree program is available on the MALACS web site.**

**Change 25:**

Once accepted, students are required to take 15 credit hours of MALACS courses (5 classes): a research methods class, LAS 6900, LAS 6930, and two breadth courses in at least two MALACS concentrations other than Security Studies.

**Change 26:**

**ADD**

MALACS Partnership Degree with the Western Hemisphere Institute for Security Cooperation

An agreement between FIU and the Western Hemisphere Institute for Security Cooperation (WHINSEC) allows WHINSEC graduates to transfer 15 WHINSEC credits toward the MALACS degree completion requirements. Students will receive a MALACS concentration in Foreign Policy and Security Studies from the WHINSEC courses. Students wishing to take advantage of this partnership must be accepted into the MALACS program through normal application procedures. Once accepted, students are required to take 15 credit hours of MALACS courses (5 classes): a research methods class, LAS 6900, LAS 6930, and two breadth courses in at least two MALACS concentrations other than Security Studies. WHINSEC students must also complete a MALACS exit option (6 credit hours) and meet MALACS language proficiency requirements. Additional information on the WHINSEC partnership degree program is available on the MALACS web site.
### Table: Changes to the MS and Ph.D. in Psychology

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<th>Old Description</th>
<th>New Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Graduate Admission Requirements</strong></td>
<td><strong>Graduate Admission Requirements</strong></td>
</tr>
<tr>
<td>The following are in addition to the University’s Graduate Admission Requirements: 1. A 3.0 or higher GPA during the past two years as an upper division student and a total score (quantitative plus verbal) of 1,000 or higher on the GRE for the Master’s degree, A 3.0 or higher GPA and a GRE verbal and quantitative of 1100 or higher are required for the Ph.D. degree. Foreign students whose native language is not English must take the Test of English as a Foreign Language (the TOEFL examination) and obtain a 580 score or higher. 2. The GRE and GPA stated above are only minimum requirements. All applications are reviewed by the Program Area Admissions Committee, which makes the final admissions decisions. Since admission to the program is competitive, the committee’s requirements are normally higher than the minimum aforementioned standards.</td>
<td>The following are in addition to the University’s Graduate Admission Requirements: 1. A 3.0 or higher GPA during the past two years as an upper division student for both the Master’s and Doctoral programs. 2. A total score (quantitative plus verbal) of 1,000 or higher on the GRE for the Master’s degree. A 3.0 or higher GPA and a GRE verbal and quantitative of 1100 or higher are required for the Ph.D. degree. Foreign students whose native language is not English must take the Test of English as a Foreign Language (the TOEFL examination) and obtain a 580 score or higher. 3. The GRE and GPA stated above are only minimum requirements. All applications are reviewed by the Program Area Admissions Committee, which makes the final admissions decisions. Since admission to the program is competitive, the committee’s requirements are normally higher than the minimum aforementioned standards.</td>
</tr>
<tr>
<td><strong>Graduate Admissions Procedures</strong></td>
<td><strong>Graduate Admissions Procedures</strong></td>
</tr>
<tr>
<td>Applicants must submit the following to the Graduate Studies-Admissions Committee, Department of Psychology, Florida International University, Miami, FL 33199 1. A photocopy of the admission application form submitted to the Admissions Office. 2. A brief essay stating the reasons for the interest in the program and career goals. 3. Three letters of recommendation preferably from previous instructors and/or persons familiar with the applicant’s academic background.</td>
<td>Applicants to the program who are not psychology majors may be accepted conditionally until they meet the category requirements, listed below, early in their graduate career. A maximum of nine semester hours credit earned in the non-degree student category exclusive of prerequisite undergraduate courses may be applied to graduate degree requirements. The undergraduate courses may be applied to graduate degree requirements. The undergraduate course requirements are designed to make certain that students accepted into the graduate program have a broad base of dependable psychological knowledge and acquaintance with the basic methodologies upon which the discipline is founded. Category A. Satisfactory completion of one psychology laboratory or research methods course. Category B. Satisfactory completion of introductory upper division statistics. Deadline for review of completed applications is January 15 for fall admission.</td>
</tr>
<tr>
<td><strong>Master of Science in Psychology</strong></td>
<td><strong>Master of Science in Psychology</strong></td>
</tr>
<tr>
<td>The Masters of Science in Psychology Program at the University is designed to train practitioners and researchers who can function in a variety of applied settings. The core curriculum and admission prerequisites are intended to provide students with a base of knowledge in psychology. A distinctive feature of the program is its emphasis on a close working relationship between student and faculty. Under faculty supervision, students are encouraged to develop individually tailored programs of study that reflect both student interests and program strengths. The curriculum consists of 36 semester hours of graduate study in which the exposures focus specifically on training the student to perform the skills mentioned above. Students are expected to select electives, project/thesis topics, and supervised field experiences that meet not only the degree requirements, but also their academic interest and particular professional objectives. Six of the 36 semester credit hours consist of</td>
<td>The Masters of Science in Psychology Program at the University is designed to train practitioners and researchers who can function in a variety of applied settings. The core curriculum and admission prerequisites are intended to provide students with a base of knowledge in psychology. A distinctive feature of the program is its emphasis on a close working relationship between student and faculty. Under faculty supervision, students are encouraged to develop individually tailored programs of study that reflect both student interests and program strengths. The curriculum consists of 36 semester hours of graduate study in which the exposures focus specifically on training the student to perform the skills mentioned above. Students are expected to select electives, project/thesis topics, and supervised field experiences that meet not only the degree requirements, but also their academic interest and particular professional objectives. Six of the 36 semester credit hours consist of</td>
</tr>
<tr>
<td>The Counseling Psychology Master’s program allows students to meet university requirements plus the requirements for Mental Health Counseling license.</td>
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<tr>
<td>Degree Requirements for the Masters of Science in Psychology</td>
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<tr>
<td>This major of specialization within the Masters of Science program in Psychology includes Industrial/Organizational, Lifespan Developmental, Behavioral Analysis, and Counselling Psychology.</td>
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<tr>
<td>Industrial/Organizational Specialization</td>
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<tr>
<td>Students are required to take 36 semester hours/credits beyond the Bachelor’s degree.</td>
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<tr>
<td>Required Courses:</td>
<td></td>
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<tr>
<td>(a) Two Prerequisites (6 credits)</td>
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<tr>
<td>INP 5970 Research Methodology</td>
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<tr>
<td>(b) Four Methodology Courses (12 credits)</td>
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<tr>
<td>STA 5106 Intermediate Statistics I</td>
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<tr>
<td>STA 5107 Intermediate Statistics II</td>
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<tr>
<td>CLP 5430 Psychological Assessment</td>
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<tr>
<td>INP 5940 Strategies and Methods of Applied Psychological Research</td>
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<tr>
<td>(c) Four Level II Courses (12 credits)</td>
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<tr>
<td>INP 6235 Applied Psych of Organizations</td>
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<tr>
<td>PSY 5601 Applied Psych of Organizations</td>
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<tr>
<td>INP 6111 Organizational Stress</td>
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<td>PSY 5939 Organizational Leadership</td>
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<td>PSY 5939 Psych of Organizational Culture</td>
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<td>(d) Master’s Thesis (6 credits): The thesis must be approved by an I/O faculty member</td>
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<tr>
<td>Master’s Non-Thesis Option: (1) One Elective Course (3 credits) and (2) One Practicum Course (3 credits)</td>
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<tr>
<td>Behavioral Analysis Specialization</td>
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<tr>
<td>Students are required to take 36 semester hours/credits beyond the Bachelor’s degree.</td>
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<tr>
<td>Required Courses:</td>
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<tr>
<td>(a) Two Statistics/Methodology Courses (6 credits)</td>
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<tr>
<td>STA 5107 Intermediate Statistics II</td>
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<tr>
<td>INP 5970 Research Methodology</td>
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<tr>
<td>PSY 5248 Multivariate Analysis in Applied Psychological Research</td>
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<tr>
<td>EAB 5701 Single-Case Research Methods</td>
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<tr>
<td>(b) Three Developmental Seminars (3 courses)</td>
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<tr>
<td>DEP 6117 Psychology of Caregiving</td>
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<tr>
<td>DEP 5105 Emotional Learning &amp; Its Reversal</td>
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<tr>
<td>DEP 5922 Developmental Behavior Analysis</td>
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<td>DEP 5499 Cognitive Processes in Aging</td>
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<tr>
<td>DEP 5004 Psychology of Moral Development</td>
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<td>DEP 7508 Seminar in Psychology of Life-Span Social Development</td>
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<tr>
<td>DEP 5477 Psych of Social Processes in Aging</td>
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<tr>
<td>DEP 6926 Applied Life Span Dev Psych</td>
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<tr>
<td>(c) Supervised Research or Practicum (at least 6 credits)</td>
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<tr>
<td>PSY 5999 Directed Individual Study</td>
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<tr>
<td>PSY 5970 Field Experience</td>
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<tr>
<td>(d) Masters Thesis (6 credits)</td>
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[Note: Name was officially changed in 2004-05.]
CHANGES TO THE MS AND PH.D. IN PSYCHOLOGY, continued:

CONTACT: Suzanna Rose

<table>
<thead>
<tr>
<th>Required Courses</th>
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<tbody>
<tr>
<td>(a) Two Quantitative/Methodology Courses (6 credits)</td>
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<tr>
<td>EAB 5797 Single Case Research</td>
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<td>STA 5106 Intermediate Statistics I</td>
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<td>STA 5107 Intermediate Statistics II</td>
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<tr>
<td>STA 5506 Nonparametric Methods</td>
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<td>STA 5310 Regression Analysis</td>
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<tr>
<td>EDP 5798 Methods of Dev. Research</td>
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<td>(b) Two Core Area Courses (6 credits)</td>
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<tr>
<td>EXP 5099 Experimental Psychology</td>
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<tr>
<td>DEP 5999 Infancy, Childhood, &amp; Adolescence</td>
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<tr>
<td>DEP 5111 Developmental Learning &amp; Its Reversal</td>
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<tr>
<td>EDP 5111 Educational Psychology</td>
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<tr>
<td>(c) Four Behavioral Analysis Courses (12 credits)</td>
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<tr>
<td>EXP 5406 Theories of Learning</td>
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<tr>
<td>EAB 5207 Developmental Behavior Analysis</td>
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<tr>
<td>(d) Supervised Research (3 credits)</td>
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<tr>
<td>PSY 5918 Supervised Research (6 credits)</td>
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<tr>
<td>EAB 6005 and/or EEX 6005 Seminar in Applied Behavioral Analysis or EEX 6008: Applied Behavioral Analysis in Education</td>
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<tr>
<td>(e) Master's Thesis (6 credits)</td>
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</table>

Professional Counseling Psychology (PCP) Specialization

The Professional Counseling Psychology specialization is offered on the FIU Broward-Pembroke Center campus as an accelerated format of the same Counseling Psychology Master's Program described below. In this format, the program can be completed within 18 months. The classes are held every other weekend on Friday evenings from 6-9pm and all day Saturday.

Counseling Psychology Specialization

The Counseling Psychology specialization requires students to complete 60 credit hours to achieve eligibility to take the Florida state exam for a license in Mental Health Counseling.

Requirements:
(a) Fifteen Required Courses (45 credits):
CYP 5622 Brief Methods of Program Fund.
CYP 5630 Principles & Methods of Psychological Consultation
PCO 5004 Ethical Codes and Practices of Counseling & Psychotherapy
PCO XXX Ethical Codes & Family Systems
CLP 5103 Current Issues in Mental Health
CLP 5101 Clinical Code in Env. Practice
CYP 3769 Crisis Intervention
CYP 5344 Groups As Agents of Change
CLP 5106 Advanced Psychopathology
PCO XXX Theory, Research, A Treatment of Addictive Behavior
CLP 4041 Intro. to Psy. Assessment
CYP 6026 Current Issues in Community Psy.
DEP 5405 Psych of Addictions & Alcohol
CYP 4298 Drgs. & Addictions |  |

(b) Masters Thesis Options: Three required courses (9 credits) and thesis (6 credits) and thesis:
CLP 6845 Clinical Practicum
CLP 6946 Clinical Internship
CLP 6949 Advanced Clinical Internship
Phys 5471 Masters Thesis in Psychology (6) |  |

(c) Masters Non-Thesis Option:
## Qualifying Paper Requirement: An advanced case conceptualization that is completed as part of the clinical training experience (four courses, 12 credits).

- CLP 6945 Clinical Practicum
- CLP 6943 Advanced Clinical Practicum
- CLP 6958 Clinical Internship
- CLP 6949 Advanced Clinical Internship

### Doctor of Philosophy in Psychology

The doctorate program in psychology has a two-fold focus: (1) life-span development and (2) applied psychology, including legal and industrial/organizational psychology. The emphasis is on academic quality and the curriculum is designed to foster a commitment both to basic research and to application as an integral part of the individual student's specialty area development. The curriculum offers a broad background in life-span development and applied psychology encouraging the development of an area of specialization early in graduate training.

Students are expected to master a series of core course requirements designed to facilitate a thorough grounding in theory, methodology, and content both in basic and applied research. In addition, a number of seminars reflecting specialized field are offered. Students are also required to pursue specific areas of interest through independent study with individual faculty members and through apprenticeship with a primary advisor for the purpose of acquiring direct research experience.

### Degree Requirements for the Ph.D. in Psychology

The Ph.D. in Psychology is conferred on individuals in recognition of their demonstrated ability to master a specific field of knowledge and to conduct significant independent, original research. A minimum of 90 semester credits are required, including a dissertation based upon the student's original research. A maximum of 36 credits may be transferred from another graduate program with the approval of the Program Committee.

#### Life-Span Developmental Specialization

- Three (3) Statistics/Method courses (9 credits)

### CONTACT: Suzanna Rose

- DEP 6750 Methods of Dev. Research
- PSY 6400 Intro to Lifespan Issues
- STA 5107 Intermediate Statistics I
- STA 5107 Intermediate Statistics II
- DEP 6400 Cognitive Processes in Aging
- DEP 6544 Psychology of Moral Development
- DEP 6735 Cross-cultural Sensation
- DEP 6700 Life-Span Social Development
- DEP 6477 Social Processes in Aging

- DEP 6117 Psychology of Consciousness
- DEP 6165 Emotional Learning & Its Reversal
- EAB 6707 Developmental Behavior Analysis
- DEP 6466 Cognitive Processes in Aging
- DEP 5544 Psychology of Moral Development
- DEP 6755 Cross-cultural Sensation
- DEP 6700 Life-Span Social Development
- DEP 6477 Social Processes in Aging

- DEP 5900 Directed Individual Study
- PSY 5915 Directed Research
- PSY 5947 Supervised Field Experience
- PSY 7915 Supervised Teaching

- Six (6) credits inside or outside of the developmental area

- Master's Thesis (6 credits)

- Comprehensive Examination:
  - Part 1: Specialty Exam/Qualifying Paper
  - Part 2: Theory/Method Exam

- Doctoral Dissertation (21 credits)

### Legal Psychology Specialization

- Four (4) Statistics & Method Courses (12 Credits)
  - STA 5106 Intermediate Statistics I
  - STA 5107 Intermediate Statistics II
  - CLP 6436 or 6438 Psychometric Assessment

- Four (4) Legal Psychology Core Courses (12 Credits)
  - INP 5726 Psychology of Legal Consultation
  - PSY 5939 Forensic Testimony
  - PSY 5943 Law and Witnesses

### DEP 6750: Actual Innocence and Wrongful
Changes to the MS and Ph.D. in Psychology, continued:

Contact: Suzanna Rose

Convictions

- CLP 6405 Forensic Psychology
- CRP 6701 Psychology of Juvenile Law Enforcement
- CCJ 5216 Crime Law
- CCJ 5230 Criminal Procedure
- CCJ 5260 Criminal Process and Policy
- CCJ 5286 Comparative Law
- CCJ 5288 Legal Issues for Criminal Administrators

[1] Law Courses elective approved in advance

- Biology and Chemistry courses at SUNY Law School

- 350.958 Introductory to Social Psychology

- SOC 444 Social Psychology

- SOC 4103 Personality in Organizational Pys.

- SOC 5000 Advanced Quantitative Psychology

- Other courses outside of Major/Minor Area

- 3 Credits approved in advance

- Teaching of Psychology (1 Credit)

- PSY 5041 Teaching of Psych.

- Masters Thesis (2 Credits)

- Qualifying Exam. A comprehensive exam covering three areas: Major Psychology, an optional minor (facial or cognitio), and method/development.

- Dissertation (2 Credits)

Industrially Organizational Specialization

- Three Seminars (9 Credits)

- IRP 5005 Industrial Psychology

- SOC 5099 Social Psychology

- Soc 5616 Social Psychology of Organizations

- Four Methodology Courses (12 Credits)

- STA 5106 Intermediate Statistics I

- STA 5107 Intermediate Statistics II

- CLP 4540 Psychological Assessment


- Four Level II Courses (12 Credits)

- IRP 5274 Personality Assessment

- IRP 5275 Applied Psych. Training & Dev.

- IRP 5939 Team Effectiveness

- IRP 5931 Organizational Stress

- IRP 5932 Organizational Leadership

- IRP 5939 Psych. of Organizational Culture

- Nine Elective Courses (27 Credits)

- Master's Thesis (6 Credits)

- Comprehensive Examination A written examination covering both methodological and IO psychology content knowledge.

- Doctoral Dissertation (24 Credits)

Graduation Requirements for the Ph.D.

A grade of "C" or higher must be obtained in all courses with a cumulative average of 3.0 or higher in the 90 credits; the program requirements must be completed, and a dissertation must be completed and accepted by the University.
### Changes to Certificate Program

**CONFLICT RESOLUTION AND CONSENSUS BUILDING PROFESSIONAL CERTIFICATE PROGRAM**

- **Program Director:** Peggy Wilson
- **Contact:** Peggy Wilson

#### Existing Catalog Text

<table>
<thead>
<tr>
<th>Track</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>Track I: Community Conflict Resolution</td>
<td>Conflict Resolution Theory, Mediation, Negotiation</td>
</tr>
<tr>
<td>Track II: Conflict Resolution</td>
<td>Resolution Skills, Cross-Cultural Communication</td>
</tr>
<tr>
<td>Track III: Global Issues and Conflict Resolution</td>
<td>Global Issues, Cross-Cultural Conflict Management</td>
</tr>
</tbody>
</table>

#### Proposed Catalog Text

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<th>Courses</th>
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<tbody>
<tr>
<td>Track I: Community Conflict Resolution</td>
<td>Conflict Resolution Theory, Mediation, Negotiation</td>
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<td>Track II: Conflict Resolution</td>
<td>Resolution Skills, Cross-Cultural Communication</td>
</tr>
<tr>
<td>Track III: Global Issues and Conflict Resolution</td>
<td>Global Issues, Cross-Cultural Conflict Management</td>
</tr>
</tbody>
</table>

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The Conflict Resolution and Consensus building Certificate program offers students at the post-baccalaureate level the opportunity to obtain an interdisciplinary concentration in the study of conflict resolution and obtain an intellectual background in the theories and methodologies of conflict resolution and consensus building.

In modern society, the ability of various sectors to understand one another's perspectives, to learn methods to reduce potential conflicts, and to develop mechanisms to work toward building consensus is extremely critical. The issues that may be explored in this area of study are multi-disciplinary and tend themselves to a broad-ranging interdisciplinary certificate which will allow students both to gain an understanding of the major concepts and issues in the field and also concentrate in a more specific area of study such as the workplace, the community, the educational institution, or the international arena.


#### Certificate Requirements

- **Program:** The certificate program requires 18 hours (6 courses) of study at the graduate level from the following certificate program course listing, or others approved by the certificate program advisor. Three tracks of study are offered: Track I: Workplace Conflict Resolution; Track II: Community Conflict Resolution; and Track III: Global Issues and Conflict Resolution.
- **For each track:** There are two required core courses and four additional electives. These courses should be understood to be a partial list; students should consult with the advisor of the certificate program to discuss course selection for these requirements.

---

The certificate program requires 18 hours (6 courses) of study at the graduate level from the following certificate program course listing, or others approved by the certificate program advisor. Three tracks of study are offered: Track I: Workplace Conflict Resolution; Track II: Community Conflict Resolution; and Track III: Global Issues and Conflict Resolution.

For each track there are two required core courses and four additional electives. These courses should be understood to be a partial list; students should consult with the advisor of the certificate program.
PROFESSIONAL CERTIFICATE PROGRAM, continued:

CONTACT: Peggy Wilson

Certificate program about current course offerings. Students are required to take courses from a minimum of two departments.

Core Courses for all Tracks (6 hours)
LBS 5485 Fundamentals of Conflict Resolution
LBS 5931 Topics in the Philosophy and Methods of Conflict Research

or

a research or methods course from related disciplines to be chosen from various disciplines in consultation with advisor.

Track I: Workplace Conflict Resolution (12 hours)
Labor Studies
LBS 5406 Collective Bargaining and Labor Relations
LBS 5464 Labor Arbitration
LBS 5465 Introduction to Mediation
LBS 5135 Workplace Diversity
LBS 5507 Labor and Employment Law
LBS 3930 Topics in Labor Studies

Management
MAN 6066 Business Ethics
MAN 6121 Interpersonal Behavior and Analysis
MAN 6209 Organizational Design and Behavior
MAN 6295 Conflict in Organizations
MAN 6405 Labor Relations
MAN 6411 Collective Bargaining Topics

Track II: Community Conflict Resolution (12 hours)

Education
EDF 5851 Social/Cultural Conflict
EDF 5880 Intercultural Education:
National and International Perspectives
EDF 6365 Cultural Identities and Conflict
EDF 6608 Social, Philosophical and

Environmental Studies
EVR 5355 Environmental Resource Policy

Labor Studies
LBS 5466 Family Mediation
LBS 5467 Civil Mediation
LBS 5930 Topics in Labor Studies
LBS 5465 Introduction to Mediation

Political Science
POS 5045 Seminar in American Politics
POS 5146 Seminar in Urban Politics
POS 5326 Seminar in Class Analysis
POS 5932 Topics in Urban Politics

Psychology
CYP 5334 Groups as Agents of Change
CYP 6766 The Psychology of Cross-Cultural Sensitization in a Multi-cultural Context
SOF 6723 Psychology of Juries

Public Health
PHC 6311 Environmental Health and Risk Assessment
PHC 6355 Occupational Health and Safety
PHC 6356 Fundamentals of Industrial Hygiene
PHC 6315 Public Health and Environmental Management

Religious Studies
PEL 5149 Religion, Violence and Conflict

Sociology/Anthropology

History Foundations of Education
EDF 6636 Inter-cultural Studies: A Qualitative and Quantitative Analysis
EDG 5707 Cultural and Cross-Cultural Studies

Public Health
PHC 6389 Health Promotion in Institutional Settings
Dietetics and Nutrition
HUN 6239 Management of Nutrition Services

Track II: Community Conflict Resolution (12 hours)

Education
EDF 5840 Inter-Cultural Education:
National and International Perspectives
EDF 6365 Cultural Identities and Conflict
EDF 6366 Conflict Resolution:
Negotiation-Based Perspectives
EDF 6367 Interactive Conflict Resolution: Third Party Perspectives
EDG 5707 Cultural and Cross-Cultural Studies

Environmental Studies
EVR 5355 Environmental Resource Policy

Labor Studies
LBS 5466 Family Mediation
LBS 5467 Civil Mediation
LBS 5930 Topics in Labor Studies
LBS 5465 Introduction to Mediation

Psychology
CYP 5334 Groups as Agents of Change
CYP 6766 The Psychology of Cross-Cultural Sensitization in a Multi-cultural Context
SOF 6723 Psychology of Juries

Public Health
PHC 6311 Environmental Health and Risk Assessment
PHC 6355 Occupational Health and Safety
PHC 6356 Fundamentals of Industrial Hygiene
PHC 6315 Public Health and Environmental Management

Religious Studies
PEL 5149 Religion, Violence and Conflict

Sociology/Anthropology

History Foundations of Education
EDF 6636 Inter-cultural Studies: A Qualitative and Quantitative Analysis
EDG 5707 Cultural and Cross-Cultural Studies

Public Health
PHC 6389 Health Promotion in Institutional Settings
Dietetics and Nutrition
HUN 6239 Management of Nutrition Services
CHANGES TO THE CONFLICT RESOLUTION AND CONSENSUS BUILDING
PROFESSIONAL CERTIFICATE PROGRAM, continued:

CONTACT: Peggy Wilson

<table>
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<tr>
<th>Human Rights</th>
<th>Management</th>
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<tbody>
<tr>
<td>Labor Studies</td>
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<td>Education</td>
<td>Management</td>
</tr>
<tr>
<td>LBS 5465 Introduction to Mediation</td>
<td>MAN 6601 International Management</td>
</tr>
<tr>
<td>LBS 5658 Labor Movements and Economic Development</td>
<td>MAN 6615 International Labor-Management Relations</td>
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<tr>
<td>MAN 6606 Colloquium in Managing Organizational Ethics</td>
<td>MAN 6601 International Management</td>
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<tr>
<td>Political Science</td>
<td>MAN 6615 International Labor-Management Relations</td>
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<td>INR 5105 American Foreign Policy</td>
<td>MAN 6606 Colloquium in Managing Organizational Ethics</td>
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<td>INR 5087 Ethnicity and the Politics of Development</td>
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<td>INR 5007 Seminar in International Politics</td>
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<td>INR 6080 Seminar on Non-State Actors</td>
<td>MAN 6606 Colloquium in Managing Organizational Ethics</td>
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<td>INR 6705 Seminar in International Political Economy</td>
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<tr>
<th>Track III: Global Issues and Conflict Resolution (12 hours)</th>
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<tr>
<td>Education</td>
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<td>EDF 5800 Inter-Cultural Education: National and International Perspectives</td>
<td>EDF 5800 Inter-Cultural Education: National and International Perspectives</td>
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<tr>
<td>EDF 6365 Cultural Identities and Conflict</td>
<td>EDF 6365 Cultural Identities and Conflict</td>
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<tr>
<td>EDF 6366 Conflict Resolution: Negotiation-Based Perspectives</td>
<td>EDF 6366 Conflict Resolution: Negotiation-Based Perspectives</td>
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<tr>
<td>EDF 6367 Interactive Conflict Resolution: Third Party Perspective</td>
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<td>EDF 6358 Selected Topics in International Development Education</td>
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<td>EDF 6366 Conflict Resolution: Negotiation-Based Perspectives</td>
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Old FIU Graduate Catalog Copy

New FIU Graduate Catalog Copy

Adapted Education and Human Resource Development (AEHRD)

Adapted Education and Human Resource Development (AEHRD)

The doctoral programs in Adapted Education and Human Resource Development (AEHRD) prepares advanced professionals to facilitate individual, organizational, and career development and advancement of adults in the nation and the world.

