PLEASE DELIVER TO ALL DEANS, DIRECTORS & DEPARTMENT HEADS!!!

FLORIDA INTERNATIONAL UNIVERSITY

CURRICULUM COMMITTEE BULLETIN

CURRICULUM COMMITTEE BULLETIN #2 **November 15, 2005**

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 bulleti to Adis Beesting, Library (Curriculum Committee) Professor Leonard Bliss, College of Education (Graduate Council) or Barbra Roller (Undergraduate Council).

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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

passed 05/06:21

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

Not heard
Needs another Hearing
Didn't pass
resubmitted for B3 #05/06:16
Passed 05/06:

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

Not heard

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

passed #05/06:17

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

Proposal: *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.

Not heard, tabled to next mee

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 in 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 Kahan # 05/06:21 *(No Hearing Required)*

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 #05/06:56
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

tabled approved 6-20-06 as Bach in art

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

05/06:20 passed Shahid Hamid Bus

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 05/06:21

NAME: FIVE-YEAR ACCELERATED COMBINED BS/MS IN ELECTRICAL ENGINEERING PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Kang Yen 05/06:21

NAME: FIVE-YEAR ACCELERATED COMBINED BS IN ELECTRICAL ENGINEERING/MS IN TELECOMMUNICATIONS AND NETWORKING PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Niki Pissinou 05/06:21

NAME: FIVE-YEAR ACCELERATED COMBINED BS/MS IN COMPUTER ENGINEERING PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Kang Yen Action deferred #05/06:21

lifted 05/06:37

Combined Bachelor/Masters Degrees, continued:

NAME: COMBINED BS IN CIVIL ENGINEERING/MBA PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Berrin Tansel 05/06:21

NAME: COMBINED BS IN MECHANICAL ENGINEERING/MBA PROGRAM
COLLEGE: College of Engineering & Applied Science
CONTACT: Gordon Hopkins 05/06:21

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
passes #05/06:19

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
Proposed by the Chapman Graduate School of Business
Contact: Ken H. Johnson, Faculty Director of Masters of Science in International Real Estate
passes #05/06:18

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 FIN-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

05/06:22 [illegible]

Accelerated Degrees, continued:

ACCELERATED MASTER OF SCIENCE IN FORENSIC SCIENCE FOR CURRENT CHEMISTRY BS STUDENTS
Contact: Len Keller and J. Almirall Action deferred 05/06:21
05/06:26 now in compliance, may proceed

ACCELERATED MASTER OF SCIENCE IN ENVIRONMENTAL STUDIES
Contact: Mahadev Bhat 05/06:21

ACCELERATED MA IN RELIGIOUS STUDIES
Contact: Eric Larson 05/06:21

UNDERGRADUATE INFORMATIONAL (No Hearing)

MINOR IN INTERNATIONAL HOSPITALITY MANAGEMENT (Hospitality Management)
Contact: Diann 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.
05/06:21

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

Specialty Focus...B.S. Travel and Tourism Management
NEW Event and Meeting Planning Certificate (30)

	Core Requirements (21)		Electives (9) (Choose 3)
FSS 4336	Culinary Event Management Prerequisite: HFT 3230 Cor HFT 4802 Or permission of instructor	3	HFT 3210 Fundamentals of Management - 3 HFT 3403 Accounting for the Hospitality Industry - 3 HFT 3701 Sustainable Tourism Practices - 3
HFT 3XXX	Travel Information Technology	3	HFT 3753 Convention and Trade Show Management - 3
HFT 3741	Planning Meetings and Conventions	3	HFT 3900 - HFT 3905 Independent Studies - 3
HFT 4508	Meetings and Show Markets	3	HFT 4XXX Managing Tourism Services - 3
HFT 4754	Exposition and Events Management Prerequisites: HFT 3741, HFT 3210	3	HFT 4221 Human Resources - 3 HFT 4224 Human Relations - 3
HFT 4802C	Catering Management Prerequisite: HFT 3230C, or HFT 4874 Or permission of instructor	3	HFT 4240 Managing Service Organization - 3 HFT 4545 Leadership Training for Team Building - 3 HFT 4727 Travel Industry Law - 3
HFT 4996	Advanced Events Management Prerequisite: HFT 4754	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 05/06:21

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 satisrfactory progress towards the Ph.D.**

UNDERGRADUATE CERTIFICATE IN AGROECOLOGY (College of Arts & Sciences)
Contact: David Bray 05/06:21

Objectives of proposed Certificate Program

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).