Graduates are equipped to design and facilitate programs for adult clients, employees, volunteers, students, and associates of profit and non-profit organizations. These professionals may be engaged in program development and evaluation, training, policy development and analysis, leadership, and executive coaching and mentoring.

Participants in the AEHRD doctoral program and its additional tracks come from diverse backgrounds: business and industry; higher education; public and private schools; health and social service agencies; law enforcement and corrections; the military; government; and non-governmental agencies; religious organizations; foundations; museums; and civic and professional associations.

The Doctor of Education degree is conferred on the basis of high scholarship and originality in the creation and application of knowledge as theory and research findings to practical problems in adult education and human resource development. Applications for admission to the doctoral program are invited from individuals who are highly motivated and intellectually capable of meeting the challenges of a rigorous doctoral degree program.

Successful completion of the candidate's major field of study, major achievement, and minor achievement will be judged on the basis of quantitative criteria (e.g., GPA scores and GPA, as listed elsewhere in this catalog) and also in terms of prior experience and future career goals.

Adapted Education and Human Resource Development (AEHRD)

Program of Study

Doctoral programs of study vary according to the individual needs of the participants and their current or anticipated professional goals. A typical program will require a minimum of 64 semester hours beyond the bachelor's degree and will involve the completion of courses noted below. The list should be considered as a sample program rather than an absolute definition of exact requirements. Actual programs of study are planned by the participants, their major professor, and their program of studies supervisory committee.

Research and Statistics (9 hours minimum)

Research courses are required for all doctoral participants. Participants are selected with the guidance of the faculty of the program of studies supervisory committee.

Electives (3-15 semester hours minimum)

Electives vary according to the participants’ background and professional goals and are selected with the guidance of the participant’s program of studies supervisory committee.

Cognates (15-18 semester hours minimum)

Cognates in the cognate area vary according to the participants’ background and professional goals and are selected with the guidance of the participant’s program of studies supervisory committee.
CHANGES TO ADULT AND HUMAN RESOURCE DEVELOPMENT, continued:

CONTACT: Jo Gallagher

<table>
<thead>
<tr>
<th>Prospectors and Dissertation (24 semester hours minimum)</th>
<th>NID, the minimum is 3 hours. For students electing the NID specialisation, the minimum is 15 hours. NID specialisation students will select courses in the cognate with the guidance of an NID-affiliated faculty member on their program of studies committee.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants are responsible for a minimum of 24 semester hours of dissertation credits. The dissertation must be an original contribution to knowledge in an area of adult education, human resource development, and/or vocational technical education (workforce development). Participants are expected to complete the dissertation within nine years from their date of admission to the AERED doctoral program. A minimum of six credit hours of dissertation are to be undertaken each term the dissertation is being prepared. Continuous enrolment in dissertation study is required, including summer terms.</td>
<td>Participants are responsible for a minimum of 24 semester hours of dissertation credits. The dissertation must be an original contribution to knowledge in an area of adult education or human resource development. Participants are expected to complete the dissertation within nine years from their date of admission to the AERED doctoral program. A minimum of six credit hours of dissertation are to be undertaken each term the dissertation is being prepared. Continuous enrolment in dissertation study is required, including summer terms.</td>
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**International and Intercultural Development Education Track (code 0056)**

**Program Description**

The Doctor of Education (Ed.D.) degree program in Adult Education and Human Resource Development with a specialization in International and Intercultural Development Education (IEDE) is designed (1) to serve the advanced professional development needs of individuals associated with the improvement of education and development, planning, research, training, evaluation, and other types of developmental programs, distance learning, and innovative practices which focus on adult learners and (2) to provide technical assistance consultation, and other professional experience to organizations which conduct, sponsor, and/or promote adult education and human resource development programs in the context of intercultural and international areas and projects.

**Program Study**

Doctoral programs of study vary according to the individual needs of the participants and their current or anticipated professional goals. A typical program will require a minimum of 48 credit hours beyond the baccalaureate degree and should include the courses within areas of study. The list should be considered as a sample program rather than an absolute designation of credit requirements. Programs of study are planned by the participants, their major professors, and the program of studies supervisory committee.

**Adult Education and Human Resource Development Program Core (46 hours)**

The Adult Education and Human Resource Development program core includes courses in areas such as comprehensive adult education and NID planning, program development, instructional design, adult teaching and learning, trends and issues, strategies, and research.

**International and Intercultural Development Education Program Core (16-24 hours)**

Courses include a 2-credit-hour study of international systems, comparative methodology, educational development issues, intercultural adult education, conflict theory and resolution, lesson planning in education, technological transfer, knowledge and development, education organizational behavior, international organizations, and NGOs, and social, psychological, and political contexts of international development education.

**Research and Statistics (9 hours minimum)**

Although some courses are required for all doctoral participants, others are selected with the guidance of the participant’s program of studies supervisory committee.

**Electives (3-9 hours minimum)**

Electives vary according to the participants’ background and professional goals and are selected with the guidance of the participant’s program of studies supervisory committee.

**Prospectors and Dissertation (24 hours minimum)**

Participants are responsible for a minimum of 24 semester hours of dissertation credits. The dissertation must be an original contribution to knowledge in an area of international and intercultural development education in relation to adult education and/or human resource development. Participants are expected to complete the dissertation within nine years from their date of admission to the doctoral program. A minimum of six credit hours of dissertation are to be undertaken each term the dissertation is being prepared. Continuous enrolment in dissertation study is required, including summer terms.
CHANGES TO MASTER OF SCIENCE IN ADULT EDUCATION:

CONTACT: Jo Gallagher

<table>
<thead>
<tr>
<th>OLD PROGRAM REQUIRED COURSES (1 credit hour per course)</th>
<th>NEW PROGRAM REQUIRED COURSES (1 credit hour per course)</th>
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</thead>
<tbody>
<tr>
<td>ADE 6941</td>
<td>ADE 6185</td>
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<td>ADE 6344</td>
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<td>ADE 6340</td>
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<td>ADE 6945</td>
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<td>EDF 5481</td>
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</table>

The faculty of the Department of Educational Leadership and Policy Studies (ELPS) of the College of Education propose the above changes to the list of required courses in the Master of Science in Adult Education (MSAE) program. This proposal is filed in tandem with one for changes in required courses in the Master of Science in Human Resource Development (MSHRD). This change represents a further step in the reduction of unnecessary course overlap between the MSAE and the MSHRD required courses. Approved new courses have been created to update the curricula of the two degree programs and provide the appropriate distinction between the two degrees. The list of courses in the right-hand column reflect the need for professional practitioners in adult education to acquire the skills, knowledge, and attitudes to provide or supervise the provision of effective programming for a wide variety of adults in a similarly wide variety of environments. The number of hours in the program is not increased. The 36-hour degree program leaves ample room for electives to tailor the student’s learning experience. The FIU Graduate Catalog language will be changed to reflect the new listing once this proposal is approved. See below for proposed changes to catalog copy based on the curriculum above.

Old Catalog Copy | New Catalog Copy
--- | ---
Master of Science Programs in Adult Education and Human Resource Development | The master's degree program in Adult Education (AE) is designed for the individual who chooses to serve as AHRD director/manager, instructional designer, teacher, instructor, trainer, counselor, and/or researcher. Graduates are working in AHRD programs in business and industry, public schools, hospitals, governmental agencies, community colleges, universities, civic associations, and military and industry, community colleges.
CHANGES TO MASTER OF SCIENCE IN ADULT EDUCATION, continued:

**INTACT: Jo Gallagher**

| Service, and other agencies: Graduate programs of study are designed with regard to an individual's specific interests, needs, and career goals. Two master's degree programs are offered: Adult Education and Human Resource Development. |
|Universities, civic associations, and other agencies. The program of study is designed with regard to an individual's specific interests, needs, and career goals. |

| Admission Requirements |
| Admission Requirements |
| 1. A 3.0 GPA or higher in the last 60 hours of upper-division coursework; |
| 2. A statement of an individual's experiences and responsibilities; |
| 3. A statement of intent (comprising course goals and aspirations and their projected fulfillment as a result of participation in the program); and |
| 4. Three letters of recommendation (combining professional and academic sources). |

**Adult Education (AE)**

The program in Adult Education is designed for those interested in working in public or higher education, adult and continuing education. It consists of a minimum of 36 hours, with 24 hours required, and a minimum of 12 hours of electives.

**Required Program:** (36 hours minimum)  
**Required Core:** (24-24):  
ADE 5081 - Introduction to Adult Education

| Human Resource Development |
| 3 |
| ADE 5381 - Adult Teaching and Learning |
| 3 |
| ADE 53XX - Individual Learning and Education |
| ADE 53XX - Organizational Learning and Human Resource Development |
| ADE 6180 - Processes in AE/HRD |
| 3 |
| ADE 6186 - Comprehensive Program Evaluation in AE/HRD |
| ADE 6260 - Management of AE/HRD Programs |
| ADE 62XX - Adult Teaching Methods |
| ADE 6945 - Internship in AE/HRD |
| EDF 5481 - Foundations of Educational Research |
| Advised Electives (15-hour minimum) |

**Program of Study (AE)**

The program in Adult Education consists of a minimum of 36 hours, with 24 hours required, and a minimum of 12 hours of electives.

**Required Program:** (36 hours minimum)  
**Required Core:** (24):  
ADE 5386 - Individual Learning & Adult Education

| Education |
| 3 |
| ADE 6180 - Organizational & Community Processes |
| ADE 6186 - Comprehensive Program Evaluation in AE/HRD |
| ADE 6260 - Management of AE/HRD Programs |
| ADE 6360 - Adult Teaching Methods |
| ADE 6195 - Perspectives on adults with Disabilities |
| ADE 6945 - Internship in AE/HRD |
| EDF 5481 - Foundations of Educational Research |
| Advised Electives (12-hour minimum) |
CHANGES TO MASTER OF SCIENCE IN HUMAN RESOURCE DEVELOPMENT:
CONTACT: Jo Gallagher

Change of Program Proposal
Changes to Required Courses
Master of Science in Human Resource Development

<table>
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<tr>
<th>OLD PROGRAM REQUIRED COURSES</th>
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<td>(2 credit hours per course)</td>
<td>(3 credit hours per course)</td>
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<td>ADE 5625</td>
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<td>ADE 5183</td>
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<td>Electives (12 hours minimum)</td>
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The faculty of the Department of Educational Leadership and Policy Studies (ELPS) of the College of Education propose the above changes to the list of required courses in the Master of Science in Human Resource Development (EHRD) program. This change represents a further step in the revision to the curriculum. Approved new courses have been created to update the curriculum and provide preparation in individual and organizational learning. The list of courses in the right-hand column reflects the substitution of the new course numbers for the old. The full list of ADE-prefixed graduate courses is included. The number of required courses is not increased, leaving ample room to tailor the student's experience. The FIU Graduate Catalog language will be changed to reflect the new listing once this proposal is approved. ADE 5581 and ADE 5383 will also be deleted from the FIU Graduate Catalog at that time. See below for the proposed catalog copy.

Old Catalog Copy
The Graduate Programs in Human Resource Development are designed for the individual who chooses to serve as an HRD director/manager, instructional designer, teacher, instructor, trainer, counselor, and/or researcher. Graduates are working in EHRD programs in business and industry, public schools, hospitals, governmental agencies, community colleges, universities, civic associations, military service, and other agencies. Graduate programs of study are designed with regard to an individual's specific interests, needs, and career goals.

Two master's degree programs are offered: Adult Education and Human Resource Development.

Admission Requirements
1. A 3.0 GPA or higher in the last 60 hours of upper-division coursework
2. A resume of professional experience and responsibilities
3. A statement of intent (comparing career goals and aspirations and their projected fulfillment as a result of participation in the program)
4. Three letters of recommendation (combining professional and academic sources)

New Catalog Copy
The master's degree program in Human Resource Development (HRD) is designed for the individual who chooses to serve as an HRD director/manager, instructional designer, teacher, instructor, trainer, human performance consultant, organizational developer, counselor, and/or researcher. Graduates are working in HRD programs in business and industry, public schools, hospitals, governmental agencies, community colleges, universities, civic associations, military service, and other agencies. The program of study is designed with regard to an individual's specific interests, needs, and career goals.

Admission Requirements
1. A baccalaureate degree and an undergraduate GPA of 3.0 or higher on a 4.0 scale in the last 60 hours of upper-division coursework
2. A statement of intent, 500 words or less, describing (a) applicant's personal and professional goals and how the degree program will enable the accomplishment of these goals and (b) the ways in which the applicant will be an asset to the program
3. Complete and current résumé listing educational and professional preparation and employment background; and
4. Three letters of recommendation from individuals who can knowledgeably assess and describe the applicant's leadership potential and ability to perform graduate-level work. At least one reference must be from an academic source such as a former professor.

Note: The GRE is not a requirement for admission into the M.S. in Human Resource Development.

Program of Study (HRD)
The program in Human Resource Development consists of a minimum of 36 hours, with 24 hours required and a minimum of 12 hours electives.

Required Program: (36 hours minimum)
Required Core: (24)
ADE 5081 - Instruction to Adult Education and Human Resource Development
ADE 5385 - Adult Teaching and Learning
ADE 5XXX - Individual Learning and Education
ADE 5XXX - Organizational Learning and

Human Resource Development (HRD)
The program in Human Resource Development is designed for persons interested in working in business and industry, government, health, and other similar organizations. The program consists of a minimum of 36 hours, with 24 hours required, and a minimum of 12 hours of electives.

Required Program: (36 hours minimum)
Required Core: (24)
ADE 5385 - Individual Learning & Adult Education
ADE 5387 - Organizational Learning and Human Resource Development
CHANGEs to Master of Science in SPEECH LANGUAGE PATHOLOGY:

INTACT: Eliane Ramos

Program of Study (Old)

Graduate Core Health Sciences Course (3)

SPA 5571 Ethical & Legal Aspects of Health Care Professions 3

Core Courses in Speech Language Pathology (50)

Practical Courses (9)

SPA 5132 Technological Innovations in Speech-Language Pathology 2
SPA 5553 Differential Diagnosis of Communicative Disorders 3
SPA 5805 Research Methodology in Communication Disorders 3

Speech (20)

SPA 5401 Phonological Disorders 3
SPA 5218 Vocal and Volumepathological Disorders 3
SPA 5106 Neurological Baseline of Communication Disorders 3
SPA 6550 Augmentative/Alternative Communication 3
SPA 6565 Dysphagia 2

Language (11)

SPA 5473 Cultural & Linguistic Diversity (CLD) in Communication Disorders 3
SPA 5493 Language Learning in Preschool Children 3
SPA 5404 Language Learning in School-Aged Children 2
SPA 6419 Aphasia and Related Disorders 3

Audiology (3)

SPA 8322 Auditory Habilitation and Rehabilitation 3

Clinical Practicum (12)

SPA 6500 Basic Clinical Practicum 3
SPA 5502 Intermediate Clinical Practicum 3
SPA 6505 Advanced Clinical Practicum 3

One clinical practicum must be repeated for a total of 12 credits in clinical practice.

Research (Thesis–6 credit) or Specialty Track (Non-Thesis–10 credits)

Students are required to select a thesis or a non-thesis option as partial fulfillment of the requirements for the master’s degree. For the thesis option students will enroll in six hours of thesis (SPA 6971) credits. The non-thesis option (10 credits) mandates nine credits of coursework with emphasis on bilingual issues in communication disorders in one of the specialization tracks and one credit for a Master’s Project (SPA 6920). Elective courses taken towards the 10-credit requirement must be approved by the academic advisor.

Specialty Track Requirements

Bilingual Communication Disorders

SPA 6005 Assessment & Treatment of the Bilingual Child with Communication Disorders 3
LIN 5720 Second Language Acquisition 3
SPA 6920 Master’s Project 1

Educational

LIN 5722 Spanish Emphasis in Linguistic Knowledge 3
EEC 6019 Autism 3
SPS 6199 Family School Consultation and Collaboration 3

Gerontological Aspects of Communication Disorders

OTH 5513 Interdisciplinary Approach to Aging 3
DPS 6405 Psychology of Culture and Aging 3
DPS 6406 Cognitive Processes in Aging 3

Medical Speech Language Pathology

PHT 8009 Articulation & Phonetics 3
PHT 8115 International Public Health 3
PHT 8200 Principles of Maternal & Child Health 3
PHT 8238 Genetic Issues in Public Health 3
SPA 6505 Master’s Project 1-6
SPA 6485 Medical Speech Language Pathology 3
SPA 6485 Assessment & Intervention of Medically Complex Children 3
SPA 6481 Genetics & Communication Disorders in Pedodiatric Populations 3
SPA 6505 Medical Clinical Practicum (Advanced) 3

Course Descriptions

Definition of Prefixes

SPA = Speech Language Pathology
SPA 6402 Survey of Communication Disorders (3)
Theory, evaluation, and therapeutic procedures with disorders of speech and language, including but not limited to, articulation disorders, childhood language disorders, aphasia, voice disorders, and disorders of fluency. Prerequisite: Consent of the instructor.

SPA 6404 Introduction to Normal Speech and Language Development (3). The study of normal verbal speech and language acquisition. Prerequisite: Consent of the instructor.

Program of Study (New)

Graduate Core Health Sciences Course (3)

SPA 5621 Ethical & Legal Aspects of Health Care Professions 3

Core Courses in Speech Language Pathology (50)

Practical Courses (8)

SPA 6432 Technological Innovations in Speech-Language Pathology 2
SPA 5553 Differential Diagnosis of Communicative Disorders 3
SPA 5805 Research Methodology in Communication Disorders 3

Speech (20)

SPA 5401 Phonological Disorders 3
SPA 5218 Vocal and Volumepathological Disorders 3
SPA 5216 Vocal and Volumepathological Disorders 3
SPA 5106 Neurological Baseline of Communication Disorders 3
SPA 5322 Augmentative/Alternative Communication 3
SPA 6565 Dysphagia 2

Language (14)

SPA 5473 Cultural & Linguistic Diversity (CLD) in Communication Disorders 3
SPA 5493 Language Learning in Preschool Children 3
SPA 5404 Language Learning in School-Aged Children 2
SPA 6419 Aphasia and Related Disorders 3

Audiology (3)

SPA 8322 Auditory Habilitation and Rehabilitation 3

Clinical Practicum (12)

SPA 6500 Basic Clinical Practicum 3
SPA 5502 Intermediate Clinical Practicum 3
SPA 6505 Advanced Clinical Practicum 3

One clinical practicum must be repeated for a total of 12 credits in clinical practice.

Research (Thesis–6 credit) or Specialty Track (Non-Thesis–10 credits)

Students are required to select a thesis or a non-thesis option as partial fulfillment of the requirements for the master’s degree. For the thesis option students will enroll in six hours of thesis (SPA 6971) credits. The non-thesis option (10 credits) mandates nine credits of coursework with emphasis on bilingual issues in communication disorders in one of the specialization tracks and one credit for a Master’s Project (SPA 6920). Elective courses taken towards the 10-credit requirement must be approved by the academic advisor.

Specialty Track Bilingual Emphasis (Non-Thesis–10 credits)

Students are required to select a thesis or a non-thesis option as partial fulfillment of the requirements for the master’s degree. For the thesis option students will enroll in six hours of thesis (SPA 6971) credits. The non-thesis option (10 credits) mandates nine credits of coursework with emphasis on bilingual issues in communication disorders in one of the specialization tracks and one credit for a Master’s Project (SPA 6920). Elective courses taken towards the 10-credit requirement must be approved by the academic advisor.

Specialty Track Bilingual Emphasis Requirements

SPA 6406 Dual Language Acquisition & Communication Disorders 3
SPA 6005 Assessment & Treatment of the Bilingual Child with Communication Disorders 3
LIN 5722 Second Language Acquisition 3

SPA 6505 Aging & Communication Disorders in a Bilingual Society 3
SPA 6930 Master’s Project 1

Educational

LIN 5722 Spanish Emphasis in Linguistic Knowledge 3
EDU 6204 Autism 3
EDU 6199 Family School Consultation and Collaboration 3

Gerontological Aspects of Communication Disorders

OTH 5513 Interdisciplinary Approach to Aging 3
DPS 6405 Psychology of Culture and Aging 3
DPS 6406 Cognitive Processes in Aging 3

Medical Speech Language Pathology

PHT 6400 Aids Epidemiology and Control 3
PHT 6415 International Public Health 3
PHT 6430 Principles of Maternal & Child Health 3
PHT 6438 Genetic Issues in Public Health 3
SPA 6505 Master’s Project 1-6
SPA 6481 Medical Speech Language Pathology 3
SPA 6485 Assessment & Intervention of Medically Complex Children 3
SPA 6481 Genetics & Communication Disorders in Pedodiatric Populations 3
SPA 6505 Medical Clinical Practicum (Advanced) 3

Course Descriptions

Definition of Prefixes

SPA = Speech Language Pathology
SPA 4002 Survey of Communication Disorders (3)
Theory, evaluation, and therapeutic procedures with disorders of speech and language, including but not limited to, articulation disorders, childhood language disorders, aphasia, voice disorders, and disorders of fluency. Prerequisite: Consent of the instructor.

SPA 4004 Introduction to Normal Speech and Language Development (3). The study of normal verbal speech and language acquisition. Prerequisite: Consent of the instructor.
CHANGES TO MASTER OF SCIENCE IN SPEECH LANGUAGE PATHOLOGY, continued:

CONTACT: Elane Ramos

SPA 4011 Speech and Hearing Science (3). Study of speech and hearing physiology, acoustic phonetics, and speech perception. Prerequisite: Consent of the instructor.

SPA 4039 Introduction to Audiology (3). Principles of auditory reception; the hearing mechanism; problems involved in measuring, evaluating, and conserving hearing. Prerequisite: Consent of the instructor.

SPA 4050 Clinical Management in Communication Disorders (3). This course should be taken in the last semester of ungraduates; prerequisite study. Clinical procedures for working in various practice settings, using diagnostic and therapeutic techniques; writing behavioral objectives, procedures for report writing, and practical experience with clinic made and commercial materials. Provides directed clinical observation of the evaluation and rehabilitation of individuals with speech, language, and hearing problems. A minimum of 25 clock hours of observation will be required. Prerequisite: Consent of the instructor.

SPA 4011 Anatomy and Physiology of Speech and Hearing (3). Anatomy and physiology of the speech and hearing mechanisms, including neuroanatomy, respiration, phonation, articulation/resonance, the nervous system, and the auditory system. Prerequisite: Consent of the instructor.

SPA 4101L Anatomy and Physiology of Speech and Hearing Lab (1). Lab to accompany SPA 4101. Prerequisite: Permission of instructor. Corequisite: SPA 4101.

SPA 4112 Principles of Phonetics (3). Principles of phonetics and their application to speech. Classification of speech sounds according to various systems including, but not limited to, alphabetic, place, distinctive features, and phonological processes. Phonemic transcription utilizing the International Phonetic Alphabet. Prerequisite: Consent of the instructor.

SPA 5166 Neurological Bases of Communication (3). The anatomical and physiological aspects of the central and peripheral nervous system as they pertain to communicative acquisition and disorders. Prerequisite: Permission of instructor.

SPA 5112 Technological Innovations in Speech-Language Hearing Sciences (3). Technological innovations in speech-language hearing sciences: lecture and laboratory exercises in the use of audio recordings, acoustic analysis and synthesis instrumentation. Prerequisite: Consent of the instructor.

SPA 5216 Vocal and Velopharyngeal Disorders (3). Study of pathology, symptoms, and treatment strategies for a variety of vocal and cranial-facial disorders. Prerequisite: Consent of the instructor.

SPA 5225 Fluency Disorders (3). Theories, assessment and treatment techniques for persons across the lifespan with fluency disorders. Prerequisite: Consent of the instructor.

SPA 5401 Phonological Disorders (3). An examination of normal and deviant articulatory acquisition and behavior. Presentation of major theoretical orientations and therapeutic principles used to correct articulation disorders. Prerequisite: Consent of the instructor.

SPA 5403 Language Learning in Preschool Children (3). Presentation of the developmental stages of language development in children ages 0-5 years as well as the delays and disorders associated with language. Prerequisite: Consent of the instructor.

SPA 5404 Language Learning in School-Aged Children (3). Overview and evaluation of the language skills of preschool and school aged children including articulatory and discourse development. Prerequisite: Consent of the instructor.

SPA 5473 Cultural, Linguistic Diversity in Communication Disorders (3). A study of the relationship between culture and communication with application to assessment and intervention. Prerequisite: Consent of the instructor.

SPA 6500 Basic Clinical Practicum (3). Supervised practice with representative speech and language problems in the school setting. Prerequisite: Consent of the instructor.

SPA 5553 Differential Diagnosis of Communicative Disorders (3). The administration, evaluation and reporting of diagnostic and procedures used in assessment of speech and language disorders. Prerequisite: Consent of the instructor.

SPA 6565 Dysphagia (3). Information and training in the evaluation and treatment of swallowing disorders. Prerequisite: Consent of the instructor.

SPA 6593 Master's Project (1-4). This course provides the student with an opportunity to explore in-depth a specific topic of interest in speech pathology. Prerequisite: Permission of the instructor.

SPA 4011 Speech and Hearing Science (3). Study of speech and hearing physiology, acoustic phonetics, and speech perception. Prerequisite: Consent of the instructor.

SPA 4039 Introduction to Audiology (3). Principles of auditory reception; the hearing mechanism; problems involved in measuring, evaluating, and conserving hearing. Prerequisite: Consent of the instructor.

SPA 4050 Clinical Management in Communication Disorders (3). This course should be taken in the last semester of undergraduate prerequisite study. Clinical procedures for working in various practice settings, using diagnostic and therapeutic techniques; writing behavioral objectives, procedures for report writing, and practical experience with clinic made and commercial materials. Provides directed clinical observation of the evaluation and rehabilitation of individuals with speech, language, and hearing problems. A minimum of 25 clock hours of observation will be required. Prerequisite: Consent of the instructor.

SPA 4011 Anatomy and Physiology of Speech and Hearing (3). Anatomy and physiology of the speech and hearing mechanisms, including neuroanatomy, respiration, phonation, articulation/resonance, the nervous system, and the auditory system. Prerequisite: Consent of the instructor.

SPA 4112 Principles of Phonetics (3). Principles of phonetics and their application to speech. Classification of speech sounds according to various systems including, but not limited to, alphabetic, place, distinctive features, and phonological processes. Phonemic transcription utilizing the International Phonetic Alphabet. Prerequisite: Consent of the instructor.

SPA 5166 Neurological Bases of Communication (3). The anatomical and physiological aspects of the central and peripheral nervous system as they pertain to communicative acquisition and disorders. Prerequisite: Permission of instructor.