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 3043+L	Ecology plus Lab	(4)
EVR 3013+L	Ecology of South Florida	(4)
Other ecology equivalent with a lab		(4)

2. Agroecology core requirement:

EVS 4xxx Sustainable Agriculture	(3)
EVS 4xxx Agroecology	(3)

3. Agricultural internship or problem analysis:

Take any one of the following:

EVR 4xxx Environmental GIS	(3)
BSC 4914 Student Research Lab	(2)
BSC 4914 Student Research Lab	(2)
BSC 3949 Cooperative Education in Biology	(2)
BSC 4915L Honors Research	(2)
EVR 3949/EVR 4949 Cooperative Education in Environmental Studies	(2)
EVR 4905 Independent Study	(2)
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, carrying out 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:

Take any two of the following:

EVR 4592 Soils and Ecosystems	(3)
EVR 3010 Introduction to Environmental Science: Energy Flows	(3)
EVR 3013 Ecology of South Florida	(3)
EVR 4xxx Environmental GIS	(3)
EVR 4869 Environmental Problem Solving	(2)
EVR 4026 Biotic Resources	(3)
EVR 4211 Water Resources	(3)
EVR 4312 Energy Resources	(3)
EVR 4321 Sustainable Resource Development	(3)
EVR 4323 Restoration Ecology	(3)
EVR 4401 Conservation Biology	(3)
EVR 4352 U.S. Environmental Policy	(3)
~~EVR 3415 Population and Environment~~	~~(3)~~
ECP 3302 Environmental Economics	(3)
ECP 4314 Natural Resource Economics	(3)
GEO 3510 Earth Resources	(3)
GEO 4476 Political Ecology	(3)
GEO 4354 Geography/Global Food System	(3)
GLY 3030 Environmental Geology	(3)
ENY 1004 General Entomology	(3)
ENY 4060 Advanced Entomology	(3)
MCB 3010General Microbiology	(3)
MCB 3010L General Microbiology Lab	(2)
MCB 4603Microbial Ecology	(3)
MCB 4653Food Microbiology	(3)
OCB 2061 Introductory Genetics	(3)
PCB 4301 Freshwater Ecology	(3)
APB 2170 Introductory Microbiology	(3)
BOT 3014 Plant Life Histories	(3)
BOT 3153 Local Flora	(3)
BOT 3663 Tropical Botany	(3)
BOT 3810 Economic Botany	(3)
~~BOT 4503 Plant Physiology~~	~~(3)~~
BSC 4422 Biotechnology: Applications in Industry, Agriculture and Medicines	(3)
INR 3043 Population and Society	(3)
INR 4054 World Resources, World Order	(3)
INR 4350 International Environmental Politics	(3)

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)** 05/06:21

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 ore 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/thesis 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.

UNDERGRADUATE CERTIFICATE IN NATIONAL SECURITIES STUDIES (College of Arts & Sciences)

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 maybe 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)

POS 4xxx	Analytic Writing

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:

Criminal Justice

CCJ 3101	Law Enforcement Systems
CCJ 4641	Organized Crime
CCJ 4661	Terrorism and Violence in Criminal Justice
CJE 4174	Criminal Justice: The International Perspective
CJL 4064	Criminal Justice and the Constitution

Economics

ECS 3013	Introduction to Economic Development
ECS 4013	Development Economics I
ECS 4014	Development Economics II
ECO 3203	Intermediate Macroeconomics
ECO 3704	International Economics
ECO 4321	Radical Political Economy
ECO 4400	Economics of Strategy and Information
ECO 4703	International Trade Theory and Policy

Business, Finance & Management

FIN 4461	Financial Risk Management – Financial Engineering
MAN 4613	International Risk Assessment
MAN 4702	Emergency and Disaster Management
MAN 4930	Special Topics
TRA 4621	Global Logistics

Forensics

CHS 3xxx	Survey of Forensic Science
CHS 4503C	Forensic Science

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 4300	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:

Economics

ECO 4701	World Economy
ECP 3123	Economics of Poverty
ECS 3200	Economics of Asia
ECS 3402	Political Economy of South America
ECS 3403	Economics of Latin America

Business, Finance and Management

FIN 3652	Asian Financial Markets and Institutions
FIN 4651	Latin American Financial Markets and Institutions
MAN 4660	Business in Latin America
MAN 4930	Special Topics

Geography

GEO 3001	Geography of Global Change
GEO 3176	Applications of Geographic Information Systems
GEO 3421	Cultural Geography
GEO 3471	Political Geography
GEO 3502	Economic Geography
GEA 3210	Geography of North America
GEA 3320	Population and Geography of the Caribbean
GEA 3400	Population and Geography of Latin America
GEA 3500	Population and Geography of Europe
GEA 3554	Geography of Russia and Central Eurasia
GEA 3600	Population and Geography of Africa
GEA 3635	Population and Geography of the Middle East
GEA 3705	Geography of Central Asia and the Caucasus
GEA 4202	Geography of the Borderlands

History

AFH 4100	History of Africa I
AFH 4200	History of Africa II
AFH 4342	History of West Africa
AFH 4405	History of East Africa
AFH 4450	History of South Africa
AMH 4170	Civil War and Reconstruction
AMH 4540	US Military History from the Colonial Era to the Present
ASH 3xxx	History of Japan
ASH 4300	East Asian Civilization and Culture
ASH 4374	History of Women in Asia
ASH 4404	History of China
EUH 2030	Western Civilization: Europe in the Modern Era
EUH 3282	European History, 1945 to Present
EUH 3570	Russian History
EUH 3576	Russian Revolution and the Soviet Union
EUH 4033	Nazism and the Holocaust
EUH 4286	Topics in European History
EUH 4462	History of Modern Germany
LAH 3132	The Formation of Latin America
LAH 3200	Latin America: The National Period
LAH 3450	Central America
LAH 3718	History of U.S.-Latin American Relations
LAH 3740	Comparative History of Latin American Rebellions and Revolutions
LAH 4932	Topics in Latin American History
WOH 3281	Jewish History to 1750
WOH 3282	Modern Jewish History

International Relations

INR 3214	International Relations of Europe
INR 3223	Japan and the United States
INR 3224	International Relations of East Asia
INR 3226	International Relations of Central Asia and the Caucasus
INR 3232	International Relations of China
INR 3243	International Relations of Latin America
INR 3246	International Relations of the Caribbean
INR 3252	International Relations of North Africa
INR 3253	International Relations of Sub-Saharan Africa
INR 3262	International Relations of Russia and the Former USSR
INR 3274	International Relations of the Middle East
INR 3331	European Foreign and Security Policy
INR 3705	Geography of Central Asia and the Caucasus
INR 4082	Islam in International Relations
INR 4085	Women and Men in International Relations
INR 4084	Ethnicity in World Politics
INR 4024	Ethnicity and Nationality: World Patterns and Problems
INR 4091	Ethical Problems in International Relations
INR 4283	International Relations, Development, and the Third World

Political Science

CPO 3204	African Politics
CPO 3304	Politics of Latin America
CPO 3403	Politics of Middle East
CPO 3502	Politics of Far East
CPO 3643	Russian Politics
CPO 4034	The Politics of Development and Underdevelopment
CPO 4053	Political Repression and Human Rights
CPO 4057	Political Violence and Revolution
CPO 4102	European Union in World Politics
CPO 4303	Politics of South America
CPO 4323	Politics of the Caribbean
CPO 4333	Politics of Central America
CPO 4340	Politics of Mexico
CPO 4360	Cuban Politics
CPO 4401	The Arab-Israeli Conflict
CPO 4404	Politics of North Africa
CPO 4461	Politics of Eastern Europe
CPO 4541	Politics of China
INR 3203	World Politics
INR 3702	Politics of World Economy
INR 4084	Ethnicity in World Politics

Religious Studies

ASN 4510	Dynamics of Asia
ASN 5315	Survey of Modern Asia
REL 3148	Violence and the Sacred
REL 3170	Ethics in World Religion
REL 3308	Studies in World Religions
REL 3310	Introduction to Asian Religions
REL 3313	Sources of Modern Asian Society
REL 3362	Islamic Faith and Society
REL 3443	Liberation Theology
REL 3672	Religion and Society in Israel
REL 4351	Religion and Japanese Culture
REL 4370	African Religions
REL 4441	Religion and the Contemporary World