SPA 5112 Technological Innovations in Speech-Language Hearing Sciences (3). Technological innovations in speech-language hearing sciences: lecture and laboratory exercises in the use of audio recordings, acoustic analysis and synthesis instrumentation. Prerequisite: Consent of the instructor.

SPA 5216 Vocal and Velopharyngeal Disorders (3). Study of pathology, symptoms, and treatment strategies for a variety of vocal and cranial-facial disorders. Prerequisite: Consent of the instructor.
CHANGES TO GRADUATE CERTIFICATE IN MANAGEMENT IN SOCIAL WORK:
CONTACT: Mary Helen Hayden

Justification: This certificate was approved in bulletin #5 in the spring, 2002. The following change is being requested in order to add an additional selection to the optional courses.

OLD Program:
All certificate students will be required to take the three required courses as well as the two from the approved list.

Required Courses:
SOW 5444 Theory & Practice with Com. & Org.
URS 6654 Applied Organizational Theory & Behavior
SOW 5555 Writing & Managing Grants for Social Service Programs

Select two from the following:
PAD 6305 Public Financial Management
PAD 5435 Administration & the Role of Women
HSA 6425 Mental Health Admin. & Planning
URS 5645 Strategic Planning in Public & Non-Profit Organizations
URS 6778 Leadership & Decision Making

Total credits required: 15

NEW Program:
All certificate students will be required to take the three required courses as well as the two from the approved list.

Required Courses:
SOW 5444 Theory & Practice with Com. & Org.
URS 6654 Applied Organizational Theory & Behavior
SOW 5555 Writing & Managing Grants for Social Service Programs

Select two from the following:
PAD 6205 Public Financial Management
PAD 5435 Administration & the Role of Women
HSA 6425 Mental Health Admin. & Planning
URS 5645 Strategic Planning in Public & Non-Profit Organizations
URS 6778 Leadership & Decision Making
SDW 6387 Social Service Management Skills

Total credits required: 15
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

INTACT: Arvind Agarwal

Mechanical and Materials Engineering

George S. Dalkasrachvili, Chair, Professor and Head
Arvind Agarwal, Assistant Professor

1. Multidisciplinary Design Optimization and Inverse Design

2. Computational Analysis and Distributed Parallel Computing

3. Nanomaterials Engineering

4. Laser and Nanomaterials Processing

5. Nanomaterials

6. Nanotechnology

7. Electronic Packaging

8. Optical Engineering

9. Optical Measurement and Diagnostics

10. Waste Management

11. Renewable Energy

Materials Science and Engineering is a dynamic field involved in the synthesis, structure, properties and performance of materials. Advanced materials are the foundation of manufactured products and many of the technological advances of the century were enabled by the development of new materials. Materials Science and Engineering is a graduate program only, with undergraduate electives offered in the Materials Engineering curriculum to prepare the student for graduate education in materials science and engineering. The academic program offers specialization in metals, ceramics, electronic materials, nanomaterials, polymers, and biomaterials. There is an increasing demand for graduates in materials science and engineering, with high technology industries leading the way. In fact, many of the companies needing materials scientists and engineers did not exist 20 years ago. Thanks to everyone’s hard work and efforts, our students are rapidly developing, and the materials science and engineering growth field is expanding.

Opportunities also exist for conducting research in the following centers:

Advanced Materials Engineering Research Institute (AMERI): This center provides open access to research instrumentation, characterization capabilities and process development laboratories to support materials science and engineering research in India and for the research on nanomaterials for India.

The Center for the Study of Materials under Extreme Conditions (CesMERC): This center’s research is directed towards the study of materials, particularly nanophase materials.

Mechanical Engineering, a major division of the engineering profession, plays a major role in our technologically advanced society. The design and manufacturing of machines, plants, automobiles, aircrafts, robots to improved methods of production and propulsion by industrial robots, are a few important inventions that would not have been realized without the creativity associated with the mechanical engineering profession. The mechanical engineering is a vital ingredient in most industries that require automation, computers and medical technology, as well as areas as diverse as space exploration, environmental control and bioengineering. In fact, the mechanical engineer has a direct input in all facets of modern life. There is a high demand for graduates in mechanical engineering from high technology industries throughout the United States and the developing world. The Mechanical and Materials Engineering program at the University of Illinois provides well-trained, and technologically competent graduates to serve these industries.

The academic program provides a well-balanced curriculum in the following areas of specialization:

- Mechanical Systems
- Robotics and Mechatronics
- Thermofluid Systems
- HVAC
- Material Characterization
- Manufacturing and Automation Systems
- Materials Science and Engineering

Certification in Mechanical Engineering

- Up to 20 pages of text in one paragraph.

Action 05/09/2005
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

Master of Science in Mechanical Engineering

Admission Requirements

The Department of Mechanical and Materials Engineering offers both thesis and non-thesis options for the Master's Degree in Mechanical Engineering. A student seeking the was not part of a previously awarded degree may be admitted to the study plan plus a minimum of six hours of masters research.

Non-thesis option: Successfully completed a minimum of 33 semester hours of graduate course work as specified in an approved study plan containing at least 9 hours of 6000 level courses with a GPA ≥ 3.0 (not more than six semester hours transferred from another accredited graduate program that was not part of a previously awarded degree may be incorporated in the study plan).


Non-thesis option: Successful completion of a final oral comprehensive examination covering the general objectives of the study plan.

7. Students must achieve an overall GPA ≥ 3.0 in all graduate work completed at FIU in their approved study plan.

8. Students must complete Graduate Seminar course.

9. Students must comply with all relevant University policies and regulations.

Thesis Option

A student shall complete a minimum of 24 semester credit hours of course work, plus a minimum of 6 semester credit hours of EML 6971, Master's Thesis Research, and take MME Graduate Seminar.

The course requirements include a minimum of 12 hours of 6000-level course credit including thesis hours. A maximum of 6 credit hours of courses offered by other departments may be included among the 24 course hour minimum. A maximum of three credit hours of approved independent studies, EML 6000, may be counted toward the M.S. thesis degree. A maximum of six graduate credit hours can be transferred from other accredited institutions provided that the courses have not been used for another degree and have a minimum letter grade of 'B' and meet university requirements. Transfer courses must be approved by the advisor and Graduate Coordinator.

Early in the program (before the middle of the second term) the student and advisor will complete a study plan that specifies the courses that will comprise the program. When the thesis research is completed, the student should schedule a defense with an examining committee appointed through the Graduate School consisting of a least three faculty members (at least two of whom should be from the MME Department). The thesis, with an approved cover letter from the advisor, should be given to the examining committee for review not less than four weeks before the scheduled defense. The candidate should prepare to summarize the thesis in the manner of a
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

technical paper using appropriate visual aids in 40 minutes or less. Following the presentation, the candidate will answer questions related to the work from the audience and/or the committee. At the conclusion of the defense, the committee will agree on the outcome—pass or fail—and report the results to the Graduate School. Following the exam the student will implement the committee’s suggestions for improving the draft document. Each committee member must sign the approval form bound in the final document. Copies of the approved thesis must be provided to the advisor, department, and the library.

Non-Thesis Option

Admission Requirements

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ThermoFluid Systems (Each course is 3 credits unless stated otherwise)

EML 5103 Advanced Heat Transfer
EML 6153C Conduction Heat Transfer
EML 6154 Convection Heat Transfer
EML 6155 Radiation Heat Transfer
EML 6712C Advanced Fluid Mechanics
EML 6714 Advanced Gas Dynamics
EML 6725 Computational Fluid Dynamics

Mechanical/Materials (Each course is 3 credits unless stated otherwise)

EGL 5348 Computational Engineering Analysis
EGL 5354 Finite Element Method Appl in ME

Fracture Mechanics

EME 5295 Principles of Composite Materials
EME 5507C Analytical Techn. of Materials Sciences
EME 5905 Advanced Topics in Materials Engineering

EML 6127C Advanced Physical & Mechanical Metallurgy
EML 6165C Polymer Physics & Analytical Techniques
EML 5505 Smart Machine Design and Development
EML 5509 Mechanical Design Optimization
EML 5513 Classical Dynamics
EML 5385 Identification Techniques of Mech. Systems
EML 5562 Advanced Electronic Packaging
EML 6223 Advanced Mech. Vibration Analysis
EML 6233 Failure and Failure Analysis
EML 6505 Advanced Design of Robots

Design and Manufacturing

EML 5385 Identification Techniques of Mechanical Systems
EML 5505 Smart Machine Design and Development
EML 5509 Mechanical Design Optimization

EML 5606 Advanced Electronic Packaging
EML 6208 Control Technology for Robotic Systems
EML 5615 Sensors and Applied Machine Intelligence

EME 5623 Advanced Mechanical Vibration Analysis
EME 6652 Advanced CAD/CAM
EME 6665 Advanced Design of Robots

Master of Science in Materials Science and Engineering (MSMSE)

Admission Requirements

The Department of Mechanical and Materials Engineering offers both thesis and non-thesis options for the Master’s Degree. A student seeking the Master’s degree with or without thesis is required to pass a comprehensive oral or written examination.

All work counted for the Master’s degree must be completed during the six years immediately following the date of admission.

The program provides a broad education, covering more than one field, followed by in-depth studies in areas of interest.

Admission Requirements

The following is in addition to the University’s graduate admission requirements:

1. A student seeking admission into the program must have a bachelor’s degree in engineering, physical sciences, computer science or mathematics from an accredited institution, or, in the case of foreign students, from an institution recognized in its own country as preparing students for further study at the graduate level.

2. An applicant must have achieved a B average, GPA of 3.0 in upper level undergraduate work and a combined score of 1100 on the Graduate Record Examination with the following minimum scores on the individual components: verbal ≥300 and quantitative ≥650.

3. Applicants who have not satisfied the above will be evaluated for probationary or waiver admission.

4. In addition to the above criteria, International graduate student applicants whose native language is not English are required to submit a score for the Test of English as a Foreign Language (TOEFL) or for the International English Language Testing System (IELTS). A total score of 550 on the TOEFL or 6.3 overall on the IELTS is required.

5. The GPA, GRE and TOEFL scores specified above are to be considered minimum requirements for admission. Applicants from science areas other than mechanical engineering will be expected to complete undergraduate courses selected to prepare them for graduate courses in their area of interest. Full admission to the graduate program requires the completion of these background courses with no grades below C and a grade point average of 3.0 or better.

Graduation Requirements

The degree will be conferred when the following conditions have been met:

1. Recommendation of the advisor and faculty of the Department.

2. Certification provided by the Department Chair, College Dean, and University Graduate School that all degree requirements have been met.

3. Completed the two department core course requirements plus the two required core courses in the student’s major area.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

4. Completed undergraduate course deficiencies specified at admission, if any, with no grades below C and a GPA of 3.0.
5. Thesis option: Successfully completed a minimum of 36 semester hours of graduate course work as specified in an approved plan of study with a GPA of 3.0 (the minimum successful grade is a "C" in more than six semester hours transferred from another accredited graduate program that was not part of a previously awarded degree may be incorporated in the study plan) plus a minimum of six hours of master's thesis.
7. Students must achieve an overall GPA of 3.0 in at least two of the three years of prescribed work.
8. Completed one semester of the Graduate Seminar during the spring of the second year.
9. Completed with all relevant University policies and regulations.

Thesis Option
A student shall complete a minimum of 24 semester credit hours of course work, plus a minimum of 6 semester credit hours of EMA 6571, Master's Thesis, and EMA 6572 MME Graduate Seminar.

A maximum of 6 credit hours of courses offered by other departments may be included among the 24 semester course hours minimum. A maximum of three credit hours of approved independent studies, EMA 6906, may be counted toward the minimum of 24 semester credit hours. A maximum of six graduate credit hours can be transferred from other accredited institutions provided that the courses have not been used for another degree and have a minimum letter grade of "B." Transfer courses must be approved by the advisor and Graduate Coordinator.

Early in the program (before the end of the second term) the student and advisor will complete a study plan that specifies the courses that will comprise the program.

When the thesis research is completed, the student should schedule a defense with an examining committee approved through the Graduate School consisting of a thesis advisor and faculty members (at least two of whom should be from the department). The thesis, with an approval cover letter from the advisor, should be given to the examining committee for review not less than forty-five (45) weeks before the scheduled defense. The candidate should prepare to summarize the thesis in the manner of a technical paper using appropriate visual aids in 40 minutes or less. Following the presentation, the candidate will answer questions related to the work thus far or the committee, if the committee, at the conclusion of the defense, the committee will agree on the outcome: pass or fail. The results of the defense are made available to the student.

The student will submit the committee's recommendations for improvement of the draft document. Each committee member must sign the approved form bound in the final document. The thesis must be provided to the advisor, department, and the library.

Non-Thesis Option
A student shall complete a minimum of 36 semester credit hours of graduate course work, and one semester of Graduate Seminar. Non-thesis students are encouraged to do a three credit independent study under the independent study course registration. Up to nine credit hours of graduate course work from other departments may be included among the minimum of 60 credits. A maximum of six graduate credit hours can be transferred from other accredited graduate programs completed with a "C" or better and not counted toward a previous degree may be included in the study plan. The advisor and the Graduate Coordinator must approve transfer courses if they are to be included in a study plan. A maximum of three credits of independent study beyond an independent project may be included in a study plan.

Non-thesis students are required to submit a formal report and presentation of the project, with the report and presentation evaluated by an examining committee that will include a minimum of three faculty members, at least two of whom should be from the department.

Areas of Specialization

- Metals and Alloys
- Electronic Materials
- Ceramics
- Polymers and Biomaterials

Course Requirements

All MS&E degree seeking students must take the following two courses or equivalent plus one seminar as common core courses:

- EMA 6106 Thermodynamics and Kinetics of Materials
- EMA 5001 Physical Materials
- EMA 6906 Graduate Seminar
- Select two of the following courses with advisor approval:
  - EMA 5140 Introduction to Ceramics
  - EMA 6552/SCE Analytical Methods in Material Science
  - EMA 6127C/ME Mechanical Metallurgy
  - EMA 6102C Polymer Science
  - EMA 6359C Electron Microscopy and Materials Science

The remainder of the courses shall be chosen from the electives with consultation of the student's advisor. Additionally, up to six hours may be taken from courses offered by other departments.

MS&E Elective Courses:

- EEL 6332 Thin Film Engineering
- EMA 5103 Laser Thermometry
- EMA 5205 Surface Science
- EMA 5295 Principles of Composite Materials
- EMA 5354 FEM Applications in Engineering
- EMA 5307 Industrial Materials and Engineering
- EMA 6126 Adv. Physical Metallurgy
- EMA 6233 Fatigue and Fracture Analysis
- EMA 6355 Nonlinear Finite Element Analysis
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

Doctor of Philosophy in Mechanical Engineering

Admission Requirements

The requirements for admission to the doctoral program in Mechanical Engineering for applicants having a Bachelor's degree is Mechanical Engineering from an accredited institution are the following:

- GPA of at least 3.04.0 in the last 60 upper level credit hours
- GRE of at least 2980 points on the verbal and quantitative sections with the following minimum on the individual components: verbal 450 and quantitative 650
- Three letters of recommendation
- International graduate student applicants whose native language is not English are required to submit a score for the Test of English as a Foreign Language (TOEFL) or for the International English Language Testing System (IELTS). A total score of 550 or 80 on the IBT TOEFL or 6.5 overall on the IELTS is required.
- Applicants having a Master's degree in Mechanical Engineering from an accredited institution must also satisfy the above requirements for admission to the doctoral program; however, a GPA of at least 3.34.0 in the master's program is also required.
- Credentials of all other applicants will be examined by the Graduate Admission Committee on a case-by-case basis.

In addition to the departmental requirements, all students must satisfy the University's Graduate Policies and Procedures.

Identification of Research Area

Within 90 days of acceptance into the Ph.D. program, the student must identify an area of research of his or her interest and being accepted by a professor willing to guide the dissertation research. If no professor is obtained, the student will be dismissed from the Ph.D. program. Contact the department for a list of the graduate faculty members and their research interests.

Course Requirements

Applicants having a Bachelor's degree in Mechanical Engineering are required to complete at least 30 credit hours of which at least 24 hours must be course work and 4 hours dissertation. The credit hours earned towards the Ph.D. program have the following requirements:

1. At least 24 credits at the 5000 level or higher, not to include dissertation.
2. At least 24 credits at the 6000 level or higher, not to include dissertation.
3. A minimum of 12 credits in Mechanical Engineering courses.
4. A minimum of 4 credits in Mathematics.
5. A minimum of 2 credits in Computer Science.
6. A minimum of 2 credits in Statistics.
7. A minimum of 1 credit in Writing.

Applicants entering the Ph.D. program with a Masters degree should meet the following requirements:

- A minimum of 36 semester hours of graduate credit earned from an accredited institution that was not used for a previous degree may be transferred as long as the courses were completed within the six years preceding admission to the program and meet university requirements.

- Having a Master's Degree in any Engineering discipline from an accredited institution may include a maximum of 30 semester hours as part of their requirements.

Elective Courses:

- Advanced Physical & Mechanical Metallurgy
- Polymer Physics & Analytical Techniques
- Smart Machine Design and Development
- Mechanical Design Optimization
- Classical Dynamics
- Identification Techniques of Mechan. Systems
- Advanced Electronic Packaging
- Advanced Mech. Vibration Analysis
- Fatigue and Failure Analysis
- Advanced Design of Robots

Design and Manufacturing

- Identification Techniques of Mechanical Systems
- Smart Machine Design and Development
- Mechanical Design Optimization
- Advanced Electronic Packaging
- Control Technology for Robotic Systems
- Sensors and Applied Machine Intelligence
- Advanced Mechanical Vibration Analysis
- Advanced CAD/CAM
- Advanced Design of Robots
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

Residency Requirements

The program will provide student access to a wide range of support facilities including research library, cultural events, and other occasions for intellectual growth associated with campus life, significant faculty/student interaction, opportunities for student exposure to and engagement with core disciplines and research scholars working in those disciplines, and significant peer interaction among graduate students. Students will be provided with the opportunity for a mentoring apprenticeship relationship with faculty and students as well as adequate time for in-depth evaluation of the student. To satisfy the residency requirement for the Ph.D. degree, the candidate must complete a minimum of 18 credit hours within a period of 12 months at the University.

Graduate Supervisory and Research Committee

The student’s Ph.D. Graduate Supervisory and Research Committee should be appointed as soon as possible and no later than 8 months after being admitted to the Ph.D. program. Consult the Graduate Guidelines in the department for more details on how to select the committee members.

Ph.D. Course Breadth Requirements

Breadth criteria could be satisfied by taking 3 courses in a field/areas outside student’s own field.

Examinations and Proposal and Final Defense

Student must demonstrate graduate knowledge acquisition in four incremental stages in order to be awarded a Ph.D. in Mechanical Engineering.

I. Qualifying Exam (QE)

General written exam to test masters level knowledge.

Stage II - Proposal Defense (Graduate Seminar)

Stage III - Comprehensive Exam (CE) which is the Ph.D. Candidacy Qualification

Stage IV - Final Defense

In the semester prior to hichor taking the QE or CE, student must declare intention to take QE or CE and must obtain a major field or areas of research.

II. Proposal Defense (PD)

The dissertation proposal will be presented by the student in the form of a Graduate Seminar in which he/she must submit a proposal for his/her dissertation.

Students must declare their proposal subject after taking the Qualifying Exam but before taking the Comprehensive Exam.

III. Comprehensive Exam (CE) Candidacy Examination

The objective of the CE is to assess the depth of knowledge in the major field of research. The examination will be developed by the student’s dissertation committee.

It must be taken before the end of the 2nd semester of Year 3.

IV. Final Defense (FD)

There will be a public defense at a graduate seminar. The defense can be held no more than twice.

The final defense should be presented no later than the 4th year after the master’s degree and no later than the 6th year after the teacher’s degree.

Following the successful defense of the dissertation, as determined by a majority vote of the student’s examining committee, the dissertation must be forwarded to the Dean of the College of Engineering and Computing and the Dean of the University Graduate School for their approval.

All dissertations submitted in fulfillment of the requirements for graduate degrees must conform to University guidelines (see "Regulations for Thesis and Dissertation Preparation"). One final and approved copy of the dissertation must be delivered to the Chairperson of the Department of Mechanical Engineering and one to the advisor. Library copies must conform to University guidelines, also published in "Regulations for Thesis and Dissertation Preparation."

Financial Aid

Consult the Department for information on research and teaching assistantships available for doctoral students.

Course Descriptions

Definition of Prefixes

EAS – Engineering Aerospace

EGM – Engineering; Mechanics

Thermo/Fluid

EML 5103 Intermediate Thermodynamics

EML 5104 Classical Thermodynamics

EML 5162 Intermediate Heat Transfer

EML 5606C Advanced Refrigeration & HVAC Systems

EML 5615C Computer Aided Design in HVAC

EML 5708 Advanced Design of Thermal and Fluid Systems

EML 6153C Advanced Heat Transfer

EML 6154 Conduction Heat Transfer

EML 6155 Convection Heat Transfer

EML 6157 Advanced Radiation Heat Transfer

EML 6712C Advanced Fluid Mechanics

EML 6714 Advanced Gas Dynamics

EML 6725 Computational Fluid Dynamics

Mechanics/Materials

EGM 5346 Computational Engineering Analysis

EGM 5354 Finite Element Method Appt in ME and Aerospace Mechanics

EMA 5205 Principles of Composite Materials

EGM 5206 Introduction to Composite Materials

EGM 5627C Advanced Analysis of Materials Sciences

EGM 6567C Advanced Materials Science

Stage II - Proposal Defense (Graduate Seminar)

Stage III - Comprehensive Exam (CE) which is the Ph.D. Candidacy Qualification

Stage IV - Final Defense

In the semester prior to hichor taking the QE or CE, student must declare intention to take QE or CE and must obtain a major field or areas of research.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

EGM 6455 Impact Dynamics (3). Mechanical impact, point-mass collisions, vibratory impact, stress waves in solids, elastic-plastic stress waves, low velocity impact, penetration and perforation applications. Prerequisites: EEM 3321 and EMA 3702.

EGM 6574 Fracture Mechanics (3). Fractures and fracture toughness measurement; crack initiation; fatigue crack growth; stress corrosion cracking. Prerequisite: EEM 5615.

EGM 6581 Cutting Mechanics (3). Study of cutting stress, impact stress, stress and strain waves, tensile failure, shear-laminated failure, responses in cutter and material, mechanics in body, fiber and molecular structures. Prerequisites: EEM 6405 and permission of the instructor.

EGM 6761 Classic Topics of Nonlinear Mechanics (3). Classic topics on nonlinear mechanics such as Theory of Stress and Plasticity of Solids, and the Theory of Jets and Cavities of Fluids. Prerequisites: EEM 5315, EGM 6422, EGM 5615, EEM 5709.

EGM 6597 Industrial Materials and Engineering Design (3). Industrial materials, material selection, and engineering design process, including synthesis, analysis, optimization, and evaluation.

EGM 6516 Physical Properties of Materials (3). The physical properties of materials, including the influence of structure on properties. Thermomechanics of solids and photo-elastic transduction and kinetics on structural development. Prerequisite: EGM 6521C.

EGM 6516N Nanomaterials Engineering (3). The science and engineering of nanomaterials, the fabrication, behavior, and characterization of the nanoparticles and materials. Prerequisites: EGM 3305, EGM 3211.

EGM 6516N Nanomaterials Engineering (3). Course provides an understanding of nanotechnology based on materials engineering. Topics include energy bands in semiconductors, MOVPE scaling, materials processing and other applications. Prerequisite: EGM 3305.

EGM 6517 Nanoparticle Technology (3). An interdisciplinary overview of the nanoparticle engineering. Synthesis of nanoparticles, nanoparticle growth and transport, characterization methods, and applications. Prerequisites: EGM 3305 or permission of the instructor.

EGM 6518 Nanoscale Modelling of Materials (3). Overview of computational nanotechnology. Including simulation and design of nanomaterials. Energy minimization, molecular dynamics and advanced multiscale numerical techniques. Prerequisites: EGM 3305 or permission of the instructor.

EGM 6514 Advanced Mechanical Properties of Materials (3). Advanced treatment of the mechanical behavior of solids; examines crystal plasticity, dislocations, point defects and grain boundaries, creep and fatigue. Prerequisite: EGM 3311 Analysis of Mechanical Systems (3).


EGM 6514N Ceramic Materials (3). Synthesis of ceramics, inorganic glasses, and their microstructure as related to physical properties. Prerequisite: EGM 5540 or Instructor's permission.

EGM 6516 Principles of Composite Materials (3). The mechanical behavior of composite materials used in the properties of ceramics, solid electrolytes, Theory of electron transport in semiconducting and insulating ceramics. Prerequisite: EEM 5146.


EM 5665 Polymer Processing and Engineering (3). Standard and advanced processing methods, characterization of morphology, and molding processing. An industry-based waste analysis integrates heat and mass transport, and fluid flow during materials processing; and the economics of materials processing and recycling. Prerequisite: Permission of instructor.

EMC 5415 Digital Control of Mechanical Systems (3). Discrete modeling of mechanical systems. Digital feedback systems. Computer interface of mechanical systems. Control design with emphasis on hydraulic, pneumatic and electromechanical devices. Prerequisite: EEM 4512.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

EMA 5345 Advanced Topics in Materials Engineering (3). Topics include thermodynamics of solids, principles of physical metallurgy, including phase transformation and diffusion and analytical methods in materials engineering. Prerequisites: EGM 3300 and EGM 3343.

EMA 6126 Advanced Physical Metallurgy (3). Emergent of phase transformation and spinodal decomposition, homogeneous and heterogeneous nucleation in solid state reaction, and martensite transformations. Prerequisites: EMA 4121 or permission of the instructor.

EMA 617C Advanced Physical and Mechanical Metallurgy (3). Advanced topics in physical and mechanical metallurgy including statics and dynamics of dislocations, plastic deformation of fracture, creep, solidification, phase transformation, and heat treatment. Prerequisites: EGM 3300 or permission of the instructor.

EMA 619C Polymer Physics and Analytical Techniques (3). Topics in polymers and the analytical techniques, including mechanical behavior of polymers, plasma processes, X-ray diffraction, scattering and transmission electron microscopy. Prerequisites: EGM 3305 or permission of the instructor.

EMA 619F Advanced Mechanics of Composite Materials (3). Study of micromechanics and mechanical properties in microstructures including fracture, intercalation, and deformation. Prerequisites: EMA 5295.

EMA 6264 Mechanical Properties of Polymers (3). Advanced concepts of solid mechanics and mechanical behavior of polymers; stress-strain relationship, stress transformation, beam bending, elasticity, plasticity and fracture. Prerequisites: EMA 6160 or permission of instructor.


EMA 6133 Intermediate Heat Transfer (3). Multi-dimensional heat conduction under steady and transient conditions, heat, mass and momentum transfer. Radiation heat transfer, conduction, Free and forced convection. Prerequisite: EMA 4140.

EMA 5385 Identification Techniques of Mechanical Systems (3). FFT, time series analysis and neural networks are introduced. Applications of basis techniques are discussed for identification of mechanical structures, and machine diagnostics. Prerequisite: EMA 4312.

EMA 5412 Combustion Processes (3). Introduction to combustion processes, thermodynamics, chemical kinetics, laminar flame propagation, detonations and explosions, flameability and ignition, applications in IC engines and gas turbines. Prerequisites: EMA 3101 and EMA 4140.

EMA 5505 Smart Machine Design and Development (3). Design of independently operating smart electro-mechanical systems (most consumer products) which monitor their environment, give decisions, and create motion. Prerequisites: EMA 4312 or consent of instructor.

EMA 5506 Mechanical Design Optimization (3). Finite element analysis and sensitivity analysis combined with numerical optimization techniques to optimize the design. Prerequisites: EGM 5354 or permission of the instructor.

EMA 6169 Fault-Tolerant System Design (3). Fault tolerance in mechanical, manufacturing, computer, and mechatronic systems. Basic stages of fault isolation. Fault tolerance mechanisms, failures, and mechanical system design methodologies. Prerequisite: EMA 3900.

EMA 5530 Intermediate CAD/CAM (3). Computer aided geometric modeling of spatial mechanical systems. Design criteria and analytical approaches for planner kinematic systems will be emphasized. Prerequisites: EMA 4035 or permission of the instructor.

EMA 5545 Advanced Electronic Packaging (3). Advanced topics in electronic packaging. Evaluation of first through fourth level assembly. Applications of computer layout design, thermal management, and mechanical stability analysis. Prerequisites: EMA 4561 or permission of the instructor.

EMA 6882 Advanced Nondestructive Testing and Mechanical Health Monitoring (3). Theory and application of Nondestructive Testing (NDT) and Mechanical Health Monitoring (MHM). Theoretical aspects will be discussed. Automated interpretation of signals and advanced methods will be presented. Permission of the instructor.

EMA 5103 Intermediate Thermodynamics (3). Thermodynamic approach to processes and engines; alternative formulations and Legendre transformations; irreversible processes and second law of thermodynamics. Prerequisites: EMA 4101.

EMA 5104 Classical Thermodynamics (3). Mathematical analysis of laws of classical reversible, irreversible thermodynamics. Applications to mechanical, electromagnetic, and chemical systems, under dead state and real conditions. Prerequisites: EMA 5101.

EMA 5125 Classical Dynamics (3). Kinematics of rigid body motion, Eulerian angles, Lagrangian equations of motion. Prerequisites: EMA 5125.

EMA 5165C Computer-Aided Design in Air Conditioning (3). Software will be used to demonstrate heating, ventilating and air conditioning design concepts and sizing equipment and determining performance parameters. Project design is required. Prerequisites: EMA 2039 or CEG 2320 or CEG 2423, and EMA 4601.

EMA 5708 Advanced Design of Thermal and Fluid Systems (3). Advanced design of pumps, compressors, heat exchangers, HVAC systems and thermal and fluid control devices. Prerequisite: EMA 4700.


EMA 5748 Boundary Layer Theory (3). Advanced fluid dynamic analysis of the Navier-Stokes equation using boundary layer approximations. Focus will be on solutions of thermal and fluid boundary layers. Prerequisite: EMA 5125.


EMA 5925 Sensors and Applied Machine Intelligence (3). Sensors, signal analysis techniques, and error compensation methods will be introduced for machine intelligence. Production Machine Modeling and Design. Prerequisite: EMA 4312 or permission of the instructor.

EMA 6148 Microlaboratory Transport Phenomena (3). Transport phenomena in small length and time scales are studied. Dissolutions from classical behavior are addressed. Applications include heat transfer in electronics, MEMS, microchannel machining. Prerequisites: EMA 5152, EMA 5705, or permission of the instructor.

EMA 6152 Advanced Heat Transfer (3). Review of analysis pertaining heat, mass and momentum transfer. Free and forced convection from theoretical and empirical viewpoint for laminar and turbulent flows. IBM and supercomputer condensation. Prerequisite: EMA 5192.

EMA 6156 Conductive Heat Transfer (3). Heat transfer by conduction for steady and unsteady one and multidimensional systems with and without heat generation. Temperature distribution analysis using analytical and computational methods. Prerequisite: EMA 4410.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG CONTACT: Arvind Agarwal

EML 5599 Heat Pipe Theory and Applications (3). Heat pipe theory, heat pipe design and its applications, especially in the areas of energy conversion and conservation. Prerequisite: EML 3101 and EML 4140.

EML 5606C Advanced Refrigeration and Air Conditioning Systems (3). The various methods used in the internal design and analysis of both refrigeration and heat pump systems are investigated. Various methods of producing heating and cooling are examined including vapor compression, absorption, air cycle, steam jet, thermoelectric, solar heating and cooling systems. Prerequisite: EML 4601.

continuous systems; vibration control and introduction to vibration of non-linear systems. Prerequisite: EML 4220.

EML 6223 Fatigue and Failure Analysis (3). A study of the theoretical and practical aspects of material failure including failure modes, life prediction, corrosion with the goal of designing a safe product. Prerequisite: EGM 5633.

EML 6518 Advanced Modeling in Mechanical Engineering (3). Basic principles of mathematical modeling following a variety of problems in mechanical engineering. Prerequisites: EGM 4622 and EGM 5615.


EML 6574 Advanced Mechanical Design Optimization (3). Advanced topics in numerical optimization, sensitivity analysis, shape optimization, and finite element analysis. Prerequisite: EML 5509.


EML 6714 Advanced Gas Dynamics (3). Thermodynamic and fluid mechanics principles applied to high speed flows. Flows to be studied include flows with friction and heat loss. Prerequisite: EML 4711.

EML 6725 Computational Fluid Dynamics (3). Basic computational methods for incompressible and compressible flows. Methods for solving the Navier-Stokes equation, boundary conditions for vorticity and stream function equations. Finite difference and finite element techniques. Prerequisites: CGS 2420, EML 6712.

EML 6747 Mechanics of Fluid Flow in Porous Materials (3). The mathematical theory of fluid penetration through porous materials and lungs, heat transfer, fluidized beds, non-stationary flows, and double continua. Prerequisite: EML 4700.

EML 6750 Multiphase Suspension Flow (3). Definition of multiphase flow, experimental observations, mathematical modeling of multiphase systems, measurement techniques, suspension boundary layer flow, and fluidization techniques. Prerequisite: Permission of the instructor.

EML 6805 Advanced Design of Robots (3). Kinematic analysis of mechanisms and robot arms, geometric configurations, analytical and numerical methods in kinematics. Prerequisites: EML 3222, EML 3282, and EML 4501.

EML 6908 Independent Studies (1-3). Individual research studies available for qualified graduate students. The work is to be performed under the supervision of an advisor. A report is to be submitted. Students may register for 1 to 3 credits per semester. Prerequisite: Advisor's permission.

EML 6155 Convective Heat Transfer (3). Development and solution of governing equations of parallel flows, boundary layer flows, instability and turbulence with convective heat transfer. Prerequisite: EML 4140.

EML 6157 Radiation Heat Transfer (3). Heat transfer by radiation for steady and unsteady one and multi-dimensional systems. Radiation parameters affecting different systems will be studied, analytically and numerically. Prerequisite: EML 4140.

EML 6223 Advanced Mechanical Vibration Analysis (3). Multidegree of freedom systems, discrete and
Changes in the Forensic Science Track of the Ph.D. in Chemistry:

CONTACT: David Chatfield

Degree Requirements

The Ph.D. in Chemistry with a Forensic Science track consists of a minimum of 90 credits, including a dissertation based upon the student's original research. A minimum of 28 credits may be transferred from another completed graduate program with approval of the Chemistry Graduate Committee; however, only six credits can be used to substitute for the courses identified as required by the following curriculum.

Analytical Chemistry/Trace Concentration
BSC 5408 Forensic Biology
CHS 5542 Forensic Chemistry
CHS 6249 Forensic Forensics
CHS 5540 Chem Anal. Capstone

Biochemistry/Forensic DNA Concentration
CHS 5538 Chem Anal of Drugs

At least 2 core CHM courses

Elective

CHS 7981 Forensic Dissertation Proposal
CHS 7982 Forensic Dissertation Defense
CHS 7919 Forensic Dissertation Research (min) 8
CHS 7980 Forensic Dissertation
CHS 6335 Forensic Colloquium

Biochemistry/Forensics and Medicine Concentration
BSC 5406 Forensic Biology
CHS 5542 Forensic Chemistry
CHS 5535 Forensic DNA Chemistry

PCR 5685 Population Genetics

At least 2 core CHM courses

Elective

CHS 7981 Forensic Dissertation Proposal
CHS 7982 Forensic Dissertation Defense
CHS 7919 Forensic Dissertation Research (min) 8
CHS 7980 Forensic Dissertation
CHS 6335 Forensic Colloquium

Analytical Chemistry Trace Concentration
BSC 5408 Forensic Biology
CHS 5542 Forensic Chemistry
CHS 6249 Forensic Forensics
CHS 5540 Chem Anal. Capstone

Biochemistry/Forensic DNA Concentration
CHS 5538 Chem Anal of Drugs

At least 2 core CHM courses

Elective

CHS 7981 Forensic Dissertation Proposal
CHS 7982 Forensic Dissertation Defense
CHS 7919 Forensic Dissertation Research (min) 8
CHS 7980 Forensic Dissertation
CHS 6335 Forensic Colloquium

Biochemistry/Forensics and Medicine Concentration
BSC 5406 Forensic Biology
CHS 5542 Forensic Chemistry
CHS 5535 Forensic DNA Chemistry

PCR 5685 Population Genetics

At least 2 core CHM courses

Elective

CHS 7981 Forensic Dissertation Proposal
CHS 7982 Forensic Dissertation Defense
CHS 7919 Forensic Dissertation Research (min) 8
CHS 7980 Forensic Dissertation
CHS 6335 Forensic Colloquium

2. Successful completion (grade of "pass") of a comprehensive examination composed by the student's Dissertation Committee and approved by the Dissertation Advisor in consultation with the Forensic Graduate Committee.

3. Presentation and defense of an original research proposal on a forensic-related topic that is not related to the student's specific doctoral research project. The topic must be approved by the Dissertation Advisor in consultation with the Forensic Graduate Committee. After fulfilling this requirement, preparing the comprehensive exam, and completing all required coursework, the student advances to candidacy.

4. Satisfactory public presentation and defense of a research dissertation, evaluated by the Dissertation Committee. The completion of the Dissertation Committee is as described in section 4 for the Ph.D. in Chemistry track above.

Foreign Students: If your native language is not English, you must obtain a score of 550 or higher in the TOEFL (Test of English as a Foreign Language). All admissions to the Chemistry Ph.D. program must be approved by the chemistry graduate program director.

Advancement to Candidacy

To advance to candidacy, a student must successfully complete all required coursework, pass and defend an original research proposal on a forensic-related topic, pass a comprehensive examination composed by the dissertation committee members. The forensic related topic and comprehensive examination must be approved by the dissertation advisor in consultation with the Forensic Graduate Committee.

Graduation Requirements

The candidate must submit and defend a public dissertation and a dissertation in a hearing committee.
Master of Science in Chemistry

The requirements for completion of the Master of Science degree are:

1. A minimum of 32 credits of course work, a grade of "C" or higher must be obtained in all courses with a cumulative grade point average of 3.0 or higher which must include:
   a) At least 9 credits of chemistry in at least three of the five major areas of chemistry (Analytical, Biochemistry, Inorganic, Organic, and Physical) as listed below:

   - **Analytical**
     - CHM 5190: Advanced Chromatography
     - CHM 5197: Advanced Analytical Chemistry
   - **Biochemistry**
     - CHM 5247: Physical Biochemistry
   - **Inorganic**
     - CHM 5440: Kinetics and Catalysis
   - **Organic**
     - CHM 5540: Group Theory in Chemistry
     - CHM 5650: Physical Inorganic Chemistry
   - **Physical**
     - CHM 5250: Organic Synthesis
     - CHM 5260: Spectroscopic Techniques and Structure Elucidation
     - CHM 5290: Physical Organic Chemistry
     - CHM 5490: Physical Spectroscopy
     - CHM 5540: Group Theory in Chemistry
     - CHM 5640: Advanced Thermodynamics
     - CHM 5681: Statistical Thermodynamics
     - CHM 5690: Quantum Mechanics
     - CHM 5423: Atmospheric Chemistry

   Courses not listed above may be counted as courses in one of the five areas with prior departmental approval.

b) At least 3 credits of additional graduate-level chemistry courses (excluding research seminar or colloquium) approved by the thesis committee in consultation with the Graduate Program Director with the following guidelines:

   1. The courses must be 5000 or 6000 level chemistry courses (CHM prefix) or approved cognates (up to a maximum of six credits) and
   2. The following courses cannot count towards the 18 credits: Graduate Analytical Methods (CHM 5150), Graduate Organic Chemistry (CHM 5215) and Graduate Physical Chemistry (CHM 5425).

c) Full time graduate students are required to register for a 6 credit of CHM 6940 (Supervised Teaching) each semester they serve as teaching assistants.

d) Full time graduate students are required to register for one credit of CHM 6935, CHM 6936 (Graduate Seminar) or one credit of CHM 6930 (Chemistry Colloquium) each fall and spring semester.

e) At least one credit of CHM 6936 (Chemistry Colloquium) is required. Each student must give a seminar at the colloquium for a letter grade in their second semester of graduate study.

f) At least nine credits of CHM 6970 (Thesis Research) involving independent thesis research under the direction of a faculty member in the department.

g) At least two credits of CHM 6971 (Thesis) taken in the semester in which the MS thesis is to be defended.

The thesis committee will consist of the research advisor, a randomly-chosen committee member chosen by the Graduate Program Director, and at least one additional committee member who has some expertise in the graduate student's research area.

Master of Science in Chemistry

Degree Requirements

1. A minimum of 32 credits of course work. A grade of "C" or higher must be obtained in all courses with a cumulative grade point average of 3.0 or higher which must include:

   a) At least nine credits of chemistry in at least two of the five major areas of chemistry (Analytical, Biochemistry, Inorganic, Organic, and Physical) as listed above:

   - **Analytical**
     - CHM 5138: Advanced Mass Spectrometry
     - CHM 5156: Advanced Chromatography
     - CHM 5165: Chromometrics and Imaging
   - **Biochemistry**
     - CHM 6157: Advanced Analytical Chemistry
     - CHM 5325: Physical Chemistry of Proteins
     - CHM 5503: Physical Chemistry of Nucleic Acids
   - **Inorganic**
     - CHM 5506: Physical Biochemistry
     - CHM 5251: Organometallic Chemistry
     - CHM 5440: Kinetics and Catalysis
     - CHM 5540: Group Theory in Chemistry
     - CHM 5650: Physical Inorganic Chemistry
   - **Organic**
     - CHM 5260: Organic Synthesis
     - CHM 5260: Physical Organic Chemistry
     - CHM 5423: Atmospheric Chemistry
   - **Physical**
     - CHM 5490: Physical Spectroscopy
     - CHM 5590: Group Theory in Chemistry
     - CHM 5596: Computational Chemistry
     - CHM 6430: Advanced Thermodynamics
     - CHM 6461: Statistical Thermodynamics
     - CHM 6480: Quantum Mechanics

   Courses not listed above may be counted as core courses with prior departmental approval.

b) At least six credits of additional graduate-level courses approved by the thesis committee in consultation with the Graduate Program Director with the following guidelines:

   1. The courses must be 5000 or 6000 level chemistry courses (CHM prefix) or approved cognates (up to a maximum of six credits).

   (2) The following do not count toward satisfaction of this requirement: proficiency courses and courses taken to make up for undergraduate-level deficiencies in chemistry (including CHM 5155, CHM 5225, CHM 6255, CHM 5425, and CHM 5420); and courses corresponding to research seminars, colloquium, supervised teaching, and thesis completion (CHM 610L, CHM 6255, CHM 6935, CHM 6936, CHM 6940, CHM 6970, and CHM 6971).

   c) Full time graduate students are required to register for one credit of CHM 6940 (Supervised Teaching) each semester they serve as teaching assistants.

   d) Full time graduate students are required to register for one credit of CHM 6935 (Graduate Seminar) or one credit of CHM 6930 (Chemistry Colloquium) each fall and spring semester.

   e) At least one credit of CHM 6936 (Chemistry Colloquium) is required. Each student must give a seminar at the colloquium for a letter grade in their second semester of graduate study.

   f) At least three credits of CHM 6970 (Thesis Research) involving independent thesis research under the direction of a faculty member in the department.

   g) At least two credits of CHM 6971 (Thesis) taken in the semester in which the MS thesis is to be defended.

2. Satisfactory public presentation and defense of a thesis research, evaluated by the student's Thesis Committee. The Thesis Committee will consist of the research advisor and a randomly-assigned committee member appointed by the Graduate Program Director, both from the Department's graduate faculty, and one additional member with expertise in the student's research area. At least one committee member must be favored in the Department. The Committee may include more members, but they will be non-voting.
Doctor of Philosophy in Chemistry

Degree Requirements

1. A minimum of 61 credits of course work. A grade of C or higher must be obtained in all courses, and a cumulative GPA of 3.0 or higher must be maintained. The course work must include:

a) At least nine credits of chemistry courses, including courses from at least two of the five major areas of chemistry (Analytical, Biochemistry, Inorganic, Organic, and Physical) as listed below:

Analytical
CHM 5156 Advanced Chromatography

Biochemistry
CHM 5506 Physical Biochemistry

Inorganic
CHM 5440 Kinetics and Catalysis

Organic
CHM 5250 Organic Synthesis

Physical
CHM 5236 Spectroscopic Techniques & Structure Elucidation

Chemistry
CHM 5260 Physical Organic Chemistry

Reference
CHM 5490 Physical Spectroscopy

Thermodynamics
CHM 6461 Statistical Thermodynamics

Quantum Mechanics
CHM 5423 Quantum Chemistry

Courses not listed above may be counted in one of the five areas with prior departmental approval.

b) At least nine credits of additional graduate-level chemistry courses (excluding research and seminar) approved by the thesis committee in consultation with the Graduate Program Director with the following guidelines:

(1) The courses must be 6000 or 7000 level chemistry courses (including cognates) and not exceed the eighteen credits (a) and (b).

(2) Graduate Analytical Methods (CHM 5150), Graduate Organic Chemistry (CHM 5225), and Graduate Physical Chemistry (CHM 5425).

c) Full-time graduate students are required to register for one credit of CHM 6940 (Supervised Teaching) each semester they serve as teaching assistants.

d) Full-time graduate students are required to register for one credit of CHM 6935 (Graduate Seminar) or one credit of CHM 6926 (Chemistry Colloquium) each fall and spring semester.

e) At least two credits of CHM 6935 (Chemistry Colloquium) is required. Each student must give a seminar at the colloquium for a letter grade in the fall and second semester of graduate study.

f) At least eight credits of CHM 7910 (Dissertation Research) involving independent thesis research under the direction of a faculty member in the department.

g) CHM 7980 (Ph.D. Dissertation) is taken in the semester in which the Ph.D. dissertation is to be defended. Prerequisite: Admission to candidacy.

2. Satisfactory completion of a series of 3-hour cumulative examinations. The student will begin taking the cumulative examinations after completing the prerequisite requirements but no later than the beginning of the student's second semester. Six examinations will be given per year. The student must pass 4 out of 10 consecutively-offered exams for admission to candidacy.

3. Submission, presentation, and satisfactory defense of an original research proposal and completion of a PreCTh examination before the end of the fourth semester (excluding summers).

4. Satisfactory public presentation and defense of a Ph.D. dissertation. The examination will be conducted by the dissertation committee and is based on the student's dissertation research and includes questions from the student's major field as well as minor and cognate fields. The examination consists of a written exam and a final oral defense. The dissertation must be submitted before the end of the fifth semester (excluding summers). The examination will be conducted by the dissertation committee, be based on the student's dissertation research, and include questions from the student's major field and cognate fields. After fulfilling this requirement, passing the comprehensive examinations, and completing all required course work, the student advances to candidacy.

5. Satisfactory public presentation and defense of a research dissertation, evaluated by the Dissertation Committee. The student's Dissertation Committee will consist of the research advisor, a member from outside the Department, a randomly-chosen member appointed by the Graduate Program Director from the Graduate Program Committee, and at least two additional committee members with expertise in the student's research area. At least three members of the Dissertation Committee will consist of a randomly-chosen committee member chosen by the graduate program director from the doctoral research faculty, and at least two additional committee members who have completed dissertation work in the student's graduate research area. The dissertation must be written under the supervision of a faculty member in the Department of Chemistry. The dissertation may include additional members but they will be non-voting.

The requirements for an incoming student having either a Master's Degree or a Bachelor of Science degree are the same. Students having a M.S. in chemistry may transfer as many as 36 credits towards a Ph.D. degree, however only 6 of those credits will count to fulfill requirement 1 (Annual course work requirement). Students may transfer more than 6 course work credits with special permission of the graduate committee, and the number of additional course work credits required by the graduate committee will depend on, among other things, the student's performance in course work, the state course work was completed, and the area of Ph.D. dissertation chosen by the student. The graduate student's Ph.D. thesis committee will consist of the research advisor, a member from outside the department, a randomly-chosen committee member chosen by the graduate program director from the doctoral research faculty, and at least two additional committee members who have completed dissertation work in the student's graduate research area. The dissertation must be written under the supervision of a faculty member in the Department of Chemistry. The dissertation may include additional members but they will be non-voting.

Financial Support

Full-time graduate students who are in good academic standing are eligible for financial support. Teaching and research assistantships are available to qualified students. Additional support may also be awarded to students in need, based on the student's demonstrated financial need. Financial support is subject to the availability of funds and the judgment of the department. The department reserves the right to alter the financial support plan at any time without notice.
### Bachelor of Arts in Architecture

**Contact:** Adam Drisin

#### Old

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**Total Lower Division:** 66

**Upper Division Program (47)**

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**Total Upper Division Electives:** 12

#### New

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**Total Lower Division:** 66

**Upper Division Program (62)**

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**Total Upper Division Credit Hours:** 62
BACHELOR OF ARTS IN ARCHITECTURE, continued:

CONTACT: Adam Drisin

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</table>
### CHANGES TO THE BIOLOGY MAJOR:

**CONTACT:** Case Okubo

**Change in the B.S. in Biology**

- **Old Description**
  - Bachelor of Science in Biology
  - Required Courses:
    - PCB 3043 Ecology 3
    - PCB 3063 Genetics 3
    - PCB 3033 General Biochemistry 4
    - PCB 4674 Evolution 3
    - BSC 4831 Undergraduate Seminar 1
    - Distribution Requirement 12
    - One additional lecture course in each of the following areas:
      - A. Ecology
      - B. Organismal Diversity
      - C. Physiology/Biochemistry
      - D. Structure/Development
        - (If a course satisfies the distribution requirement, the letter of the area that it satisfies is in brackets after the course description.)
      - 7. Biology Electives 1 2 lecture courses 6
      - 8. Laboratory Requirement 2 (Lab) 4
      - 9. Electives outside major 9
      - 10. A minimum of 48 credits must be earned in Upper Division courses.

- **New Description**
  - Bachelor of Science in Biology
  - Upper Division Program
    - Required Courses:
      - PCB 3043 Ecology 3
      - PCB 3063 Genetics 3
      - PCB 4023 Cell Biology 4
      - PCB 4674 Evolution 3
      - BSC 4931 Undergraduate Seminar 1
      - Distribution Requirement 12
      - One additional lecture course in each of the following areas:
        - A. Ecology
        - B. Organismal Diversity
        - C. Physiology/Biochemistry
        - D. Structure/Development
          - (If a course satisfies the distribution requirement, the letter of the area that it satisfies is in brackets after the course description.)
        - 7. Biology Electives 1 2 lecture courses 6
        - 8. Laboratory Requirement 2 (Lab) 4
        - 9. Electives outside major 9
        - 10. A minimum of 48 credits must be earned in Upper Division courses.

### CHANGES TO THE MARINE BIOLOGY MAJOR

**CONTACT:** Case Okubo

**Change in the B.S. in Marine Biology**

- **Old Description**
  - Bachelor of Science in Marine Biology
  - Upper Division Program
    - The upper-division requirements for the BS in Marine Biology include a selection of five common requirements and a choice of four marine electives, including selections from among the physical sciences. The Biological Sciences Distribution Requirement does not apply to the BS in Marine Biology.
    - Common Requirements
      - PCB 3043 Ecology 3
      - PCB 3063 Genetics 3
      - SCH 3033 General Biochemistry 4
      - OCB 3043 Marine Biology and Oceanography 3
      - BSC 4931 Undergraduate Seminar 1

- **New Description**
  - Bachelor of Science in Marine Biology
  - Upper Division Program
    - The upper-division requirements for the BS in Marine Biology include a selection of five common requirements and a choice of four marine electives, including selections from among the physical sciences. The Biological Sciences Distribution Requirement does not apply to the BS in Marine Biology.
    - Common Requirements
      - PCB 3043 Ecology 3
      - PCB 3063 Genetics 3
      - PCB 4023 Cell Biology 4
      - OCB 3043 Marine Biology and Oceanography 3
      - BSC 4931 Undergraduate Seminar 1
CHANGES TO THE BS IN ENVIRONMENTAL STUDIES

CONTACT: David Bray

Upper Division Requirements for Bachelor of Science Degree

Once admitted to the B.S. degree program, students will have to complete the following required courses:

Course (Course Number) [Credit Hours]

Environmental Economics (ECP 3302) [3]
U.S. Environmental Policy (EVR 4352) [3]

Environmental Politics (PUF 4203) [3]

Earth Ethics (RFI 4492) [3]

Ecology + Lab (PCB 3043 + L) [4]

Quantitative Analysis + Lab (CHM 3120 + L) [5]

Environmental Studies Seminar (EVR 4620) [1]

Independent Study (EVR 4900) [2]

Three of the following four courses:

Ecology of Biofuel Resources (EVR 4026) [3]

Water Resources (EVR 4211) [3]

Air Resources (EVR 4231) [3]

Energy Resources (EVR 4311) [3]

Students are urged to develop an area of specialization of 12 to 15 credits, or a minor, in consultation with an advisor. An approved list of such courses is kept in the Department office, and the available courses are published prior to each semester.