Sociology

ANT 3212	World Ethnographies
ANT 3451	Anthropology of Race and Ethnicity
ANT 4211 – ANT 4327	Area Studies
ANT 4306	The Third World
ANT 4324	Mexico
ANT 4332	Latin America
ANT 4340	Cultures of the Caribbean
ANT 4343	Cuban Culture and Society
ANT 4352	African Peoples and Culture
SYD 3650	Sociology of Gender and Power in Asia
SYD 4237	Immigration and Refugees
SYD 4630	Latin American and Caribbean Societies
SYD 4704	Seminar in Ethnicity
SYP 4441	Sociology of World Development

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
PHH 3810 Philosophy of Buddhism
PHH 3840 Indian Philosophy
REL 3026 Folk Religions in Asia and the World
REL 3310 Introduction to Asian Religions
REL 3330 Religions of India
REL 4312 Jews of Asia
REL 4340 Pathways to Buddha
SYA 3810 Gender and Power in Asia

In addition to the courses listed above, relevant special topics, independent study, study abroad credits, and area studies or comparative studies courses may also be applied.

Language: There is no specific language requirement to be met, although it is recommended.
Two full years of Sanskrit are available on-line. Briefly Describe the Interdisciplinary Nature of the Proposed Certificate Program
The certificate in South Asian Area Studies draws on faculty and resources in a variety of disciplines. It encompasses courses in humanities, such as history and religion, and social sciences, including international relations and political science.

Show Evidence that the Library and/or Laboratory Resources are Available to Accommodate the Proposed Certificate Program

1. All core and required courses are existing courses. Likewise, all elective courses are pre-existing, generally part of other viable University programs and are offered regularly.
2. With the implementation of the Baccalaureate program in Asian Studies, the library has acquired resources in theoretical and periodical literature in Asian Studies.

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PHILOSOPHY HONORS TRACK – BACHELOR'S DEGREE WITH HONORS (College of Arts & Sciences)

Contact: Kenton Harris

To earn a BA in Philosophy with honors Philosophy majors may exercise the Thesis Option. This option is open only to students who are Philosophy majors and who must apply for it during the spring semester of the Junior year. To receive Honors via the Thesis Option, students must enroll in one three-credit Honors Thesis Independent Study course in Philosophy in each of the Fall and Spring semesters of their Senior year, be approved by both their Thesis Advisor (who directs the independent studies) and the Departmental Chairperson. Eligible students may apply for the Thesis Option by submitting an Honors Thesis Proposal to the department Chairperson provided they have met the following minimal conditions: they must have a cumulative FIU GPA of at least 3.5, they must have completed (by the end of that semester) at least five upper division philosophy courses, they must have completed (by the end of that semester) at least five upper division philosophy courses, they must have completed (by the end of that semester) at least one upper division philosophy course in the area in which they intend to write their Thesis, and they must have identified a faculty member who would be willing to supervise the Thesis and the two three-credit independent study courses which are associated with it. Students considering pursuing the Thesis Option should read the recommendations regarding Independent Study in the Philosophy Brochure

PREREQUISITE CHANGES

**(Listed below are the prerequisite changes grouped together by some units.
Others are included in the regular course change requests)**

COLLEGE OF EDUCATION 05/06:21

PREREQUISITE CHANGES SUBMITTED BY DAVID CHANG

This is to request that the prerequisites and/or corequisites be removed from the following courses in the catalog and on the Panther Soft registration system:

ARE 4316
ARE 4341
ARE 4940
ARE 5945
ARE 6746

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

Prerequisite Changes, College of Education, continued:
FROM: PATRICIA M. BARBETTA, SPED PROGRAM LEADER
Bachelor of Science

Exceptional Student Education/ESOL
Course Requirements

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

Master of Arts
Exceptional Student Education
With ESOL Endorsement
Course Requirements