CHANGES TO THE BS IN PHYSICS

CONTACT: Laird Kramer

Current Description

BACHELOR OF SCIENCE DEGREE: 120

This program prepares students for careers as professional physicists in industry, government, or graduate study in physics, engineering, or related sciences. It also prepares students for teaching careers.

Students interested in teacher certification should contact the College of Education.

Lower Division Preparation

Required Courses

Chemical Prerequisites

CHM 1045 General Chemistry I

CHM 1045L General Chemistry Lab I

CHM 1046 General Chemistry II

CHM 1046L General Chemistry Lab II

MAC 2311 Calculus I

MAC 2312 Calculus II

MAC 2313 Calculus III

PHY 2048 Physics with Calculus I

PHY 2048L Physics with Calculus Lab I

PHY 2049 Physics with Calculus II

PHY 2049L Physics with Calculus Lab II

Te quality for admission to the program, R.U. undergraduates must have met all the lower division requirements including CLAST, completed 60 semester hours, and must be otherwise acceptable into the program.

Upper Division Program (60)

PHY 3100, PHY 3107 Modern Physics 6

PHY 3100L, PHY 3107L Modern Physics Labs 2

PHY 3513 Thermodynamics 3

PHY 4221, PHY 4222 Mechanics 6

PHY 4323, PHY 4324 Electromagnetism 6

PHY 4404, PHY 4605 Quantum Mechanics 6

PHY 4810L Senior Physics Lab 3

PHY 4805, PHY 4906, PHY 4907 Independent Study 3

Approved electives in experimental or theoretical physics 6

MAP 2302 Differential Equations 3

Electives (Physics or Non-Physics) 46

Proposed Description

BACHELOR OF SCIENCE DEGREE: 120

This program prepares students for careers as professional physicists in industry, government, or graduate study in physics, engineering, or related sciences. It also prepares students for teaching careers.

Students interested in teacher certification should contact the College of Education.

Lower Division Preparation

Required Courses

Chemical Prerequisites

CHM 1045 General Chemistry I

CHM 1045L General Chemistry Lab I

CHM 1046 General Chemistry II

CHM 1046L General Chemistry Lab II

MAC 2311 Calculus I

MAC 2312 Calculus II

MAC 2313 Calculus III

PHY 2048 Physics with Calculus I

PHY 2048L Physics with Calculus Lab I

PHY 2049 Physics with Calculus II

PHY 2049L Physics with Calculus Lab II

To qualify for admission to the program, R.U. undergraduates must have met all the lower division requirements including CLAST, completed 60 semester hours, and must be otherwise acceptable into the program.

Additional Required Courses (6):

PHY 3000, PHY 3001, PHY 3002, PHY 3003, PHY 3004 (To be taken both in Fall and Spring Terms)
CHANGES TO THE PSYCHOLOGY MAJOR:

CONTACT: Leslie Frazier

### EXISTING CATALOG TEXT

**Bachelor of Arts**

Degree Program Hours: 120

**Lower Division Preparation**

|----------------------|--------------------------|------------------------------------|---------------------------------------|-------------------------------------|

To qualify for admission to the program, FIU undergraduates must have met all the lower division requirements including CLAST, completed 60 semester hours, and must be otherwise acceptable into the program.

### PROPOSED CATALOG TEXT

**Bachelor of Arts**

Degree Program Hours: 120

**Lower Division Preparation**

|----------------------|--------------------------|------------------------------------|---------------------------------------|-------------------------------------|

To qualify for admission to the program, FIU undergraduates must have met all the lower division requirements including CLAST, completed 60 semester hours, and must be otherwise acceptable into the program.

**Upper Division Program**

Psychology major requires 36 hours of upper division psychology course work, including STA 3123.

All courses must be taken for a letter grade. A 'C' or better is required for all courses that count toward the major.

The program has the following three major psychology components and a fourth, general, component for graduation:

1. **Specific Required Courses in the Following Sequence (12)**
   - A. Statistics (offered by the Department of Mathematics)
     - STA 3123: Introduction to Statistics I
     - Note: COP 2210 is recommended for students planning to enter graduate school.
     - In: PSY 3213 Research Methods in Psychology (Prerequisites: STA 3123)
     - C. Advanced laboratory or field experience
     - Note: Because the three courses in this component of the program must be taken in sequence, the first course (STA 3123) should be taken no later than the first semester of the junior year.

2. **Upper Division Program**
   - Note: COP 2210 is recommended for students planning to enter graduate school.
   - B. PSY 3213: Research Methods in Psychology (Prerequisites: STA 3123)
   - C. Advanced laboratory or field experience (5 credits) (Prerequisites: STA 3123 and PSY 3213)
   - Students may choose from the following senior labs. All students must register for both the lecture and the laboratory.
     - CYP 4893: Community Field Experience
     - DEP 4704: Developmental Psychology
     - DEP 4720: Psychosocial Interventions

3. **Area Requirement Courses:** (15 credit hours) Students are required to take one course from each area requirement.

4. **Coursework for the Major:** 36 credit hours are required (grade of "C" or better required). Students must complete:
   - The Research Sequence (12 credits), Area Requirements (15 credits), Psychology Electives (9 credits), and Upper Division General Electives (3 credits).

5. **Research Sequence:** (12 credit hours total) Students must take these three courses in the following order:
   - A. STA 3123: Introduction to Statistics I
   - Note: Because the three courses in this component of the program must be taken in sequence, the first course (STA 3123) should be taken no later than the first semester of the junior year.
   - Note: COP 2210 is recommended for students planning to enter graduate school.
   - B. PSY 3213: Research Methods in Psychology (Prerequisites: STA 3123)
   - C. Advanced laboratory or field experience (5 credits) (Prerequisites: STA 3123 and PSY 3213)
   - Students may choose from the following senior labs. All students must register for both the lecture and the laboratory.
     - CYP 4893: Community Field Experience
     - DEP 4704: Developmental Psychology
     - DEP 4720: Psychosocial Interventions

6. **EAB 4034: Advanced Behavior Analysis**
   - DEP 4096: Advanced Experimental
   - EXC 4214: Human Perception
   - EXC 4404: Learning & Memory
   - INP 4050: Industrial/Organizational
   - SOP 4174: Environment & Behavior was SOP 4174
   - PSY 4322: Human Communication
   - SOP 4214C & SOP 4214L: Experimental Social was SOP 4215
   - CLF 4135 & CLF 4135L: Experimental Health was SOP 4331 & SOP 4331A

7. **Area Requirement Courses:** (15 credit hours) Students are required to take one course from each area requirement.
CHANGES TO THE PSYCHOLOGY MAJOR, continued:

CONTACT: Leslie Frazier

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<tr>
<th>Lecture Courses</th>
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<td>EXP 4605</td>
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<td>SOP 3015</td>
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<td>DEP 4464</td>
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<tr>
<th>III. Required Psychology Course Electives: (9)</th>
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<tbody>
<tr>
<td>Any psychology course taken for a letter grade can be used to fulfill the requirement for electives.</td>
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</table>

Note: In some cases a student may fulfill a distribution area requirement with a laboratory course and may still therefore take a lecture course in that area. In such a case, the student must take four (12 hours) elective courses so that the total number of upper division hours for the psychology major reaches the required number of 36 credit hours.

IV. Electives to Complete the requirement of 69 credit hours: (24)

A student may, but is not required to, take additional upper division psychology courses beyond the required 36 hours towards the fulfillment of the 69 upper division credit hours needed for graduation. Students may, with the permission of the instructor, take PSY 4900 and PSY 4918, which are given Pass/Fail grades. These courses can therefore not count in the category of Required Psychology Electives, but they can be used as additional credit towards graduation. There is a College requirement that at least nine hours of elective credit (not including STA 3123) must be outside of Psychology.

Remedies: (1) The student is strongly urged to contact the Psychology Department for advice in curriculum planning; (2) Psychology majors are allowed to transfer a maximum of ten upper division semester credit hours toward the psychology degree.

Definition of Prefixes

CLP—Clinical Psychology; CYP—Community Psychology; DEP—Developmental Psychology; EAB—Experiential Analysis of Behavior; EXP—Educational Psychology; EPP—Experimental Psychology; INP—Industrial and Applied Psychology; LIN—Linguistics; PCE—Psychology for Counseling; PSE—Psychology of Personality; PSB—Psychobiology; PSY—Psychology; SOC—Sociology; SOF—Social Psychology; SPA—Speech Pathology and Audiology

upper level (3000 or 4000) courses. Students must have at least 36 credit hours in total of upper division hours for the psychology major.

4. Electives to Complete the requirement of 68 credit hours: (24 credit hours). At least 9 credit hours of upper division electives outside Psychology. The remaining 15 credit hours may be upper division Psychology electives. Students may, with the permission of the instructor, take PSY 4900, 4914, PSY 4918, which are given Pass/Fail grades. These courses can therefore not count in the category of Required Psychology Electives, but they can be used as additional credit towards graduation.

Please Note: (1) The student is strongly urged to contact the Psychology Department for advice in curriculum planning; (2) Psychology majors are allowed to transfer a maximum of ten upper division semester credit hours toward the psychology degree.

Definition of Prefixes

CLP—Clinical Psychology; CYP—Community Psychology; DEP—Developmental Psychology; EAB—Experiential Analysis of Behavior; EXP—Experimental Psychology; INP—Industrial and Organizational Psychology; PSB—Psychobiology; PSY—Psychology; SOC—Sociology; SOF—Social Psychology; SPA—Speech Pathology and Audiology
CHANGES IN THE CIVIL AND ENVIRONMENTAL ENGINEERING UNDERGRADUATE PROGRAM

CHANGES IN THE CIVIL AND ENVIRONMENTAL ENGINEERING UNDERGRADUATE PROGRAM & CATALOG

CONTACT: Berrin Tansel

05/06: 21

Bachelor of Science in Civil Engineering

Common Prerequisites:

- CHM 1045 General Chemistry I
- CHM 1046 General Chemistry II
- MAC 2311 Calculus I
- MAC 2312 Calculus II
- MAC 2313 Multivariable Calculus
- MAP 2302 Differential Equations
- PHY 2048 Physics with Calculus I
- PHY 2049 Physics with Calculus II
- EGN 3111 Dynamics

Degree Program Hours:

Minimum 120

The Civil Engineering curriculum provides a B.S. degree in Civil Engineering with the fundamental core subjects of the engineering program. The technical interdisciplinary courses are in the areas of mathematics, scientific, environmental, engineering, computer, surveying, transportation, geotechnical, and water resources.

Civil Engineers play an essential role in solving problems and the environmental needs of society. These needs relate to shelter, mobility, water, air, and development of land and physical facilities.

The academic program is designed to meet the State of Florida's articulation policy as well as to satisfy criteria outlined by the Accreditation Board for Engineering and Technology (ABET) regulations.

Lower Division Preparation

To qualify for admission to the upper division program, Civil Engineering undergraduates must have met all the lower division requirements (see the Undergraduate Studies portion of this catalog for specific requirements) including completion of at least 60 semester hours of pre-engineering courses which include "C" or better for Engineers or "C" or better for Computer Tools for ECE, Calculus I & II, Multivariable Calculus, Probability and Statistics, or Evaluation of Engineering Data, Differential Equations, Chemistry I & II and Labs, Physics I with Calculus and Lab, Physics II with Calculus with a grade of "C" or better and must be otherwise acceptable into the program. See the example semester by semester program in the following pages.

Effective pursuit of engineering studies requires careful attention to both the sequence and the type of courses taken. It is therefore important, and the college requires, that each student plan a curriculum with the departmental faculty advisor.

All students must comply with the University Core Curriculum requirements for the University as well as comply with the departmental requirements for Social Science, Humanities, and English. Students may find that some courses satisfy both requirements, therefore it is important to contact the departmental advisor for assistance. The department requires a minimum of 15 semester hours in the areas of Humanities and Social Science. The student should refer to the semester by semester program for a list of approved courses. Requirements also include Engineering Drawing with CAD application (unless previously taken), Engineering Economy and Ethics and Legal Aspects. All transfer students should refer to the General information section of this catalog to determine if they have met the requirements for Humanities, Social Science, and English at their previous institution. Students who transfer from a State of Florida community college with an Associate of Arts degree must fulfill departmental requirements for Social Science and Humanities.

A minimum grade of "C" is required in all writing, physics, chemistry, and mathematics courses.

A minimum grade of "C" is required of all Civil Engineering courses and prerequisite courses.

Students who have been dismissed for the first time from the University due to low grades, may appeal to the Dean for reinstatement. A second dismissal will result in no possibility of reinstatement.

Other Requirements

Students must pass the CLAST or have it waived, must have a minimum 2.0 GPA, meet all pre-engineering and core requirements in order to graduate.

Students who enter the university with fewer than 60 transferred credits must take 6 semester credits. Refer to the appropriate sections in the catalog for more information.

General are to be followed in the proper sequence. Any course taken without the required prerequisites and co-requisites will be dropped at the end of the term, resulting in a "DF" or "UF".

Upper Division Course Objectives
The program of study encourages the development of a broadly educated civil engineering graduate, who can succeed as a productive engineer with a continued professional growth. The courses listed as requirements for the BS degree not only provide the students with mathematical and scientific knowledge, but also include other essentials necessary for a successful engineering career. The courses have been designed to increase student competence in written and oral communication skills as well as develop problem-solving and critical thinking skills. Course projects are designed to teach engineering science fundamentals and their applications while providing enriching opportunities for laboratory and computer-based experience. Furthermore, students are supplied with an understanding of the economic, social, and critical responsibilities of engineers in our society and are encouraged to include sustainable development in all project designs.

Foreign Language Requirement:
Students must meet the University Foreign Language Requirement. Refer to the appropriate sections in the Catalog's General Information for Admission and Registration and Records.

Upper Division Program:
The basic upper division requirements for the BSCE degree are as follows:

**Engineering Sciences (20)**

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<th>Course Title</th>
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<td>EGN 3351</td>
<td>Materials Testing Lab</td>
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<td>EGN 3352</td>
<td>Statics</td>
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<td>EGN 3353</td>
<td>Dynamics</td>
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**Civil Engineering Curriculum (41)**

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<td>CEG 3150</td>
<td>Structural Analysis</td>
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<td>CEG 4025</td>
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<tr>
<td>CEG 4702</td>
<td>Reinforced Concrete Design</td>
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<td>CEG 4903</td>
<td>Civil Engineering Senior Design Project</td>
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</table>

**Combined BSCE Program**

Students who have completed a minimum of 60 hours toward their BSCE degree and have earned at least a 3.3 GPA on both overall and upper division courses may, upon recommendation from three CEE faculty members, apply to the department to enroll in the combined BSCE program. Students enrolled in the program may count up to 9 hours of CEE graduate coursework credits for the BS degree and the MS degree. The BSMS Program has been designed to be a continuous program. Students in BSMS programs will apply for graduation with the BS and MS at the same time. Students will receive a BS degree and a MS degree on the same date, after requirements for both are completed. The student's advisor will ensure that appropriate forms are completed, and that students do not apply for BS degree graduation until both BS and MS requirements are finished. Upon the completion of BS degree requirements, students may "walk" for graduation with their colleagues without receiving their diploma and/or request for a temporary departmental certificate. Students may also elect to permanently leave the combined program at any time and earn only the BS degree. Once the BS is granted, students have the same access requirements to register graduate programs as any other student. However, the combined MS degree would not be available to those who elect to leave the combined program. Admission into the combined program does not automatically qualify the students for admission into the MS degree program. To enroll in the MS degree program, the student must apply (at their senior year) to the graduate school and meet all graduate admission requirements. Undergraduate students enrolled in the program are encouraged to seek employment with a department faculty to work as student assistants on sponsored projects. The students will be eligible for graduate assistantships upon admission into the graduate school. For each of the graduate courses counted as credits for both BS and MS degrees, a minimum grade of B is required. Only graduate courses with formal lectures can be counted for both degrees. The students are responsible for confirming the eligibility of each course with the undergraduate advisor. Students interested in the program can consult with the undergraduate advisor on their eligibility for the program. The students should also set up an appointment with the graduate coordinator to learn about the graduate program and available courses before completing the application form and submitting it to the undergraduate advisor. Applications will be notified by the department on the decision of their application.
### Changes in the Civil and Environmental Engineering Undergraduate Program & Catalog

**Contact:** Berrin Tansel

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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</thead>
</table>
| **First Semester:** (15) | MAC 2311 Calculus I  
CHM 1045 General Chemistry I  
CHM 1045L General Chemistry I Lab  
SLS 1501 Freshman Experience  
ENC 1101 Freshman Composition  
EGN 2030 Ethics & Legal Issues |
| **Second Semester:** (15) | MAC 2312 Calculus II  
ENC 1102 Literary Analysis  
PHY 2046 Physics with Calculus  
PHY 2046L General Physics Lab I  
EGN 1033 Technology, Humane, and Society |
| **Third Semester:** (14) | ECO 2013 Macroeconomics  
ECO 2023 Microeconomics  
MAC 2313 Multivariable Calculus  
CHM 1046 General Chemistry II  
CHM 1046L General Chemistry Lab II  
EGN 1110C Engineering Drawing |
| **Fourth Semester:** (16) | PHY 2049 Physics with Calculus II  
MAP 2302 Differential Equations  
EGN 2310 Computer Tools for CE  
CSE 2119 Evolution of Jazz  
TPP 2100 Introduction to Acting  
CRW 2001 Creative Writing  
THE 2010 Theatre Appreciation  
MAM 2001 Music Appreciation |
| **Fifth Semester:** (12) | EGN 3011 Statics  
EEL 3023 Electrical Engineering I  
SUR 2101C Surveying  
Humans with Writing II |
| **Sixth Semester:** (13) | STA 3033 Introduction to Probability and Statistics  
for CS  
EIN 3205 Evaluation of Engineering Data  
EGN 3231 Dynamics  
EGN 3230 Engineering Mechanics of Materials  
EGN 3230L Engineering Mechanics of Materials Lab I  
ENC 3211 Technical Writing |
| **Seventh Semester:** (14) | CWR 3201 Fluid Mechanics |
# Changes in the Civil and Environmental Engineering Undergraduate Program & Catalog, continued:

**Contact:** Berrin Tansel

## College of Engineering and Computing

### Undergraduate Program Changes

#### Changes in the Civil and Environmental Engineering Undergraduate Program

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<thead>
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**Electives**

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**Electives for Environmental Engineering Options**

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<td>ENV 4461</td>
<td>Solid Waste Management</td>
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<td>ENV 4550</td>
<td>Sewage and Wastewater Treatment</td>
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<td>ENV 4560</td>
<td>Reactor Design</td>
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<td>ENV 4563</td>
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<td>ENV 4564</td>
<td>Biosolids Management</td>
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<td>ENV 4570</td>
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**Electives for Construction Engineering Options**

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<tr>
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<tr>
<td>CCE 5035</td>
<td>Construction Engineering Management</td>
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<td>CCE 5050</td>
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<tr>
<td>CEG 4521</td>
<td>GIS Applications in Civil &amp; Environmental Engineering</td>
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**Note:** Required credits total 130 credit hours. Due to variation in the number of transfer credits awarded, technical electives may be required. Technical electives must be approved by the advisor.
CONTACT: Berrin Tansel
CURRICULUM COMMITTEE BULLETIN NUMBER 2, November 15, 2005

COLLEGE OF ENGINEERING AND COMPUTING

UNDERGRADUATE PROGRAM CHANGES

CHANGES IN THE CIVIL AND ENVIRONMENTAL ENGINEERING UNDERGRADUATE PROGRAM & CATALOG, continued:

CONTACT: Berria Tansel

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COURSE DESCRIPTIONS

Definition of Prefixes

CCE-Construction Engineering; CEG-Engineering, General; CWS-Construction and Water Resources; EGN-Environmental Engineering; ENV-Environmental; ENG-Engineering; ENR-Environmental Resources; I-Interested; SCA-aerospAce.

SCE Surveying and Related Areas; TTE-Transportation and Traffic Engineering.

CCE 4001 Heavy Construction (3). Contractor's organization, contracts, services, safety, planning and scheduling. Equipment and their economics. Special project applications, cofferdams, dewatering, fiber dividers, tunneling. Prerequisite: Permission of the instructor.

CCE 4001 Project Planning for Civil Engineers (3). Introduction to techniques for planning schedules, operations, finances, budget, workloads, quality, safety. Unite case studies as learning tools for students aspiring to superintendent positions.

CEG 4111 Geotechnical Engineering I (3). Engineering geology, soil properties, stresses in soils, failures, cutoffs, consolidation and settlement, compaction, soil improvement and slope stabilization. Prerequisites: CWR 3011 and L, EGM 3520, and L, GNE 1040 and PHY 2040.

CEG 4111L Soil Testing Laboratory (1). Laboratory experiments to identify and test behavior of soils and rocks. Prerequisites: CWR 3011, CWR 3011L, EGM 3520L, EGM 3520. Corequisites: CEG 4011. [Lab fees assessed].

CEG 4112 Geotechnical Engineering II (4). Principles of foundation analysis, design and site improvement for bearing and settlement, soil sampling and testing, retaining walls, cofferdams, piles, shafts, caissons, tunnels, and excavation control. Computer applications. Prerequisites: CEG 4102, CEG 4011 and L.

CEG 4120 Fundamentals of Pavement Design (3). This course is designed to provide the student with a basic understanding of the fundamental principles underlying pavement structural analysis and design. Asphalt Institute, Portland Cement Association and AASHTO methods will be covered. Prerequisites: CEG 4011, CEG 4011L, TTE 4201.

CCE 3100 Structural Analysis (3). To introduce the student to the basic concepts and principles of structural theory relating to statically determinate beams, arches, trusses, and rigid frames, including deflection techniques. Prerequisites: EGM 3520.
CHANGES IN THE CIVIL AND ENVIRONMENTAL ENGINEERING UNDERGRADUATE PROGRAM & CATALOG

CONTACT: Berrin Tansel

CES 4320 Introduction to the Design of Highway Bridges (3). The course covers the different types of modern highway bridges, and systematically analyzes all the components of the superstructure and substructures. Design procedures are based on AASHTO codes and specialized software. Pre-requisites: CEG 4011, CEG 4702.

CES 4600 Introduction to the Design of Tall Buildings (3). The course reviews the different types of modern high-rise structural systems, a simple analysis of wind and seismic loading to efficiently design very tall buildings. Pre-requisites: CEG 4011, CEG 4702.

CES 4605 Steel Design (3). The analysis and design of structural elements and connections for buildings, bridges, and specialized structures utilizing structural steel. Both elastic and plastic designs are considered. Pre-requisites: CEG 3400.

CES 4702 Reinforced Concrete Design (3). The analysis and design of reinforced concrete beams, columns, slabs, retaining walls and footings, with emphasis corresponding to present ACI Building Code. Introduction to prestressed concrete is given. Pre-requisites: CEG 3100 with a grade of 'C-' or better.

CGN 2420 Computer Tools for Civil Engineers (3). Introduction to common civil engineering software such as CAD, COGO, project bidding programs, GIS, and others. Pre-requisites: EGN 1100C or equivalent.

CGN 3499 Co-Op Work Experience (1-3). Supervised full-time work experience in engineering field. Limited to students admitted to the co-op program with consent of advisor. advisor. Pre-requisites: TTE 4201, CEG 3100.

CGN 4321 GIS Applications in Civil and Environmental Engineering (3). Introduction to the basics of geographic information systems and their applications in civil and environmental engineering, land use planning, and other pertinent fields. Pre-requisites: TTE 4201 or CEG 3100 or CWR 3105 or EGN 3530 or equivalent.

CGN 4802 Civil Engineering Senior Design Project (2). Mandatory course for all senior students to experience the design of a practical project by utilizing knowledge learned from previous courses for presenting a solution. Due under the supervision of a faculty member and professional engineer. Pre-requisites: CEG 4011, CEG 4011L, TTE 4201, CEG 4702, Pre-requisites: TTE 4201 or equivalent.

CGN 4939 Special Topics in Civil Engineering (1-4). A course designed to give groups of students an opportunity to pursue special studies not otherwise offered. Pre-requisites: CEG 4011, CEG 4011L, TTE 4201, CEG 4702, Pre-requisites: TTE 4201 or equivalent.

CGN 4949 Co-Op Work Experience (1-3). Supervised full-time work experience in engineering field. Limited to students admitted to the co-op program with consent of advisor. Evaluation and report required.

CGN 4980 Civil Engineering Seminar (1). Basic principles and applications of civil engineering, including structural, transportation, environmental, geotechnical, construction, and water resources engineering for civil engineering students. Pre-requisites: Permission from graduate advisor.

CWR 3163 Water Resources Engineering (3). Hydrologic and hydraulic engineering fundamentals: hydrologic cycle, hyetographs, hydrographs, frequency analysis, pipe systems, turbulence, sedimentary, open channels, structures, and groundwater. Pre-requisites: CWR 3201, CWR 3201L, STA 3533 or EGN 3325.


CWR 3201L Fluid Mechanics Laboratory (1). Application of fluid mechanics principles in the laboratory. Experiments in surface water, ground-water and pipe flow. Corequisite: CWR 3201. (Lab fees assessed.)

EGM 3252 Engineering Mechanics of Materials (3). Analysis of axial, torsional, bending, combined stresses, and strains. Stressing of shear, moment and deflection diagrams with calculus applications and interpretations. Pre-requisites: MAC 2313, MAP 2302 and EGN 3311 with a grade of 'C' or better.

EGM 3280, Materials Testing Laboratory (1). Testing of basic mechanical properties of materials. Experiments include axial tension, compression, bending, flexure, and the relationship of simple structural elements. Pre-requisites or Corequisites: EGM 3130, MAC 2312 and EGN 3311. Lab fees assessed.

EGN 1100C Engineering Drawing (3). Introduction to elementary design concepts in engineering, principles of drawing, descriptive geometry, pictorial and perspectives and their computer graphics counterpart.

EGN 2030 Ethics and Legal Aspects in Engineering (3). Codes of ethics, professional responsibilities and rights, law and engineering, contracts, law and evidence.

EGN 3311 Statics (3). Force on particles, equilibrium of forces, moments, couples, centroids, section properties, and load analysis of structures. Pre-requisites: MAC 2512 and PHY 2048.

ENV 2501 Introduction to Environmental Engineering (3). Introduction to environmental engineering problems; water and wastewater treatment, air pollution, noise, solid and hazardous wastes. Pre-requisites: CHM 1046 and CHM 1046L, MAC 2312 and permission of undergraduate advisor. Corequisite: ENV 3001L.

ENV 3001L Environmental Laboratory (1). A corequisite to ENV 3001. Practical applications of the theory learned in the course and experience in detecting and measuring some environmental problems. Pre-requisites: CHM 1046 and CHM 1046L, MAC 2312 and permission of undergraduate advisor. Corequisite: ENV 3001L. Lab fees assessed.

ENV 3549 Co-Op Work Experience (1-3). Supervised full-time work experience in engineering field. Limited to students admitted to the co-op program with consent of advisor.

ENV 4024 Bioremediation Engineering (3). Biotransformation of sub-surface contaminants in gaining recognition as a viable treatment tool. This course
provides students with quantitative methods required to design bioremediation systems. Prerequisite: ENV 3001 and ENV 3001L.

ENV 4101 Elements of Atmospheric Pollution (3). The air pollution problem: causes, sources, and effects. Historical development, physical, political, and economic factors in its control. Prerequisites: CWR 3001 and CWR 3201L, or CWR 3125 and 3125L, ENV 3001 and ENV 3001L.

ENV 4556 Hazardous Waste Assessment and Remediation (3). Generation, transport, treatment and disposal of hazardous waste: risk assessment and treatment of contaminated media. Prerequisites: One year of General Chemistry.

ENV 4201 Solid Waste Management (3). Sources, amounts and characteristics of solid waste; municipal collection systems; method of disposal; energetic consideration in the recovery and recycle of wastes. Prerequisites: PHV 2040, and CHM 1010 and CHM 1040L.

ENV 4401 Water Supply Engineering (3). Quantity, quality, treatment, and distribution of drinking water. Prerequisites: CWR 3001 and CWR 3201L, ENV 3001 and ENV 3001L. Corequisite: ENV 4401L.

ENV 4401L Water Laboratory (1). Laboratory exercises in the physical, chemical, and bacteriological quality of potable water. Prerequisites: CWR 3201, ENV 3001 and ENV 3001L. Corequisite: ENV 4401L (Lab fees assessed).

ENV 4511 Reactions in Environmental Engineering Systems (3). A practical basis for understanding microbial and physicochemical principles to understand reactions occurring in natural and engineered systems including water/wastewater treatment processes. Prerequisite: Permission of the instructor.

ENV 4551 Sewerage and Wastewater Treatment (3). Collection and transportation of wastewater, design of sanitary and storm sewers. Physical, chemical, and biological principles of wastewater treatment. Prerequisites: CWR 3201 and CWR 3201L, ENV 3001 and ENV 3001L.

ENV 4681 Wastewater Laboratory (1). Laboratory exercises in the physical, chemical, and bacteriological quality of raw and treated wastewaters. Prerequisites: CWR 3201 and CWR 3201L, ENV 3001 and ENV 3001L. Corequisite: ENV 4681L (Lab fees assessed).

ENV 4690 Reactor Design (3). A theoretical and practical basis for reactor design to understand multi-phase reactions, analysis and design of batch and continuous flow reactors.

ENV 4830 Special Topics in Environmental Engineering (1-4). A course designed to give groups of students an opportunity to pursue special studies not otherwise offered.

ENV 4949 Co-op Work Experience (3). Supervised full-time work experience in engineering field. Limited to students admitted to the co-op program with consent of advisor. Evaluation and reports required.
CURRICULUM COMMITTEE BULLETIN NUMBER 2, November 15, 2005

COLLEGE OF ENGINEERING AND COMPUTING

UNDERGRADUATE PROGRAM CHANGES

HANGES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM &

CONTACT: Sabri Tosunoglu

机械和材料工程

工程

George S. Dull, Chairman and Professor
Arvind Agarwal, Assistant Professor
Professors
Wei-Tu Bao, Coordinator of Research
Yiding Cao, Associate Professor
Woosung Choi, Associate Professor
M. Ali Ekhtesas, Professor
Dennis Fan, Assistant Professor
Gordon Napolitano, Professor and Dean Emeritus
W. Kristin Jensen, Professor and Director, Advanced Materials Engineering Research Institute
Sahyoun Javadi, Assistant Professor
Cesar Levy, Professor
Norman McLean, Associate Professor
Sundara Suresh, Associate Professor
Vish Prasad, Distinguished Professor, Interim Dean
College of Engineering
Hien Tran, Assistant Professor
Suresh Suresh, Professor
Carmen Schneid, Adjunct Instructor
Jin Suo, Visiting Instructor
Ibrahim Tansel, Associate Professor
Yang Xin Tao, Associate Professor and Undergraduate Program Director
Sabri Tosunoglu, Associate Professor
Kusang Hei Wu, Professor
Hewing Yang, Associate Professor

机械和材料工程

部门使命

The Mechanical and Materials Engineering Department at Florida International University (FIU) offers a curriculum designed to give the student a thorough understanding of the basic laws of science and simultaneously to stimulate sound judgment and environmental consciousness. The aim is to develop the student’s potential to the fullest, to prepare the student for superior performance as a mechanical engineer, and to provide the student with the fundamental principles necessary for pursuing advanced study in the diverse fields of engineering, science and business.

The Program Outcomes listed below have been established based on the Mechanical Engineering Program Educational Objectives:

1. The graduate will demonstrate the ability to formulate and solve problems in the field of mechanical engineering.
2. The graduate will demonstrate the ability to apply the principles of mechanics and materials to the solution of practical problems.
3. The graduate will demonstrate the ability to apply the principles of thermodynamics and heat transfer to the solution of practical problems.
4. The graduate will demonstrate the ability to apply the principles of fluid mechanics and fluid dynamics to the solution of practical problems.
5. The graduate will demonstrate the ability to use computers and computer tools to solve engineering problems.
6. The graduate will demonstrate the ability to communicate effectively through written and oral presentations.
7. The graduate will demonstrate the ability to work effectively in a team.
8. The graduate will demonstrate the ability to apply ethical principles in the practice of mechanical engineering.
9. The graduate will demonstrate the ability to pursue lifelong learning through self-directed study.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM & CATALOG, continued:

CONTACT: Sabri Tosunoglu

PhD 2049L General Physics Lab II

Degree Program Hours: 128

The qualifications for admission to the Department of Mechanical and Materials Engineering are the same as for admission to the School of Engineering.

The academic program is designed to satisfy the criteria outlined by the Accreditation Board for Engineering and Technology (ABET), as well as to meet the State of Florida's articulation policy. Entering freshmen at FIU should seek advisement from the Undergraduate Studies Office as well as from the Mechanical and Materials Engineering Department's office of advisement.

Lower Division Preparation

Lower division requirements include at least 60 hours of pre-engineering credits (see the Undergraduate Studies portion of this catalog for specific requirements). These courses include Introduction to Calculus (12 semester hours), Calculus I, II, III, Differential Equations, Analysis of Engineering Systems, Chemistry I and Lab, Calculus based Physics I & II and lab and

Further specialization in any of the following may be obtained by the proper choice of electives:

- Energy Systems
- Heating, Ventilation, and Air Conditioning
- Mechanics and Material Sciences
- Manufacturing
- Robotics
- Design
- Manufacturing and Automation Systems
- Robotics and Mechatronics
- Mechanical Design
- Computer-Aided Engineering
- Multidisciplinary Design Optimization
- Pre-Calc and Analytical Geometry
- Finite Element Analysis
- Environmental and Waste Management

A Bachelor's degree in Mechanical Engineering provides students with the background suitable for immediate employment in engineering industries, as well as excellent preparation for graduate studies in Engineering, Medicine, Law, or Business Administration.

Bachelor of Science in Mechanical Engineering

Common Prerequisites:

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Graduate Programs:

Mechanical Engineering Curriculum

Engineering Science, Engineering Design, Laboratory and Elective semester credit hour requirements:

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HANES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM & CATALOG, continued

CONTACT: Sabri Tosnoglu

Undergraduate Catalog

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<td>EGN 3343</td>
<td>Thermodynamics I</td>
<td>3</td>
</tr>
<tr>
<td>EN 3301</td>
<td>Electrical Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>EN 3311L</td>
<td>Circuits Lab</td>
<td>1</td>
</tr>
<tr>
<td>EN 3301L</td>
<td>Instrumentation &amp; Measurement Lab</td>
<td>1</td>
</tr>
<tr>
<td>EML 4500</td>
<td>Mechanical Lab-I</td>
<td>3</td>
</tr>
<tr>
<td>EML 4500</td>
<td>Mechanical Design I</td>
<td>3</td>
</tr>
<tr>
<td>EML 4501</td>
<td>Mechanical Design II</td>
<td>3</td>
</tr>
<tr>
<td>EML 4700</td>
<td>Design of Thermal and Fluid Systems</td>
<td>3</td>
</tr>
<tr>
<td>EML 4551</td>
<td>Design Project Organization</td>
<td>1</td>
</tr>
<tr>
<td>EML 4905</td>
<td>Senior Design Project</td>
<td>3</td>
</tr>
<tr>
<td>Design Electives</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

*These courses are four contact hours to include a one-hour non-credit tutorial.

The Senior Design Project is taken in two consecutive semesters during the senior year. During the first semester of the senior year, students are required to register for EML 4551 Design Project Organization. The senior project must be completed by the end of the senior year. At this time, students must register for EML 4905 to complete the project.

Electives

1. Students who are dismissed for the first time from the University due to low grades may appeal to the Dean for reinstatement. A second dismissal results in no possibility of reinstatement.

Laboratories

Over and above the laboratory requirements in Physics and Chemistry, the program consists of six semester hours of required Engineering laboratory work. The students are assigned two hours of laboratory work (one hour in Instrumentation and Measurement Lab and one hour in Mechanical Lab) which are specifically devoted to solving design problems using experimental methods. The laboratory experience includes the following areas: Measuring, Circuits, Fluid Mechanics, Mechanics of Materials and Materials Testing, Applications in Fluid and Thermal Science, and Instrumentation and Measurement.

The elective areas offer the following additional laboratories: Air Conditioning and Refrigeration, Biomedical Engineering, Material Sciences, Manufacturing, and Energy Systems.

Fluids/Thermal Sciences and Energy Systems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGN 4350</td>
<td>Finite Element Analysis in Mechanical Design</td>
<td>3</td>
</tr>
<tr>
<td>ELM 3450</td>
<td>Energy Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4419</td>
<td>Process Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4421</td>
<td>Internal Combustion Engines</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4525</td>
<td>Mechanical Design Synthesis and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4601</td>
<td>Principles of Refrigeration and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4601L</td>
<td>Refrigeration and A/C Lab</td>
<td>1</td>
</tr>
<tr>
<td>ELM 4603</td>
<td>Air-Conditioning Design</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4608C</td>
<td>Mechanical Systems in Environmental Control</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4712</td>
<td>Fluid Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ELM 4711</td>
<td>Gas Dynamics</td>
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<tr>
<td>ELM 5103</td>
<td>Intermediated Thermodynamics</td>
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</tr>
<tr>
<td>ELM 5104</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ELM 5152</td>
<td>Intermediate Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ELM 5600C</td>
<td>Advanced Refrigeration and A/C Systems</td>
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</tr>
<tr>
<td>EML 5010G</td>
<td>CAD in Air Conditioning</td>
<td>3</td>
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<tr>
<td>EML 5708</td>
<td>Advanced Design of Thermal and Fluid Systems</td>
<td>3</td>
</tr>
<tr>
<td>EML 5709</td>
<td>Intermediate Fluid Mechanics</td>
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### Mechanics, Materials and Design

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EGM 4110</td>
<td>Finite Element Analysis in Mechanical Design</td>
<td>3</td>
</tr>
<tr>
<td>EGM 5151</td>
<td>Intermediate Analysis of Mechanical Systems</td>
<td>3</td>
</tr>
<tr>
<td>EGM 5610</td>
<td>Synthesis of Engineering Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>EGM 5907</td>
<td>Industrial Materials and Engineering Design</td>
<td>3</td>
</tr>
<tr>
<td>EMA 3066</td>
<td>Polymer Science and Engineering</td>
<td>3</td>
</tr>
<tr>
<td>EMA 4121</td>
<td>Physical Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>EMA 4252</td>
<td>Industrial Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>EMA 5265</td>
<td>Principles of Composite Materials</td>
<td>3</td>
</tr>
<tr>
<td>EMA 6007C</td>
<td>Analytical Techniques of Material Science</td>
<td>3</td>
</tr>
<tr>
<td>EMA 5635</td>
<td>Advanced Topics in Materials Engineering</td>
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### Instrumentation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EML 3301C</td>
<td>Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>EML 4525</td>
<td>Mechanical Design Synthesis and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EML 4535</td>
<td>Mechanical Computer-Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>EML 5125</td>
<td>Introduction to Electronic Packaging</td>
<td>3</td>
</tr>
<tr>
<td>EML 5385</td>
<td>Identification Techniques of Mechanical Systems</td>
<td>3</td>
</tr>
<tr>
<td>EML 5930</td>
<td>Intermediate CAD/CAE</td>
<td>3</td>
</tr>
<tr>
<td>EML 5902</td>
<td>Advanced Electronic Packaging</td>
<td>3</td>
</tr>
</tbody>
</table>

### Mechanical Engineering Program Requirements—Freshman to Senior

**First Semester (17)**
- EGM 4110: Finite Element Analysis in Mechanical Design (3)
- MAC 2311: Calculus I (4)
- CSM 1045: General Chemistry I (3)
- CSM 1045L: General Chemistry I Lab (1)
- ENC 1101: Freshman Composition (3)

**Second Semester (18)**
- EGM 4525: Mechanical Computer-Aided Design (3)
- EML 5125: Introduction to Electronic Packaging (3)
- EML 5930: Intermediate CAD/CAE (3)
- EML 5902: Advanced Electronic Packaging (3)

**Third Semester (18)**
- EGM 4525: Mechanical Computer-Aided Design (3)
- ELM 3126: Transport Phenomena (3)
- EEL 3003: Electrical Engineering I (3)

**Fourth Semester (19)**
- EML 5125: Classical Dynamics (3)
- ENC 3343: Thermodynamics I (3)
- EML 3126: Transport Phenomena Lab (1)
- EML 3126L: Transport Phenomena Lab (1)

**Fifth Semester (19)**
- EML 5385: Identification Techniques of Mechanical Systems (3)
- EML 5930: Intermediate CAD/CAE (3)
- EEL 3111L: Circuits Lab (1)

**Sixth Semester (20)**
- EML 4525: Mechanical Computer-Aided Design (3)
- ELM 3126: Transport Phenomena (3)
- ENC 3343: Thermodynamics I (3)

**Contact:** Sabri Tosunoglu

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**Undergraduate Catalog**

- MTH 2116: Evolution of Jazz (3)
- TIP 2100: Introduction to Acting (3)
- EH 2000: Theatre Appreciation (3)
- CRW 2001: Creative Writing (3)
- EGM 1100: Introduction to Engineering (2)
- SLS 1501: Freshman Experience Seminar (1)
- MAC 2312: Calculus II (4)
- PHY 2048: Physics I with Calculus (4)
- ENC 1101: Literature Analysis (3)
- EGM 3385: Materials in Eng (3)
- EGM 1033: Technology, Humans and Society (3)
- EML 3111: Statics (3)
- EMG 3322: Statics with Writing* (3)
- EML 3333: Differential Equations (3)
- EGM 3322: Dynamics (3)
- EGM 3343: Thermodynamics I (3)
- EML 3126: Transport Phenomena (3)
- EEL 3003: Electrical Engineering I (3)
- PFE 3111L: Circuits Lab (1)
- EML 4140: Heat Transfer (3)
- EML 3900: Mechanical Design I (3)
- EML 3901L: Mechanical Design I Lab (1)
- EML 3901L: Instrumentation and Measurement Lab (1)
- ENC 3354: Engineering Economy (3)
- ITP 2100: Theatre Appreciation (3)
- ECO 2013: Principles of Macroeconomics (3)
- SYG 2010: Social Problems (3)
Undergraduate Catalog

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEO 2000</td>
<td>Introduction to Geography</td>
<td>3</td>
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<tr>
<td>or</td>
<td></td>
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</tr>
<tr>
<td>INR 2002</td>
<td>Dynamics of World Politics</td>
<td>3</td>
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Seventh Semester: (13)

<table>
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<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>EML 4501</td>
<td>Mechanical Design II</td>
<td>3</td>
</tr>
<tr>
<td>EML 4706</td>
<td>Design of Thermal and Fluid Systems</td>
<td>3</td>
</tr>
<tr>
<td>ENG 4513</td>
<td>Modern Design Methods</td>
<td>3</td>
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<tr>
<td>EML 4514</td>
<td>Design Project Organization</td>
<td>1</td>
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<td>Engineering Elective</td>
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Eighth Semester: (13)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EML 490L</td>
<td>Mechanical Lab</td>
<td>1</td>
</tr>
<tr>
<td>EML 4905</td>
<td>Senior Design Project</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Engineering Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Contact: Sabri Tosunoglu
Minor in Energy Systems

Fully enrolled non-mechanical engineering undergraduate students, who have at least a junior status with a cumulative FIU Grade Point Average of 2.0 or better, may apply to the Department of Mechanical and Materials Engineering to request a minor in Energy Systems. To earn a minor in Energy Systems students must complete the 15 credit hours listed below with a minimum grade of "C" in each course.

- EGH 3311 Statics I
- EGH 3321 Dynamics I
- EML 3126 Transport Phenomena I
- EGH 3312 Statics II
- EGH 3322 Dynamics II
- EML 3127 Transport Phenomena II
- EML 3120 Transport Phenomena Lab

Undergraduate Catalog

- EML 4140 Heat Transfer 3

*Students who have taken equivalent coursework will be exempted from taking these courses. However, they need to select courses from the following list to satisfy the minimum requirement of 15 credit hours for the minor.

- EML 3101 Thermodynamics I 3
- EML 4705 Design of Thermal and Fluid Systems 3
- EML 4601 Principles of Refrigeration and Air Conditioning 3
- EML 4601L Refrigeration and A/C Lab 1
- EML 4721 Introduction to Computational Thermal Fluids 3

Minor in Engineering Science

Fully enrolled non-mechanical engineering undergraduate students, who have at least a junior status with a cumulative FIU Grade Point Average of 2.0 or better, may apply to the Department of Mechanical and Materials Engineering to request a minor in Engineering Science. To earn a minor in Engineering Sciences students must complete the 15 credit hours listed below with a minimum grade of "C" in each course.

- EGN 3311 Statics I 3
- EGN 3321 Dynamics I 3
- EGN 3385 Materials in Engineering 3
- EMA 3702 Mechanics and Materials Science I 3
- EMA 3702L Mechanics and Materials Science Lab 1
- EML 3126 Transport Phenomena I 3
- EML 3126L Transport Phenomena Lab 1
- EGH 3343 Thermodynamics II 3

*Students who have taken equivalent coursework will be exempted from taking these courses. However, they need to select courses from the following list to satisfy the minimum requirement of 15 credit hours for the minor.

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- EML 3501 Mechanical Design I 3
- EML 3502 Mechanical Design II 3
- EML 3503L Mechanical Design Lab 1
- EML 4140 Heat Transfer 3

Minor in Mechanical Design

Fully enrolled non-mechanical engineering undergraduate students, who have at least a junior status with a cumulative FIU Grade Point Average of 2.0 or better, may apply to the Department of Mechanical and Materials Engineering to request a minor in Mechanical Design. To earn a minor in Mechanical Design students must complete the 15 credit hours listed below with a minimum grade of "C" in each course.

- EGN 3311 Statics I 3
- EGN 3321 Mechanics of Materials I 3
- EMA 3702 Mechanics and Materials Science I 3
- EMA 3702L Mechanics and Materials Science Lab 1
- EML 3501 Mechanical Design I 3
- EML 4501 Mechanical Design II 3

*Students who have taken equivalent coursework will be exempted from taking these courses. However, they need to select courses from the following list to satisfy the minimum requirement of 15 credit hours for the minor.
Course Descriptions

Undergraduate Catalog

EML 4000 Introduction to Engineering Design 3
EML 4210 Finite Element Analysis in Mechanical Design 3
EML 4804 Introduction to Mechatronics 3
EML 4806 Modeling and Control of Robots 3

Minor in Robotics and Mechatronics

Fully enrolled non-mechanical engineering undergraduate students who have at least a junior status with a cumulative GPA Grade Point Average of 2.0 or better, may apply to the department of Mechanical and Materials Engineering to request a minor in Robotics and Mechatronics. To earn a minor in Robotics and Mechatronics students must complete the 16 credit hours work listed below with a minimum grade of "C" in each course:

EML 4172 Statics 3
EML 4321 Dynamics 3
EML 4370L Instrumentation and Measurement Lab 3
EML 4502 Mechanics and Materials Science 3
EML 4804 Introducing to Mechatronics 3
EML 4806 Modeling and Control of Robots 3

Students who have taken equivalent courses may be exempted from taking these courses. However, they must select courses from the following list to satisfy the minimum requirements of 16 credit hours for the minor:

EML 4312 Automatic Control Theory 3
EML 4525 Computer Aid Design 3
EML 4555 Mechanical Computer Aid Design 3

Definition of Prefixes

EAS - Engineering, Aerospace
ELE - Engineering, Electrical
EGN - Engineering, Mechanical
e - Engineering, General
EM - Engineering, Materials
FAC - Engineering, Mechanical

EAS 4165 Introduction to Flight Mechanics 3 An introductory level course on the fundamentals of aerospace engineering with emphasis on aerodynamics and airplane performance. Prerequisite: EML 3126.

EGN 3704 Principles of Industrial Electrochemistry 3 This course provides a discussion of the basic principles underlying various electrochemical processes. The emphasis is on theoretical principles involved in plating, refining, electroplating, aqueous and fused salts, primary, secondary and fuel cells. Prerequisite: CIM 3411.

EGL 4701 Engineering Application of Electrochemistry 3, The application of the electrochemical engineering principles to the analysis of industrial processes. Emphasis is placed on electrolysis in aqueous solution and in fused salt: electrowinning, electrophotography, electrowinning and refining; electrochemical power systems. Prerequisite: EML 3704.

EML 4281 Convex Optimization 3, Various forms of convex, including fitting, stress, creep, creep, and wrinkled and typical load conditions are presented. The problems of convex solutions, relaxation analysis and convex convex are discussed. Prerequisites: EGR 2066 and CIM 3411.

EGM 3311 Analysis of Engineering Systems 3, Statically and dynamically analysis of materials and failure analysis. Structures and fluid flow, system analysis and analysis using linear parameter, numerical methods to test solutions. Prerequisite: EGR 3312.

EML 4501 Applied Mechanics 3, Statics and dynamics of solids and fluids. Science of engineering materials. Open to non-mechanical engineering students only. Prerequisite: Permission of the instructor.

EML 4550 Finite Element Analysis in Mechanical Engineering 3, Finite Element Analysis is developed as a means to determine stress and deformation levels as well as temperature and heat flux levels in solids. Application by means of commercial software. Prerequisites: EGR 2520 or CSE 2520, EML 4140 and EML 3702.

EGL 4521C Material Science I 3, Course provides a more in-depth understanding of principles that determine material properties. Topics include structure, effects of thermodynamics, phase and kinetics on microstructural development. Prerequisite: EGR 3365.

EML 4522C Materials Science II 3, Mechanical properties of materials, including strengthening plasticity and fracture. Introduction into ceramic and polymer materials systems. Prerequisite: EGR 3365.
Changes in the mechanical and materials engineering undergraduate program & catalog, continued:

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Mechanics, Mechanics of Materials, Mechanical Design and Heat Transfer.

EGN 1033 Technology, Humans, and Society (3). The course examines the interaction between the technology humans develop and their culture, politics and the quality of life. The foundation for envisioning the appropriate use of technology for a sustainable future is developed.

EGN 1100 Introduction to Engineering (2). This course will provide a broad exposure, "birdseye" view, of the engineering profession to entering freshmen.

EGN 1102 Engineering Drawing (3). Laboratory experiences in the principles and practice of idea development and expression through free hand sketching and conventional instrument drafting. A beginning course for students with no prior drafting experience.

EGN 3111 Statics (3). Forces on particles, and two and three dimensional rigid bodies, equilibrium of forces, moments, couples, centroids, section properties, and load analysis of structures; vector approach is utilized. Prerequisites: MAC 2312 and PHY 2048.

EGN 3221 Dynamics (3). Study of the motion of particles and rigid bodies, conservation of energy and momentum. A vector approach is utilized. Prerequisite: EGN 3111.

EGN 3343 Thermodynamics I (3). Fundamentals concepts of basic thermodynamics including first and second law topics, equations of state and general thermodynamic relationships. Prerequisites: MAC 2312, PHY 2048, and CIV 1045.

EGN 3365 Materials in Engineering (3). A study of materials used in engineering. Includes atomic structure phase diagrams and reactions within solid materials. Prerequisites: CHM 1045, MAC 2311 and PHY 2048.

EGN 3567 Industrial Materials and Engineering Design (3). Industrial materials, material selection, and engineering design process, including synthesis, analysis, optimization, and evaluation.


EMA 3066 Polymer Science and Engineering (3). Introduction to molecular structure, property relationships; preparation, processing and applications of macromolecular materials. Prerequisite: EGN 3365.

EMA 3702 Mechanics and Materials Science (3). A mid-level course addressing the selection of engineering materials based on static and dynamic loadings, environmental analysis and the experimental analysis of mechanical systems. Emphasis on metals and composite materials. Prerequisite: EGN 3311.

HANGES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM & CATALOG, continued:
CONTACT: Sabri Tosunoglu

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EMA 4121 Physical Metallurgy (3). Correlation of properties; structural, mechanical, and thermal history and service behavior of various metals and their alloys. Prerequisite: EGM 3365.

EMA 4212L Materials Laboratory (1). Laboratory techniques in materials, including metallography, mechanical testing, heat treatment and non-destructive testing techniques. Prerequisite: EGM 3365.

EMA 4223 Mechanical Metallurgy (3). Fundamentals of plastic deformation of crystalline solids: elementary theory of statics and dynamics of dislocations; applications to deformation of single crystals and polycrystalline fracture of metals. Prerequisites: EGM 3365 and EMA 3702.

EMA 5091 Physical Properties of Materials (3). The physical properties of materials, including the influence of structure on properties, thermodynamics of solids and phase transformations and kinetics of microstructural development. Prerequisite: EGM 4521C.

EMA 5015 Introduction to Nanomaterials Engineering (3). The science and engineering of nanomaterials, the fabrication, behavior, and characterization of the nano-size particles and materials. Prerequisites: EGM 3365 Materials in Engineering, EGM 3311 Analysis of Mechanical Systems.

EMA 5096 Nanoelectronic Materials (3). Course provides an understanding of nanotechnology based on materials engineering. Topics include energy bands in semiconductors, MOSFET scaling, materials processing and other applications. Prerequisite: EGM 3365.