Course	Current Prerequisites (2004-2005 Catalog)	Proposed Prerequisites
EDG 5414 Instructional Strategies for the Classroom Teacher	Permission of the instructor. Corequisite: EDG 5414L FER	No pre- or co-requisites
EDP 5219 Classroom Management	EDP 5053; Corequisite: EDG 5414	Prerequisite or Corequisite: EDG 5414, EDP 5053
EEX 6106 Acquisition of Speech and Language Skills		Prerequisite or Corequisite: EEX 6051
EEX 6227 Educational Assessment		Prerequisite or Corequisite: EEX 6051
EEX 5608 Behavioral Approaches to Learning and Classroom Management	EEX 6051	Prerequisite or Corequisite: EDP 5053
EEX 5259 Literacy in Special Education		Prerequisites or Co-requisites: EEX 6106, EEX 6051
EEX 5766 Instructional and Assistive Technology in Special Education	EEX 6051	Prerequisite or Corequisite: EEX 6051
RED 4150 Teaching Primary Reading	Undergraduate Level: LAE 3311 or SPA 3000; Corequisite: EDE 3941	Prerequisite: EDG 5414 Prerequisite or Corequisite: EEX 6051
MAE 4310 Teaching Elementary Math	Undergraduate Level: Three courses at college algebra and above; Corequisite: EDE 4940, Block 3 FE	Prerequisite: EDG 5414
RED 4325 Reading in Content Areas	Undergraduate Level: LAE 3311 or SPA 3000, RED 4150; Corequisite: EDE 4940, Block 3 FE	Prerequisite: EDG 5414
EEX 4940 Supervised Field Experience	Undergraduate Level, Corequisites: RED 4150, LAE 4314, MAE 4310	Corequisites: RED 4150 or MAE 4310
EEX 5841 Graduate Supervised Practicum (1 credit)	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), EMR 5215 (Strategies for Teaching Students with Mental Retardation)	Corequisite: EEX 5069
EEX 5068 Instructional Practices in Exceptional Student Education I	EEX 6051, EEX 6227, EEX 6106, EDP 5319	Prerequisites or Corequisites: EEX 6106, EEX 6051, EEX 6227; EDG 5414
EEX 5069 Instructional Practices in Exceptional Student Education II*	EEX 6051, EEX 5XXX, EEX 6227, EEX 6106, EDP 5319, EEX 5068	Prerequisites: EEX 6106, EEX 6051, EEX 6227; EDG 5414
		Prerequisite or Corequisite: EEX 5068; Corequisite: EEX 5841
EEX 6862 Student Teaching (6 credits)	Successful completion of all program requirements	Prerequisites: EDG 5414; EDP 5053; EDF 5517; EDP 5219; TSL 5271; TSL 5142; EEX 6051, EEX 6227, EEX 6106, EEX 5608; EEX 5075; EEX 5259; EEX 5766; RED 4150; MAE 4310; RED 4325; EEX 5841; EEX 5068; EEX 5069
EEX 6863 Supervised Field Experience (6 credits)	Successful completion of all program requirements	Prerequisites: EDG 5414; EDP 5053; EDF 5517; EDP 5219; TSL 5271; TSL 5142; EEX 6051, EEX 6227, EEX 6106, EEX 5608; EEX 5075; EEX 5259; EEX 5766; RED 4150; MAE 4310; RED 4325; EEX 5841; EEX 5068; EEX 5069

Master of Science
Exceptional Student Education
Course Requirements

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

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.
PEP 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.
PET 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 of 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.

COLLEGE OF ENGINEERING PREREQUISITE CHANGES:

From Sabri Tosunoglu. Changes from MME, BME and SCIS: 05/06/21

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

EML 4721	Introduction to Computational Thermo-Fluid	Prerequisites: Delete: EML 2030. Add: EML 2032.	Prerequisites: EML 2032 (equivalent or permission of the instructor), EGM 3311 (or equivalent), and EML 3126. Co-requisite: EML 4140.
EML 4806	Modeling and Control of Robots	Prerequisites: Delete: EML 3262. Add: EGN 3321 and EMA 3702.	Prerequisites: EGN 3321 and EMA 3702.
EML 5103	Intermediate Thermo Dynamics	Prerequisites: Delete: EML 3101. Add: EGN 3343.	Prerequisite: EGN 3343.
EM L 5104	Classical Thermodynamics	Prerequisites: Delete: EML 3101. Add: EGN 3343.	Prerequisite: EGN 3343.
EML 5412	Combustion Processes	Prerequisites: Delete: EML 3101. Add: EGN 3343.	Prerequisite: EGN 3343 and EML 4140.
EML 5599	Heat Pipe Theory and Applications	Prerequisites: Delete: EML 3101. Add: EGN 3343.	Prerequisite: EGN 3343 and EML 4140.