EMA 5017 Nanoparticle Technology (3). An interdisciplinary overview of the nanoparticle engineering. Synthesis of nanoparticles, nanoparticle growth and transport, characterization methods, and applications. Prerequisite: EGM 3365 or permission of the instructor.

EMA 5018 Nanoscale Modeling of Materials (3). Overview of computational nanotechnology. Modeling, synthesis, and design of nanomaterials. Energy minimization, molecular dynamics and advanced multiscale numerical techniques. Prerequisites: EGM 3365 or permission of the instructor.

EMA 5104 Advanced Mechanical Properties of Materials (3). Advanced treatment of the mechanical behavior of solids: examines crystal plasticity, dislocations, point defects and grain boundaries, creep and fatigue behavior, fracture. Prerequisites: EGM 3311.


EMA 5140 Introduction to Ceramic Materials (3). Synthesis of ceramics, inorganic glasses and their microstructure as related to physical properties. Prerequisites: EGM 3365 or Instructor's permission.

EMA 5205 Principles of Composite Materials (3). The mechanical behavior of composite materials used in the automotive, aircraft and sporting goods industries. Material and laminar properties; design of composites; failure analysis; and environmental effects. Prerequisites: EGM 5015 or permission of the instructor.

EMA 5507C Analytical Techniques of Materials Sciences (3). Fundamental theories and techniques of the analytical methods for materials including: X-ray diffraction, scanning and transmission electron microscopy, thermal and surface analysis, and vacuum systems. Prerequisite: EGM 3365.

EMA 5605 Fundamentals of Materials Processing (3). Extrusion of materials from the metals using pyro, hydro and electro techniques. Fundamentals of solidification process. Prerequisites: MSE 4521 or permission of the instructor.

EMA 5918 Ceramic Processing (3). Introduction to the science of ceramic processing, with emphasis on theoretical fundamentals and current state-of-the-art processing. Prerequisite: EMA 5140.

EMA 5935 Advanced Topics in Materials Engineering (3). Topics include thermodynamics of solids, principles of physical metallurgy, including phase transformation and diffusion and analytical methods in materials engineering. Prerequisites: EGM 3343 and EGM 3365.

EMC 5015 Digital Control of Mechanical Systems (3). Discrete modeling of mechanical systems. Digital feedback with emphasis on hydraulic, pneumatic and electro-mechanical devices. Prerequisites: EML 4112.

EML 1533 Introduction to CAD for Mechanical Engineers (3). Introduction to technical graphical visualization and communication in mechanical design. Knowledge and skills to use a software package to create multi-view and 3-D Drawings using ANSI standards.

EML 2120 Software for Mechanical Design (3). Students will use software to develop solid models and a mathematical software package to solve mechanical engineering problems. A programming language will be used to define input parameters. Prerequisites: EGM 1100 or EML 3006, Corequisite: MAC 2313.

EML 2232 Programming for Mechanical Engineering Students (3). Operation of computers and programming languages for mechanical design. C++ will be used to develop programs for mechanical design problems. Introduction to Visual Basic and Fortran 90 environments.

EML 3906 Concepts of Engineering (2). Provide a broad exposure, "birdseye" view, of the engineering profession to junior and senior transfer students. To be completed within two terms after admission to the ME program.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM

CONTACT: Sabri Tosunoglu

EML 3104 Thermodynamics II (3). Continuation of Thermodynamics I covering reversible and nonreversible steady and various thermodynamic cycles. Prerequisite: EGN 3343.

EML 3126 Transport Phenomena (3). Fundamental principles of transport phenomena; Governing Equations; Compressible Flow. Prerequisites: EGN 3321 or EGN 3343, and MAP 2302 or EGM 3311.

EML 3186 Transport Phenomena Laboratory (1). Experiments illustrating the principles of transport phenomena: wind tunnel, shock tubes, activists. Prerequisites: EGN 3321, Corequisite: EML 3126.

EML 3222 System Dynamics (3). Introduction to modeling of mechanical systems; derivation of system equations and response of system, Thermal and vibrational systems. Available solution methods will be discussed. Prerequisites: EGN 3321, EMA 3702, EML 2033.

EML 3202 Kinematics, Dynamics, and Machine Design (2). Fundamentals of kinematics and mechanisms, design, study of the mechanisms used in machinery and analysis of their motion. Two and three dimensional mechanical and numerical methods of computer application. Design is emphasized. Prerequisites: EGN 3321, EML 2032.

EML 3301C Instrumentation (1). A practical study of common instrumentation techniques. The use of instrumentation and measurement methods to solve problems is emphasized. Prerequisites: EEL 3003 or EEL 3111.

EML 3301L Instrumentation and Measurement Laboratory (1). A practical study of common instrumentation elements and measurement systems used in mechanical and electro-mechanical applications. Prerequisite: EEL 3111L.


EML 3500 Mechanical Design I (3). Design of mechanical machine members including shafts, foundations, bolts, clutches, chains, etc. Prerequisite: EGN 3321, EMA 3702, and EGN 3395.

EML 4061 Introduction to Nondestructive Testing and Mechanical Health Monitoring (3). Nondestructive Testing (NDT) and Mechanical Health Monitoring (MHM) techniques will be introduced. Computational methods for the interpretation of data will be discussed. Prerequisite: Permission of the Instructor.

EML 4140 Fluid Transfer (3). Study of the fundamentals of heat transfer including conduction, convection, and radiation. Computer applications and design problems emphasized. Prerequisites: EML 2032, EGN 3343, EML 3126, and MAP 2302.

EML 4238 Vibration (3). Theory and application of vibration analysis. Includes damped and undamped vibrations with one or more degrees of freedom. Computer methods emphasized. Prerequisite: EGN 3321, EMA 3702, and EML 2032.

EML 4246 Tribological Design for Machines and Elements (3). Introduction to friction and wear, analysis of tribological systems, and applications of Tribological Principles to machine and machine element designs. Prerequisite: EML 4201 or permission of the instructor.


EML 4264 Introduction to Vehicle Dynamics (3). Fundamentals of dynamics applied to the study of automotive vehicle performance. Emphasis will be placed on the use of models to evaluate or improve vehicle design. Prerequisite: EGN 3321.

EML 4312 Automatic Control Theory (3). Feedback control systems: stability analysis; graphical methods. Applications with emphasis on hydraulic, pneumatic and electro-mechanical devices. Prerequisites: EGN 3321, MAP 3302, EML 2032.

EML 4416 Combustion Processed (3). Introduction to combustion processes, thermodynamics, chemical kinetics, incineration, combustion and explosion, mass and momentum transfer, applications in IC engines and gas turbines. Prerequisites: EML 3101, and EML 4140.

EML 4418 Propulsion Systems (3). Basics of air-breathing and rocket engines used in flight systems; gas turbines and ramjet fundamentals, introduction to compressor and turbine design. Propulsion performance. Unconventional modes of propulsion in space. Prerequisite: EML 4101 and EML 3395.


EML 4501 Mechanical Design II (3). Continuation of Design analysis of elementary machine elements, including lubrication bearing and gears. Introduction to advanced analysis techniques. Prerequisite: EML 3500.

EML 4553 Production Machine Modelling and Design (3). The modeling of metal removal, forming, and polymer processing operations will be emphasized. The design of production machines will be discussed based on the models. Prerequisites: EGN 3355, EMA 3702, and EGN 3300.

EML 4555 Mechanical Computer Aided Design (3). Introduction to the use of computers in the design process. Course emphasizes the use of interactive computing and computer graphics in developing CAD applications. Programming project is required. Prerequisite: EML 2032.

EML 4557 Design Project Organization (3). Organization to include planning, design, testing, and communication skills. Prerequisite: EML 3101, EGN 3311, EML 3300, and EML 4140.
ANGELES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM &
CATALOG, continued:
CONTACT: Sabri Tosunoglu

EML 4601 Introduction to Electronic Packaging (3). Introduction to mechanical packaging of electronic systems. Integrates concepts in mechanical packaging of electronic systems, such as hybrid substrate technology. Prerequisites: EEL 3003 or EEL 3111, and EEL 3111L.


EML 4601L Refrigeration and Air Conditioning Lab (1). Experiments in Air Conditioning and Refrigeration applications. Corequisite: EML 4601.

EML 4602 Air Conditioning Design (3). Mechanical design and optimization of an air conditioning system for a selected application including comfort, industrial applications, building operation and management. Design project required. Prerequisites: EML 3101 and EML 4140 or permission of the instructor.

EML 4602C Mechanical Systems in Environmental Control (3). Analysis of refrigeration, heating and air handling systems. Design of environments' control systems. Prerequisite: EML 3101.

EML 4702 Fluid Dynamics (3). A mid-level course on ideal fluid flow, compressible flow and viscous flow. Analytical and numerical techniques of curvature and Navier-Stokes equation for incompressible and compressible flow. Prerequisite: EML 3120.

EML 4706 Design of Thermal and Fluid Systems (3). Design of thermal and fluid system and components. Flow systems, duct works. Selection of pumps and fans. Basic design of heat exchangers, refrigeration, pumps, and fans. Prerequisites: EML 3101 and EML 4140.

EML 4711 Gas Dynamics (3). Basic equations of motion for a flow of a compressible fluid, isentropic flow, normal shock waves, nonisentropic flow, characteristics and supersonic thin-air flow theory. Prerequisites: EML 3120 and EGN 3340.

EML 4721 Introduction to Computational Thermal Fluid (3). Introduction of numerical methods for compressible and incompressible flows and heat transfer. Topics include explicit and implicit schemes, accuracy, and stability in different coordinate systems. Prerequisites: EML 3032 or permission by instructor. EGM 3111 (or equivalent), EML 3120. Corequisite: EML 4140.

EML 4804 Introduction to Mechatronics (3). This course will introduce computer controlled precise motion generation in smart machine. Prerequisite: EML 3301L.

EML 4805 Modelling and Control of Robots (3). Robot models in terms of geometric parameters, kinematics and dynamics modeling of robots. Static and dynamic force equilibrium, robot programming and control algorithms, simulations. Prerequisite: EML 3032.

EML 4806 Robot Design (3). Robotic arm and mobile platform design including a review of major design components such as actuators, sensors, and controllers. Computer-based design, analysis and hands-on projects. Prerequisites: EML 4805 or permission of the instructor.

EML 4823 Introduction to Sensors and Signal Processing (3). This course will introduce the basic sensors and signal processing techniques for design and development of smart products. Prerequisite: EML 3301.

EML 4865 Senior Design Project (3). Project statement, in-depth survey, conceptual and structural design, analysis, statistical and cost analyses, ethical, societal and environmental impact, prototype construction, final presentation. Prerequisites: EML 4051 and permission of the advisor. Corequisites: EML 4501, EML 4700.

EML 4866 Mechanical Lab (1). Experiments with various types of mechanical equipment including engines, fans, boilers, pumps, motions and mechanics. Prerequisites: EML 3120 and EML 3120.

EML 4870 Special Topics/Projects (1-3). Individual conferences, assigned readings, and reports on independent investigations selected by the students and approved by the instructor.

EML 4890 Co-op Work Experience (3). Supervised part-time work experience in engineering field. Limited to students admitted to the co-op program with consent of advisor. Evaluation and reports required.
CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM & CATALOG, continued:

CONTACT: Sabri Tosunoglu

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EML 5164</td>
<td>Classical Thermodynamics (3). Mathematical analysis of the laws of classical reversible and irreversible thermodynamics. Applications to mechanical, electromagnetic, and chemical systems. Prerequisites: EML 3101.</td>
</tr>
<tr>
<td>EML 5385</td>
<td>Identification Techniques of Mechanical Systems (3). FTT, time series analysis and neural networks are introduced. Applications of these techniques are discussed for identification of mechanical structures and machine diagnostics. Prerequisite: EML 4312.</td>
</tr>
<tr>
<td>EML 5412</td>
<td>Computerized Processes (3). Introduction to combustion processes, thermochemistry, chemical kinetics, laminar flame propagation, detonations and explosions, flammability and ignition, applications to IC engines and gas turbines. Prerequisites: EML 3101 and EML 4140.</td>
</tr>
<tr>
<td>EML 5509</td>
<td>Computational Mechanics (3). Finite element analysis and sensitivity analysis combined with numerical optimization techniques to optimize design. Prerequisites: EGM 3354 or permission of the instructor.</td>
</tr>
<tr>
<td>EML 5555</td>
<td>Smart Machine Design and Development (3). Design of independently operating smart electro-mechanical systems.</td>
</tr>
<tr>
<td>EML 5564</td>
<td>Mechanical Design Optimization (3). Finite element analysis and sensitivity analysis combined with numerical optimization techniques to optimize design. Prerequisites: EGM 3354 or permission of the instructor.</td>
</tr>
<tr>
<td>EML 5575</td>
<td>Computer Aided Design in Mechanical Engineering (3). Software will be used to demonstrate heating, ventilating and air conditioning design concepts and sizing equipment &amp; determining performance parameters. Project design is required. Prerequisites: EML 2022 and EML 4601.</td>
</tr>
<tr>
<td>EML 5708</td>
<td>Advanced Design of Thermal and Fluid Systems (3). Advanced designs of pumps, compressors, heat exchangers, HVAC systems and thermal and fluid control devices. Prerequisite: EML 4708.</td>
</tr>
<tr>
<td>EML 5748</td>
<td>Boundary Layer Theory (3). Advanced fluid dynamic analysis of the Navier-Stokes equations, using boundary layer assumptions. Focus will be on solutions of thermal and fluid boundary layers. Prerequisite: EML 3123.</td>
</tr>
<tr>
<td>EML 5806</td>
<td>Control Technology for Robotic Systems (3). State-space equations of robotics. Controller design based on linearization, non-linear controllers, optimal control, adaptive control, and other methods. Stability analysis, performance comparison. Prerequisites: EGM 3321, EML 4312, or equivalent.</td>
</tr>
<tr>
<td>EML 5525</td>
<td>Sensors and Applied Machine Intelligence (3). Sensors, signal analysis techniques, and error compensation methods will be introduced for machine intelligence. Prerequisites: EML 4312, EML 4503, or equivalent, or permission of the instructor.</td>
</tr>
</tbody>
</table>
## Electives for Environmental Engineering Option

<table>
<thead>
<tr>
<th>Existing (page 385*)</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives for Environmental Engineering</td>
<td>Electives for Construction Engineering Option</td>
</tr>
<tr>
<td>Option</td>
<td>CCE 4001</td>
</tr>
<tr>
<td>ENV 4101</td>
<td>CCE 5033</td>
</tr>
<tr>
<td>ENV 4330</td>
<td>CCE 5505</td>
</tr>
<tr>
<td>Hazardous Waste Assessment and Remediation 3</td>
<td>CEN 4321</td>
</tr>
<tr>
<td>ENV 4351</td>
<td>Note: Required credits towards graduation are 150 credit hours. Due to variation in the number of transfer credits awarded, technical electives may be required. Technical electives must be approved by the Advisor.</td>
</tr>
<tr>
<td>Solid Waste Management 3</td>
<td></td>
</tr>
<tr>
<td>ENV 4460</td>
<td></td>
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<tr>
<td>Water Supply Engineering 4</td>
<td></td>
</tr>
<tr>
<td>ENV 4551</td>
<td>ENV 4513</td>
</tr>
<tr>
<td>Sewage and Wastewater Treatment 4</td>
<td>ENV 4924</td>
</tr>
<tr>
<td>ENV 4560</td>
<td>ENV 4930</td>
</tr>
<tr>
<td>Reactor Design 3</td>
<td></td>
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<tr>
<td>ENV 4513</td>
<td></td>
</tr>
<tr>
<td>Reactions in Environmental Engineering Systems 3</td>
<td></td>
</tr>
<tr>
<td>ENV 4924</td>
<td></td>
</tr>
<tr>
<td>Bioremediation 3</td>
<td></td>
</tr>
<tr>
<td>ENV 4930</td>
<td></td>
</tr>
<tr>
<td>Special Topics in Environmental Engineering 1-4</td>
<td></td>
</tr>
</tbody>
</table>

### Course Descriptions

#### Definition of Prefixes

CCE-Civil Construction Engineering; CEG-Engineering, General; CEN-Civil Engineering Structures; CHH-Chemical Engineering; CWM-Civil Water Resources; ECM-Environmental, Mechanical; ECM-Environmental, General; ENV-Environmental; SUR-Surveying and Related Areas; TTE-Transportation and Traffic Engineering.
CHANGES IN THE BS IN ENVIRONMENTAL ENGINEERING. Continued:
CONTACT: Berrin Tansel
UNDERGRADUATE PROGRAM CHANGES

HANGES IN THE BS IN ENVIRONMENTAL ENGINEERING, Continued:

CONTACT: Berrin Tansel

Course Descriptions

Definition of Prefixes
CCE-Civil Construction Engineering; CEG-Engineering, General; CEC-Civil Engineering Structures; CEN-Civil Engineering; CWR-Civil Water Resources; EGM-Engineering, Mechanics; EGN-Engineering, General, ENV-Environmental; SUR-Surveying and Related Areas; TTE-Transportation and Traffic Engineering.
### RESTAURANT/FOODSERVICE MANAGEMENT CERTIFICATE:

**CONTACT:** Diann Newman

**OLD**
- Hotel/Lodging Management Certificate (36)
- Note: Curriculum may be adjusted to meet the needs of students with extensive related industry experience.

**Core Requirements: (27)**
- FSS 3230C: Introductory Commercial Food Production (3)
- HFT 3313: Hospitality Property Management (3)
- HFT 3403: Accounting for the Hospitality Industry (3)
- HFT 3453: Operations Control (3)
- HFT 3503: Hospitality Marketing Strategy (3)
- HFT 4293: Hotel/Foodservice Operations Management (3)
- HFT 4323: Hospitality Facilities Management (3)
- HFT 4413: Lodging Systems and Procedures (3)
- HFT 4664: Financial Analysis in the Hospitality Industry (3)

**Electives (9)**
- HFT 3210: Fundamentals of Management in the Hospitality Industry (3)
- HFT 3423: Hospitality Information Technology (3)
- HFT 3600: Hospitality Industry Law (3)
- HFT 3753: Convention & Trade Show Management (3)
- HFT 3861: Beverage Management (3)
- HFT 4221: Human Resources for the Hospitality Industry (3)
- HFT 3XXX: Interpersonal Skills for the Hospitality Industry (3)
- HFT 4274: Timeshare Management (3)
- HFT 4470: Resort Development (3)
- HFT 4504: Hospitality and Tourism on the Internet (3)
- HFT 4545: Leadership Training for Team Building (3)
- HFT 4783: Casino Operations Management (3)
- HFT 4802: Catering Management (3)

*Prerequisite required.*

**NEW**
- Hotel/Lodging Management Certificate (36)
- Note: Curriculum may be adjusted to meet the needs of students with extensive related industry experience.

**Core Requirements: (27)**
- FSS 3230C: Introductory Commercial Food Production (3)
- HFT 3313: Hospitality Property Management (3)
- HFT 3403: Accounting for the Hospitality Industry (3)
- HFT 3453: Operations Control (3)
- HFT 3503: Hospitality Marketing Strategy (3)
- HFT 4293: Hotel/Foodservice Operations Management (3)
- HFT 4323: Hospitality Facilities Management (3)
- HFT 4413: Lodging Systems and Procedures (3)
- HFT 4664: Financial Analysis in the Hospitality Industry (3)

**Electives (9)**
- HFT 3210: Fundamentals of Management in the Hospitality Industry (3)
- HFT 3471: Hospitality Information Technology (3)
- HFT 3560: Hospitality Industry Law (3)
- HFT 3753: Convention & Trade Show Management (3)
- HFT 3861: Beverage Management (3)
- HFT 4221: Human Resources for the Hospitality Industry (3)
- HFT 4324: Human Relations (3)
- HFT 4274: Timeshare Management (3)
- HFT 4470: Resort Development (3)
- HFT 4504: Hospitality and Tourism on the Internet (3)
- HFT 4545: Leadership Training for Team Building (3)
- HFT 4785: Casino Operations Management (3)
- HFT 4802: Catering Management (3)

*Prerequisite required.*

**Summary of Changes:**
Core Requirements remain the same. Delete HFT 3XXX Interpersonal Skills for the Hospitality Industry and add HFT 4224 Human Relations in its place.
CHANGES TO THE TRAVEL AND TOURISM ADMINISTRATION CERTIFICATE

CONTACT: Diann Newman

OLD

Core Requirements (9)
- HFT 3000 Intro. To Hosp./Tours. Mgt. 3
- HFT 3503 Hospitality Mkt. Strategies 3
- HFT 3713 International Tvl. & Tour. 3

Electives (6)
- HFT 3403 Accounting for Hosp. Ind. 3
- HFT 3423 Hosp. Info. Tech. 3
- HFT 3753 Destinations and Cultures 3
- HFT 3753 Convention & Trade Show Mgt. 3
- HFT 3760 Tourist Transport Systems 3
- HFT 3770 Cruise Line Ops & Mgt. 3
- HFT 3793 Sociology of Leisure 3
- HFT 4221 Human Resources 3
- HFT 4224 Human Relations 3
- HFT 4701 Sustainable Tourism Practices 3
- HFT 4802 Catering Mgt 3

NEW

Core Requirements (9)
- HFT 3xxx Travel and Tourism Systems 3
- HFT 3735 Destinations and Cultures 3
- HFT 4xxx Travel Information Tech. 3

Electives (6)
- HFT 3403 Accounting for Hosp. Ind. 3
- HFT 3509 Tourism Destination Mkt. 3
- HFT 3701 Sustainable Tourism Practices 3
- HFT 3741 Planning Meetings 3
- HFT 3770 Cruise Line Ops. & Mgt. 3
- HFT 4221 Human Resources 3
- HFT 4224 Human Relations 3
- HFT 4708 Coastal & Marine Tourism 3
- HFT 4737 Travel Law 3
- HFT 4762 Airline Management 3

Core Requirements are new, electives in italics are new.

CHANGES TO THE TRAVEL AND TOURISM MANAGEMENT CERTIFICATE

CONTACT: Diann Newman

OLD

Core Requirements: (27)
- HFT 3xxx Travel Info. Technology 3
- HFT 3210 Fundamentals of Management 3
- HFT 3523 Hospitality Information Systems 3
- HFT 3503 Hospitality Marketing Strategies 3
- HFT 3733 Destinations and Cultures 3
- HFT 3733 Convention & Trade Show Mgt. 3
- HFT 3717 Cruise Line Mgmt 3
- HFT 4762 Airline Management 3
- HFT 4763 Airline Computer System 3

NEW

Core Requirements: (27)
- HFT 3xxx Travel Info. Technology 3
- HFT 3210 Fundamentals of Mgmt. 3
- HFT 3509 Tourism Destination Mkt. 3
- HFT 3701 Sustainable Tourism Practices 3
- HFT 3701 Sustainable Tourism Practices 3
- HFT 3741 Planning Meetings 3
- HFT 3770 Cruise Line Ops. & Mgmt. 3
- HFT 4762 Airline Management 3
- HFT 3534 Travel & Tourism Systems 3
- HFT 4xxx Managing Tourism Systems 3
- HFT 4733 Tour Production & Distribution 3

Electives: (9)
- HFT 3403 Accounting for the Hosp. Ind. 3
- HFT 3509 Tourism Destination Mkt. 3
- HFT 3741 Planning Meetings 3
- HFT 3753 Convention & Trade Show Mgt. 3
- HFT 3866 Wine Technology 3
- HFT 4221 Human Resources 3
- HFT 4224 Human Relations 3
- HFT 4224 Time Share Management 3
- HFT 4470 Resort Development 3
- HFT 4545 Leadership Training for Team Building 3
- HFT 4727 Travel Law 3
- HFT 4402C Catering Management 3

Core Requirements in italics are new.
### Architecture

#### New Course Requests

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 5XXX</td>
<td>History of Design Antiquity to Middle-Ages</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Survey of architectural, interior, and landscape design from antiquity to the middle ages, including Western and non-Western traditions. Explorations of related and causal ideologies will be covered in lectures, readings and student assignments.</td>
<td></td>
</tr>
<tr>
<td>ARC 5XXX</td>
<td>Introduction to Design Theories</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introductions to the environmental parameters, morphological concepts and ideological principles that generate form and meaning in architecture. Explorations of related spheres of cultural production will also be explored in lectures reading and student assignments.</td>
<td></td>
</tr>
<tr>
<td>ARC 5XXX</td>
<td>Materials and Methods of Construction</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of the types of construction and materials used in institutional, residential, and officer building assemblies. How materials are installed and inspected, including the use of special equipment. Explorations of the theories and histories of construction will be explored.</td>
<td></td>
</tr>
<tr>
<td>ARC 5XXX</td>
<td>History of Design Renaissance to XIX Century</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Survey of architectural, interior, and landscape design from the Renaissance to the nineteenth century, including Western and non-Western traditions. Explorations of related and causal ideologies will be covered in lectures, readings and student assignments.</td>
<td></td>
</tr>
<tr>
<td>ARC 5XXX</td>
<td>Structures and Systems I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introduction to principles of physical science for design problems of structures, spaces and ecological systems. Topics include structural systems, environmental systems of building and their natural surroundings. Explorations of related and causal ideologies will be covered.</td>
<td></td>
</tr>
<tr>
<td>ARC 5XXX</td>
<td>Structural Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Exploration of structural specifications as outlined by appropriate codes and manuals to introduce structural analysis, loadings and structural elements commonly encountered in construction for architectural analysis and design. Explorations of related and causal ideologies will be covered.</td>
<td></td>
</tr>
<tr>
<td>ARC 5XXX</td>
<td>History of Design from the XIX Century to Present</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Survey of architectural, interior, and landscape design from the XIX century to the present, including western and non-western traditions. Explorations of related and causal ideologies will be covered in lectures.</td>
<td></td>
</tr>
</tbody>
</table>

#### Course Change Requests

- ARC 1461 New course number: ARC 3461
- ARC 2580 New course number: ARC 3580
- ARC 5483 Delete

### Landscape Architecture

#### New Course Requests

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAA 3XXX</td>
<td>GIS Applications in Landscape Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introduction to modeling capabilities of GIS in the planning process addressing the natural and cultural characteristics of the landscape. Prerequisite: Program Approval.</td>
<td></td>
</tr>
<tr>
<td>LAA 3XXX</td>
<td>Computer Practices in Landscape Architecture I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Computer application of drafting and design technologies used in landscape architecture. Prerequisite: Program Approval.</td>
<td></td>
</tr>
<tr>
<td>LAA 3XXX</td>
<td>Theory of Planting Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An introduction to the study of principles and methods related to the ecological, functional, and aesthetic use of vegetation in landscape architecture. Prerequisite: Program Approval.</td>
<td></td>
</tr>
</tbody>
</table>

#### Course Change Requests

- LAA 3212 New title: Landscape Documentation
- LAA 5716 New title: History of Landscape Architecture
- LAA 5422 New title: Landscape Development

### College of Arts and Sciences

#### Art and Art History

#### New Course Requests

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARH 4XXX</td>
<td>Spanish Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Explores the Art of Spain from 1492 through the early 20th century. Includes painting, sculpture and architecture.</td>
<td></td>
</tr>
<tr>
<td>ARH 5XXX</td>
<td>Graduate Spanish Art</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Explores the Art of Spain from 1492 through the early 20th century. Painting, sculpture and architecture covered in slide lectures.</td>
<td></td>
</tr>
</tbody>
</table>
**ASIAN STUDIES**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN 4XXX</td>
<td>Chinese Studies Pedagogy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introduction to Chinese language pedagogy, providing knowledge and tools for teaching Chinese language and culture in a classroom, in a variety of pedagogical settings. Prerequisites: Permission of the Instructor.</td>
<td></td>
</tr>
<tr>
<td>ASN 4XXX</td>
<td>Zen and the Art of the Tea Ceremony II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Theory, practice, aesthetics and cultural history of Chado, the Tea Ceremony of Zen Buddhism.</td>
<td></td>
</tr>
<tr>
<td>ASN 5XXX</td>
<td>Zen and the Arts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theory, practice, aesthetics and cultural history of Chado, the Tea Ceremony of Zen Buddhism.</td>
<td></td>
</tr>
</tbody>
</table>

**BIOLOGICAL SCIENCES**

**COURSE CHANGE REQUESTS**

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<thead>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MCB 3020</td>
<td>Credit hours change from 2 to 1</td>
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</tr>
<tr>
<td>PCB 4023</td>
<td>Credit hours change from 4 to 3</td>
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</tbody>
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**CHEMISTRY AND BIOCHEMISTRY**

**NEW COURSE REQUESTS**

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<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM 4XXX</td>
<td>Biological Chemistry Lab II</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Continuation of Biological Chemistry Laboratory I. Experimental methods presented include NMR, enzyme inhibition essays, macromolecular thermodynamics, peptide sequencing, ligand binding assays, chromatography. Prerequisites: CHM 4304, CHM 4304L. Corequisite: CHM 4307.</td>
<td></td>
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</tbody>
</table>

**EARTH SCIENCES**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLY 3XXX</td>
<td>Earth through time</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Evolution of the Earth through its 4600 million year history, the fossil record and the geologic time scale. Major geologic events of the past and their effects on organic evolution.</td>
<td></td>
</tr>
<tr>
<td>GLY 5XXX</td>
<td>Planet Earth: Dynamic Earth</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Essentials of metamorphism, rock rheology, seismology, plate tectonics, plate boundaries, plate movement, continental rifting and evolution of mountain belts.</td>
<td></td>
</tr>
<tr>
<td>GLY 5XXX</td>
<td>Planet Earth: Evolving Earth</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Essentials of lithostatigraphy, biostratigraphy, geologic time scale, modern sedimentological processes, sedimentary rocks, evolution extinction events, paleoenvironments and paleoclimates.</td>
<td></td>
</tr>
<tr>
<td>GLY 5XXX</td>
<td>Planet Earth: Solid Earth</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Essentials of the formation and evolution of the crust mantle and core of the earth. Composition and physical properties.</td>
<td></td>
</tr>
<tr>
<td>GLY 5XXX</td>
<td>Generation of magmas, their geochemistry.</td>
<td>1</td>
</tr>
<tr>
<td>MET 3XXX</td>
<td>Meteorological Dynamics I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A first course in the motions of the Earth's atmosphere. Topics include meteorological coordinates, atmospheric equations of motion, circulation and vorticity, balanced flows, boundary-layers and friction, and atmospheric waves. Prerequisites: MAC 2312, PHY 2048.</td>
<td></td>
</tr>
</tbody>
</table>

**ECOMONICS**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO 3XXX</td>
<td>Women, Men and Work in the USA</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Analyzes the performance of women in comparison to men in the US labor market.</td>
<td></td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVR 4XXX</td>
<td>Restoration Ecology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Field analysis of topics and concepts covered in Restoration Ecology. Prerequisites: EVR 3013 or PCB 3043 or PERMISSION. Corequisite: EVR 4323.</td>
<td></td>
</tr>
<tr>
<td>EVR 6XXX</td>
<td>GIS in water resources</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Spatial analysis of watersheds and modeling of hydrological processes with emphasis on surface runoff, evapotranspiration and sub surface flow. Prerequisites: Environmental GIS or EQUIVALENT OR PERMISSION.</td>
<td></td>
</tr>
<tr>
<td>EVS 4XXX</td>
<td>Agroecology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Application of ecological principles to modern farming systems to achieve goals of long term food production in without depleting earth's resources. Prerequisites: EVR 3013 or EQUIVALENT OR INSTRUCTOR PERMISSION.</td>
<td></td>
</tr>
<tr>
<td>EVS 4XXX</td>
<td>Sustainable Agriculture</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Analysis of sustainability of modern agricultural systems under a variety of ecological economic and cultural settings. Familiarizes students with socioeconomic, urban policy, sustainable agriculture. Prerequisites: EVR 3013 or EQUIVALENT OR INSTRUCTOR PERMISSION.</td>
<td></td>
</tr>
</tbody>
</table>
### HISTORY

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFH 6XXX</td>
<td>Research Seminar in African History-I</td>
<td>3</td>
</tr>
<tr>
<td>AFH 6XXX</td>
<td>Research Seminar in African History-II</td>
<td>3</td>
</tr>
<tr>
<td>AMH 6XXX</td>
<td>Research Seminar in Latin American History-I</td>
<td>3</td>
</tr>
<tr>
<td>AMH 6XXX</td>
<td>Research Seminar in Latin American History-II</td>
<td>3</td>
</tr>
<tr>
<td>BUH 6XXX</td>
<td>Research Seminar in European History-I</td>
<td>3</td>
</tr>
<tr>
<td>BUH 6XXX</td>
<td>Research Seminar in European History-II</td>
<td>3</td>
</tr>
<tr>
<td>HIS 4XXX</td>
<td>Archaeological Field Work</td>
<td>3-6</td>
</tr>
<tr>
<td>LAH 6XXX</td>
<td>Research Seminar in Latin American History-I</td>
<td>3</td>
</tr>
<tr>
<td>LAH 6XXX</td>
<td>Research Seminar in Latin American History-II</td>
<td>3</td>
</tr>
<tr>
<td>WOH 5935</td>
<td>Topics in World History</td>
<td>3</td>
</tr>
<tr>
<td>WOH 6XXX</td>
<td>Research Seminar in World History-I</td>
<td>3</td>
</tr>
<tr>
<td>WOH 6XXX</td>
<td>Research Seminar in World History-II</td>
<td>3</td>
</tr>
</tbody>
</table>

### LATIN AMERICAN AND CARIBBEAN CENTER

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS 4XXX</td>
<td>Argentinian Culture and Society</td>
<td>3</td>
</tr>
<tr>
<td>LAS 5XXX</td>
<td>Culture and Society in the Rio de la Plata</td>
<td>3</td>
</tr>
</tbody>
</table>

**WITHDRAWN**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS 0516</td>
<td>Argentinian society, its national process, challenges and failures through an interdisciplinary approach. Prerequisites: Permission of instructor.</td>
<td></td>
</tr>
</tbody>
</table>

### COURSE CHANGE REQUEST

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS 6017</td>
<td>Delete</td>
<td></td>
</tr>
</tbody>
</table>

### MATHEMATICS

**NEW COURSE REQUEST**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHP 4XXX</td>
<td>Topics in the history of Modern Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Prerequisites:** MAC 2313, MAS 3105.

### MODERN LANGUAGES

**NEW COURSE REQUEST**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHI 3XXX</td>
<td>Intermediate Chinese II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Prerequisites:** CHI 3210-Intermediate Chinese I.

**COURSE CHANGE REQUEST**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHI 3440</td>
<td>No prerequisites</td>
<td></td>
</tr>
</tbody>
</table>
PHYSICS

NEW COURSE REQUEST

PHY 1XXX First year Physics Seminar
Introduces activities, members, research and facilities of the Physics Department, curriculum choices, and physics career options to freshmen through group discussions and faculty seminars. Repeatable for credit. 1 credit

PHY 3XXX Methods in Theoretical Physics
Methods in theoretical physics and theoretical applications in physics. Includes analytic and numerical methods for differential equations, integral equations and transformations and other applications of real analysis. Prerequisites: MAC 2313. 3 credits

POLITICAL SCIENCE

NEW COURSE REQUEST

POS 4XXX Analytic Writing
Develops and refines skills necessary for effective written communication. Focus on inductive research and analysis process. For professions where analytic and writing skills are expected and valued. 3 credits

POS 4XXX Florida Politics
Provides analysis of the state and county politics of Florida. Special emphasis is placed on the regionalism inherent to politics in the state. 3 credits

POS 4XXX Politics of Voting Rights
Analyzes the development of the right to vote in the United States. Major emphasis is on Supreme Court decisions and federal laws. 3 credits

POS 5XXX Writing Professionally in Political Science
Focus on inductive research process. Refines technical skills for effective written and communication. Best practice examples for preparing briefing papers, articles, books, and grant applications. 3 credits

PSYCHOLOGY

NEW COURSE REQUEST

EAB 6XXX Applications of Verbal Behavior for Autism and Asperger Syndrome
Verbal behavior is analyzed by function. Structural and developmental issues, as well as implications for language training and ethical application to autistic populations are integrated throughout. 3 credits

EAB 6XXX Behavioral Technologies
Evaluating interventions, staff training, managing treatment teams, as well as, data-based evaluation of teaching procedures, behavior outcomes and team member performance. Prerequisites: Graduate standing. 3 credits

EAB 6XXX Ethical Code in Behavior Analysis
Ethical issues in clinical Behavior Analysis are examined including selecting behavior targets, monitoring intervention success and transferring control to existing environmental contingencies. Prerequisites: Graduate standing. 3 credits

RESEARCH CHANGE REQUEST

CLP 2001 Delete any prerequisites listed
DEP 2000 Delete prerequisites: PSY 2020 or equivalent
DEP 3115 Delete prerequisites: PSY 2020 and one development course, any level recommended.

RELIGIOUS STUDIES

NEW COURSE REQUEST

REL 4XXX Holocaust Memorials
Examines the contemporary religious, moral and cultural impact of the Holocaust through the analysis of selected memorial forms: memoirs, theology, fiction, cinema, monuments, museums and the arts. 3 credits

REL 4XXX Jews of Arab Lands in the Middle Ages
An examination of Jewish culture from the rise of Islam in the 7th century to the end of the Middle Ages. 3 credits

REL 4XXX Jewish Sephardic Thought
The main Sephardic and Oriental thinkers. Includes philosophers rabbinnics. 3 credits

REL 4XXX Latinas & Religion in the Americas
Review the practices, beliefs, social and political activism, and the theological and biblical reflections of Latinas in the Americas from a historical perspective to modern day. 3 credits

REL 4XXX Peace, War and Kabbalah
Study the basic categories of Kabbalah as an esoteric doctrine and evaluate its unique approach to war and peace within the historical context of the Sephardic Jewish experience. 3 credits

REL 4XXX Voice of the Prophet
Familiarizes students with the position and history of prophetic traditions (Hadith) in Islam. 3 credits

REL 5XXX Jews and Muslims in the Middle Ages
Study of Jewish culture from the rise of Islam in the 7th century, usually considered the start of Jewish Medieval Era, to the end of the Middle Ages. 3 credits

REL 5XXX Jewish Thought and Thinkers
The main Sephardic and oriental thinkers since the Middle Ages. Includes philosophers, rabbinnics. 3 credits
## SCHOOL OF MUSIC

### NEW COURSE REQUEST

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUL 4XXX</td>
<td><strong>Keyboard Literature II</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of solo works for the keyboard from 1828 to the present. Performance practices and stylistic analysis will be emphasized with illustrations of representative works. Prerequisites: Keyboard Literature I.</td>
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<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>MUL 5XXX</td>
<td><strong>Graduate Keyboard Literature II</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Study of solo works for the keyboard from 1828 to the present. Performance practices and stylistic analysis will be emphasized with illustrations of representative works. Prerequisites: Keyboard Literature I.</td>
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</table>

## COURSE CHANGE REQUESTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUL 4400</td>
<td>New title: <strong>Keyboard Literature I</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New course number: MUL 4XXX</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>New catalog description: Study of solo works for the keyboard from historical beginnings to 1828. Performance practices and stylistic analysis will be emphasized, with illustrations of representative works.</td>
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUL 5405</td>
<td>New title: <strong>Keyboard Literature I</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New course number: MUL 5XXX</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>New catalog description: Study of solo works for the keyboard from historical beginnings to 1828. Performance practices and stylistic analysis will be emphasized with illustrations of representative works.</td>
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</tbody>
</table>

## SOCIOLOGY/ANTHROPOLOGY

### NEW COURSE REQUEST

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANG 6XXX</td>
<td><strong>Diagnosis, Migration &amp; Globalization</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Examines a variety of theories of &quot;Biauspora&quot; that have proliferated during the last few decades, as the concept relates to processes of transnational migration and globalization.</td>
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</table>

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SYG 4XXX</td>
<td><strong>Depiction of Jews in Films</strong></td>
<td>3</td>
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<tr>
<td></td>
<td>A comparison of films about Jewish communities from different parts of the world to analyze how Jewish communities interact with different societies.</td>
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</tbody>
</table>

## THEATRE AND DANCE

### NEW COURSE REQUEST

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DAN 2XXX</td>
<td><strong>Sound and accompaniment for Dance</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An introductory course for sound and accompaniment for Dance. Students learn basic accompaniment techniques and how to develop and create original sound scores. Prerequisites: DAN 1600 or consent of instructor.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DAN 3XXX</td>
<td><strong>Methods in Teaching Dance</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Topics in arts centered dance pedagogy for K-12 populations are explored, practiced and discussed. Readings are accompanied by practice sessions in field teaching. DAN 3704 or Permission of Instructor.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>TPA 3XXX</td>
<td><strong>Scene Painting</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>A hands-on study of the basic techniques and processes used by scenic artists.</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP 3XXX</td>
<td><strong>Introduction to Acting for Film/TV</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An introduction to the fundamentals of acting/ directing for TV/film. Through practical exercises and creative assignments.</td>
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</tbody>
</table>

## COURSE CHANGE REQUESTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP 4XXX</td>
<td><strong>Delete</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

## COLLEGE OF BUSINESS

### MARKETING

### COURSE CHANGE REQUESTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Change of prerequisites: NO PRE-REQUISITE</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR 4503</td>
<td>Change of prerequisites: NO PRE-REQUISITE</td>
<td>3</td>
</tr>
</tbody>
</table>
**COLLEGE OF EDUCATION**

**CURRICULUM & INSTRUCTION**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEC 3XXX</td>
<td>Special Needs of Children and their Families</td>
<td>3</td>
</tr>
<tr>
<td>EME 5XXX</td>
<td>Digital Video in the Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

Hands-on digital video techniques and practices for integration into classroom applications. Designed for teachers who wish to use digital video in classroom settings.

<table>
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<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SSE 5385</td>
<td>Special Teaching Laboratory: Social Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Development of instructional skills, techniques, and strategies for teaching Social Studies in Middle School and Senior High School. Prerequisites: EDG 5414.

**EDUCATION AND PSYCHOLOGICAL STUDIES**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPS 7XXX</td>
<td>Psychological Assessment: Assessment &amp; Intervention in the Schools</td>
<td>3</td>
</tr>
</tbody>
</table>

This course emphasizes the consideration of developmental issues and processes when conceptualizing psychopathology and is designed to prepare school psychology students to provide assessment, direct intervention, and indirect intervention services in school settings. Prerequisites: SPS 6805. Co-requisites: Graduate Standing.

**COURSE CHANGE REQUEST**

EDF 6444 New course number: SPS 7XXX

**EDUCATIONAL PSYCHOLOGY AND SPECIAL EDUCATION**

**NEW COURSE REQUESTS**

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPS 7XXX</td>
<td>Neuropsychological Issues in School Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

This course provides a review of neuropsychological theories and research that pertains to children and schooling. The goal of this course is to provide competencies in the application of the neuropsychological perspective in school settings. Prerequisites: SPS 6191.

**HEALTH PHYSICAL EDUCATION AND RECREATION**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PET 4XXX</td>
<td>Clinical Education I</td>
<td>3</td>
</tr>
</tbody>
</table>

Designed to allow students to apply athletic training techniques associated with management of medical emergencies, acute care and injury prevention, and medical documentation and pharmacology. Prerequisites: PET 4990C, PET 4991, PET 4992.

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PET 4XXX</td>
<td>Therapeutic Modalities</td>
<td>4</td>
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</tbody>
</table>

Introduction to basic principles of theory and application of various modalities encountered in athletic training practice and to apply the basic principles in the laboratory setting. Co-requisites: PET 4XXX - Clinical Education I.

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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PET 4XXX</td>
<td>Orthopedic Assessment I - Lower Extremity</td>
<td>4</td>
</tr>
</tbody>
</table>

Introduction to common types of orthopedic injuries and/or dysfunctions that occur to the lower extremity during physical activity and the techniques of injury prevention, recognition, and evaluation. Prerequisites: PET 3325C, PET 4990C, PET 4991, PET 4992. Co-requisites: PET 4XXX - Clinical Education I.

**COLLEGE OF ENGINEERING**

**BIOMEDICAL ENGINEERING**

**NEW COURSE REQUESTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BME 7XXX</td>
<td>Doctoral Biomedical Engineering Seminar</td>
<td>0</td>
</tr>
</tbody>
</table>

The course consists of oral presentations made by guests, faculty and graduate students on advanced topics and current research activities in biomedical Engineering. Prerequisite: Permission of Major Professor and Doctoral Candidacy.

**COURSE CHANGE REQUEST**

BME 3700 (Inadvertently omitted from Bulletin #1) New prerequisite: BME 2740

**CIVIL AND ENVIRONMENTAL ENGINEERING**

**NEW COURSE REQUESTS**

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</thead>
<tbody>
<tr>
<td>ENV 4XXX</td>
<td>Environmental Engineering Senior Design Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Team design project involving applications of fundamental environmental engineering concepts to project design, specifications, contracts, and implementations. Emphasis on written and oral communication. Prerequisites: ENV 4401, ENV 4531, CWR 3103.
Environmental Laboratory II 1 credit
Laboratory experiments on applications of environmental engineering concepts related with air, water, land, and environmental health data collection, analysis and interpretation. Prerequisites: ENV 3001L, CWR 3201L, and permission of the instructor.

Intelligent Transportation Systems 3 credits
ITS functional areas, planning, architecture, standards, and evaluation. Implementation of selected ITS technologies and strategies. Prerequisites: TTE 4201 or equivalent.

COURSE CHANGE REQUESTS:

- EGN 2030 Credit change from 3 to 1
- ENV 3001L New Title: Environmental Laboratory I
- ENV 4513 New Title: Chemistry for Environmental Engineers
- ENV 5519 New Title: Chemistry for Environmental Engineers

COMPUTING AND INFORMATION SCIENCES

COURSE CHANGE REQUESTS:

- CEN 4500 New Prerequisites: CDA 4101 or (COP 3804 and CGS 4283)

MECHANICAL AND MATERIALS ENGINEERING

NEW COURSE REQUESTS

- EML 5XXX Special Projects in Mechanical Engineering Design and Business Development 3 credits
  Mechanical engineering design project that encompasses conceptual and structural design, analysis, and optimization by a study to develop a business venture to produce the designed product. Prerequisites: EML 4501 or equivalent, QMB 6357, MAN 6209.

- EML 5XXX Professional Development and Leadership for Mechanical Engineers 3 credits
  Consequences of engineering and concepts for personal career management, decision making leadership and intrapreneuring that enhance the effectiveness of professional engineering practice. Prerequisites: Senior standing in engineering.

COURSE CHANGE REQUESTS:

- EGM 6422 New title: Advanced Computational Engineering Analysis
  New prerequisites: EGM 5346 or permission of the instructor.

COLLEGE OF HEALTH AND URBAN AFFAIRS

COMMUNICATIONS SCIENCES AND DISORDERS

NEW COURSE REQUESTS

- SPA 6XXX Communication Disorders and Aging in a Bilingual Society 3 credits
  Survey of types and characteristics of bilingualism and normal and atypical speech and language changes associated with aging. Prerequisites: Consent of Instructor.

COURSE CHANGE REQUESTS:

- SPA 5216 New Title: Vocal, Velopharyngeal and Fluency Disorders
- SPA 5225 Delete
- SPA 5404 Credit change from 2 to 3
- SPA 5473 Delete
- SPA 5500 New Prerequisites: SPA 5401, SPA 5403, SPA 5404, SPA 5553.
- SPA 5502 New Prerequisites: SPA 5500 Basic Clinical Practicum.
- SPA 5571 Delete
- SPA 6232 New Title: Neuromotor Communication Disorders and Augmentative Communication
  New Course Description: Study of medical, physical, occupational, speech, language, and hearing problems of the neuromotorically impaired client, including assessment and intervention strategies for augmentative communication.
- SPA 6406 New Title: Dual Language Acquisition and Disorders
- SPA 6505 New Prerequisites: SPA 5502 Intermediate Clinical Practicum.
- SPA 6559 Delete
- SPA 6566 Credit change from 2 to 3
SCHOOL OF HOSPITALITY AND TOUR MANAGEMENT

HOSPITALITY AND TOURISM MANAGEMENT

NEW COURSE REQUESTS

HFT 3XXX  The History of Wine  3 credits
This course will provide a history of wine from prehistoric times to the late Victorian era, it covers all aspects of wine from its early use by the Gods of mythology to ancient and modern practices: food, weather, customs, living conditions, cost of production, what they ate, etc. Prerequisite: Must be 21 or older.

HFT 4XXX  Managing Tourism Services  3 credits
This course will introduce the student to management issues relating to services ad quality assurance in travel and tourism systems. It includes examination of the concept of service and quality as a basic function of sustainability and analysis of the importance of the linkages of service and quality within sustainable travel and tourism products. Prerequisites: HFT 3XXX Travel & Tourism Systems, HFT 3210, HFT 4221/4224, HFT 4701, HFT 4727 and must take course in last semester/ 12 hours left/ Graduating Student.

HFT 599X  Wine Technology  3 credits
This course is an introduction to the appreciation and management of wine, successful operators merchandising wines in restaurants, retail stores, supermarkets, and wholesale companies. Students learn the economics of buying and selling wine, how to taste and evaluate wines of the great vineyards around the world.

HFT 3XXX  Travel Information Technology  3 credits
This course provides a foundation for understanding and mastery of travel industry specific technologies, examines new technologies used in the travel industry which encourage unsurpassed quality, service and efficiency in today’s national and global travel industry.

SCHOOL OF JOURNALISM & MASS COMMUNICATION

ADVERTISING AND PUBLIC RELATIONS

COURSE CHANGE REQUESTS

MMC 3250  New Course Description: Introduction to media markets, with emphasis on television’s role in the media mix serving advertisers and end-users.
New prerequisites: Full admission to the upper division program.

MMC 4936  Change credit hours from (VAR) to 3.
New prerequisites: DELETE: Consent of instructor or dean required.

PUR 4101  New prerequisites: PUR 3000 or PUR 4100 (Supplies fee assessed)
Current Prerequisites | New Prerequisites
---|---
CHM 4130 Instrumental Analysis (3)  
CHM4130L Instrumental Analysis Lab (1).
Prerequisites: CHM 3120, 3120L, CHM 2211, 2211L, CHM 3410 or CHM 3400, PHY 2048, 2048L, PHY 2049, 2049L, or permission of the instructor.

CHM 4304 Biological Chemistry I (3). CHM 4304L Biological Chemistry I Lab (1).
Prerequisites: CHM 2211, CHM 3120, BSC 1011 or permission of the instructor. Corequisites: A semester of physical chemistry. Lecture is corequisite for lab.

CHM 4320L Research Techniques in Organic Chemistry (2).
Prerequisites: CHM 3120, CHM 2211, CHM 2211L, CHM 3410, and CHM 3411L.

CHS 3510C Forensic Evidence (3).
Prerequisites: CHM 1045, CHM 1045L, CHM 1046, CHM 1046L, CHM 2210, CHM 2210L, CHM 2211, CHM 2211L, CHM 3120, CHM 3120L or permission of instructor.

CHS 4503C Forensic Science (3)
Prerequisites: CHM3120 and CHM 2211 or permission of instructor. Corequisite: a semester of Physical Chemistry or permission of instructor.

CHS 4503L Forensic Science Lab (1).
Prerequisite: CHM 3120, 3120L, CHM 2211, 2211L, or permission of instructor.

CHS 5542 Forensic Chemistry (3)
Prerequisites: None

ISC 4041 Scientific Literature (1)
Prerequisites: 16 semester hours of science

CHM 4130 Instrumental Analysis (3)  
CHM4130L Instrumental Analysis Lab (1).
Prerequisites: CHM 3120, 3120L, CHM 2211, 2211L, CHM 3410 or CHM 3400, [(PHY 2048, 2048L, PHY 2049, 2049L) or (PHY 2053, 2053L PHY 2054, 2054L)], or permission of the instructor.

CHM 4304 Biological Chemistry I (3). CHM 4304L Biological Chemistry I Lab (1).
Prerequisites for CHM 4304: CHM 2211, BSC 1010 or permission of the instructor. 
Prerequisites for CHM 4304L: CHM 2211, BSC 1010, CHM 3120, CHM 3120L. Lecture is corequisite for lab.

CHM 4320L Research Techniques in Organic Chemistry (2).
Prerequisites: CHM 3120, CHM 2211, 2211L, CHM 3410, and CHM 3410L.

CHS 3510C Forensic Evidence (3).
Cannot be used as an elective for chemistry major.

CHS 4503C Forensic Science (3)
Prerequisite or corequisite: CHM 2211, 2211L, 3120, 3120L, [(CHM 3410 or CHM 3400) or (CHM 4130, 4130L)] or permission of instructor.

CHS 4503L Forensic Science Lab (1).
Prerequisite or corequisite: CHM 3120, 3120L, CHM 2211, 2211L, CHM 4130, 4130L or permission of instructor.

CHS 5542 Forensic Chemistry (3)
Prerequisites: CHM 3120, 3120L, CHM 2211, 2211L, or permission of instructor. Prerequisites or corequisites: [(CHM 3410 or CHM 3400) or (CHM 4130, 4130L)] or permission of instructor.

ISC 4041 Scientific Literature (1)
[None]