Course Prefix and Number	Course Title	Changes in Prerequisites and Co-requisites	Final and Complete List of Prerequisites and Co-requisites (as the list will appear in the catalog)
BME 4050L	Biomedical Engineering Lab I	Prerequisite: Add: BME 3701. Delete: BME 3700.	Prerequisites: BME 3701 and BME 3710. Co-Requisites: BME 3032.

From Tim Downey:

05/06:21

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 4005

COP 4226 Advanced Windows Programming
Current: COP 4338
Proposed: COP 3337

GRADUATE DEGREE PROGRAM CHANGES – ARCHITECTURE

CHANGES TO THE GRADUATE PROGRAM IN LANDSCAPE ARCHITECTURE 05/06:21

CONTACT: Marta Canaves

THREE-YEAR TRACK – 84 Credits
A professional degree for individuals with a Bachelor of Arts or a Bachelor of Science or equivalent, from an accredited institution.

Typical Curriculum

First Year (Fall Semester)		
~~LAA 5716~~	~~Landscape Architecture History (Course name change)~~	~~3~~
~~LAA 6374~~	~~Computer Lscp Arch (Course name and number change)~~	~~3~~
LAA 5652	Formative Studio	6
First Year (Spring Semester)		
LAA 6541	South Florida Landscapes	3
~~LAA 5374~~	~~Intro Comp Lscp Arch (Course name and number change)~~	~~3~~
LAA 5653	Site Studio	6
First Year (Summer Semester)		
LAA 6916	Research Methods	3
LAA 6382	Analysis Methods	3
Second Year (Fall Semester)		
~~LAA 5422~~	~~Site Development (Course name change)~~	~~3~~
LAA 5521	Tropical Landscapes	3
LAA 6654	Community Studio	6
Second Year (Spring Semester)		
LAA 5235	Theory of Landscape Architecture	3
LAA 5423	Landscape Construction	3
LAA 6655	Regional Studio	6
Second Year (Summer Semester)		
Elective		3
Elective		3
Third Year (Fall Semester)		
~~LAA 5427~~	~~Landscape Structures (Course change)~~	~~3~~
~~LAA 6937~~	~~Thesis Seminar (Course change)~~	~~3~~
AA 6835	Urban Studio	6
Third Year (Spring Semester)		
~~LAA 5425~~	~~Landscape Construction Documentation (Course name change)~~	~~3~~
LAA 6215	Professional Practice in Landscape Architecture	3
~~LAA 6971~~	~~Thesis (Course name change)~~	~~6~~
	Add LAA 6970 Master's Project 6 cr to provide option	

Proposed Curriculum Changes

First Year (Fall Semester)		
LAA 5716	***History of Landscape Architecture***	3
LAA 5371	***Computer Practices in Landscape Architecture 1***	3
LAA 5652	Formative Studio	6
First Year (Spring Semester)		
LAA 6541	South Florida Landscapes	3
LAA 5374	***Computer Practices in Landscape Architecture 2***	3
LAA 5653	Site Studio	6
First Year (Summer Semester)		
LAA 6916	Research Methods	3
LAA 6382	Analysis Methods	3
Second Year (Fall Semester)		
LAA 5422	***Landscape*** Development	3
LAA 5521	Tropical Landscapes	3
LAA 6654	Community Studio	6
Second Year (Spring Semester)		
LAA 5235	Theory of Landscape Architecture	3
LAA 5423	Landscape Construction	3
LAA 6655	Regional Studio	6
Second Year (Summer Semester)		
Elective		3
Elective		3
Third Year (Fall Semester)		
	Directed Elective	3
LAA 6910	***Graduate Seminar***	3
AA 6835	Urban Studio	6
Third Year (Spring Semester)		
LAA 5425	***Landscape Documentation***	3
LAA 6215	Professional Practice in Landscape Architecture	3
~~LAA 6971~~	~~***Master's Thesis***~~	~~6~~
LAA 6970	***Master's Project***	6

CHANGES TO THE MASTER IN ARCHITECTURE TRACK 2 05/06:21

CONTACT: Adam Drisin

Old

Fall First Year		**16Cr**
ARC 5361	Graduate Design 1	6Cr
ARC 5205	Advanced Design Theories	3
ARC 5483	Innovations in Bldg Tech	3
~~ARC 5483L~~	~~Innovations in Bldg Tech Lab~~	~~1~~
~~XXX~~	~~Open Elective~~	~~3~~
Spring First Year		**15Cr**
ARC 5361	Graduate Studio 2	6Cr
ARC 6947	Research Methods	3
ARC 5176C	Computer Practice 2	3
~~XXX XXX~~	~~Open Elective~~	~~3~~
Summer First Year		**6Cr**
~~XXX~~	~~Open Elective~~	~~3~~
~~XXX~~	~~OpenElective~~	~~3~~
Fall Second Year		**15Cr**
ARC 6356	Graduate Design 3	6Cr
ARC 6910	Thesis Seminar	3
BUL 6810	Legal Environ. Of Business	3
~~XXX XXX~~	~~Open Elective~~	~~3~~
Spring Second Year		**9Cr**
ARC 6971	Graduate Masters Thesis	6Cr
~~XXX~~	~~Elective~~	~~3~~
Old total Credits		**61**

New

Fall First Year		**15Cr**
ARC 5361	Graduate Design 1	6Cr
ARC 5205	Advanced Design Theories	3
ARC 5483	Innovations in Bldg Tech.	3
ARCXXX	ARC Directed Elective	3
	(Changed from open elective to ARC elective)	
Spring First year		**15Cr**
ARC 5362	Graduate Design 2	6Cr
ARC 6947	Research Methods	3
ARC 5176C	Computer Practice 2	3
ARCXXX	ARC Directed Elective	3
	(Changed from open elective to ARC elective)	
Summer First Year		**0Cr**
None		
Fall Second Year		**15Cr**
ARC 6356	Graduate Design 3	6Cr
ARC 6910	Thesis Seminar	3
BUL 6810	Legal Environ. Of Business	3
ARCXXX	ARC Directed Elective	3
	(Changed from open elective to ARC elective)	
Spring Second Year		**15Cr**
ARC 6971	Graduate Masters Thesis	6C
ARC 6270	Professional Practice	3
	(Add this Requ. Course)	
ARC XXX	ARC Directed Elective	3
	(Changed from open elective to ARC elective)	
ARC XXX	ARC Directed Electiv	3
	(Changed from open elective to ARC elective)	
New Total Credits		**60**

GRADUATE DEGREE PROGRAM CHANGES – ARCHITECTURE, continued:

CHANGES TO THE MASTER IN ARCHITECTURE TRACK 3

CONTACT: Adam Drisin

Old Curriculum			New Curriculum		
Fall First Year		**15Cr**	**Fall First Year**		**15Cr**
ARC 5075	Formative Studio	6Cr	ARC 5075	Formative Studio	6Cr
~~ARC 1461~~	~~Methods & Materials of Design~~	~~3~~	ARC 5XXX	Materials and Methods of Const. (Replaces Materials and Methods of Design)	3
ARC 3243	Design Theories	3	ARC 5XXX	Design Theories	3
ARC 2701	History of Des. Ant.-M. Ages	3	ARC 5XXX	History of Des. Ant- M. Ages	3
Spring First Year		**16Cr**	**Spring First Year**		**16Cr**
ARC 5075	Formative Studio 2	6Cr	ARC 5075	Formative Studio 2	6Cr
ARC 2702	History of Des. Ren. To 1840	3	ARC 5XXX	History of Des. Ren. To 1840	3
ARC 2580	Structures & Systems 1	3	ARC 5XXX	Structures & Systems 1	3
BCN 4561C	Environ. Controls 1	4	BCN 4561C	Environ. Controls 1	4
Summer First Year		**16Cr**	**Summer First Year**		**16Cr**
ARC 5077	Formative Studio 3	6Cr	ARC 5077	Formative Studio 3	6Cr
ARC 4783	History of Des. 1840 to present	3	ARC 5XXX	History of Des. 1840 to present	3
ARC 4553	Structures 2	4	ARC 5XXX	Structures 2	4
BCN 4564	Environ. Controls 2	3	BCN 4564	Environ. Controls 2	3
Fall Second Year		**16Cr**	**Fall Second Year**		**15Cr**
ARC 5361	Graduate Design 1	6Cr	ARC 5361	Graduate Design 1	6Cr
ARC 5205	Adv. Design Theories	3	ARC 5205	Adv. Design Theories	3
ARC 5483	Innovations in Bldg Tech.	3	ARC 5483	Innovations in Bldg Tech.	3
~~ARC 5483L~~	~~Innovations in Bldg Tech. Lab~~	~~1~~			
~~XXX XXX~~	~~Open Elective~~	~~3~~	ARC XXX	ARC Directed Elective (changed from open elective to ARC elective)	3
Spring Second Year		**15Cr**	**Spring Second Year**		**15Cr**
ARC 5361	Graduate Design 2	6Cr	ARC 5361	Graduate Design 2	6Cr
ARC 6947	Research Methods	3	ARC 6947	Research Methods	3
ARC 5176	Computer Practice 2	3	ARC 5176	Computer Practice 2	3
~~XXX XXX~~	~~Open Elective~~	~~3~~	ARC XXX	ARC Directed Elective (changed from open elective to ARC elective)	3
Second Year Summer		**9Cr**	**Second Year Summer**		**0Cr**
ARC 4270	Professional Office Practice	3	None		
~~XXX XXX~~	~~Open Elective~~	~~3~~			
~~XXX XXX~~	~~Open Elective~~	~~3~~			
Third Year Fall		**15Cr**	**Third Year Fall**		**15Cr**
ARC 6356	Graduate Design 3	6Cr	ARC 6356	Graduate Design 3	6Cr
ARC 6910	Thesis Seminar	3	ARC 6910	Thesis Seminar	3
BUL 6810	Legal Environ. Of Business	3	BUL 6810	Legal Environ. Of Business	3
~~XXX XXX~~	~~Open Elective~~	~~3~~	ARC XXX	ARC Directed Elective (changed from open elective to ARC elective)	3
Third Year Spring		**6Cr**	**Third Year Spring**		**12Cr**
ARC 6971	Master's Thesis	6Cr	ARC 6971	Master's Thesis	6Cr
			~~ARC 5270~~	~~Professional Office Practice~~	~~3~~
			ARC XXX	ARC Directed Elective (changed from open elective to ARC elective)	3
Old Total Credits		**168**	**New Total Credits**		**184**

GRADUATE DEGREE PROGRAM CHANGES - COLLEGE OF ARTS & SCIENCES

CHANGES TO THE MS IN BIOLOGY

CONTACT: Maureen Donnelly 05/06/21

Old Description (Changes highlighted by strikeout)	New Description (Changes highlighted by underscore)
Master of Science in Biology	**Master of Science in Biology**
To be admitted into the Master's degree program in Biology, a student must:	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.	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.	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.	3. Two letters of recommendation of the student's academic potential
4. Be accepted by a faculty sponsor.	4. Be accepted by a faculty sponsor.
5. Receive approval from the Departmental Graduate Committee.	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 TOFEL).	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 TOFEL).

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]	22

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 05/06:21

Old Description (Changes highlighted by strikeout)	New Description (Changes highlighted by underscore)
~~D~~octor of Philosophy in Biology	**Doctor of Philosophy in Biology**
To be admitted into the Ph.D. program in Biology, a student must:	To be admitted into the Ph.D. prgrom in Biology, a student must:
1. Hold a Bachelor's degree in a relevant discipline from an accredited college or university.	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.	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).	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.	4. Be sponsored by a Biology faculty member <u>with Dissertation Advisor Status (see list of graduate faculty with DAS)</u>.
5. Arrange to have three letters of recommendation sent to the Biology Graduate Program Director evaluating the applicant's potential for graduate work.	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.	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).	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	**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 ~~b~~accalaureate are required, including a dissertation ~~b~~ased 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.	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~~	~~Required Courses~~
BSC 7981 Dissertation Proposal Seminar 1	BSC 7981 Dissertation Proposal Seminar 1
BSC 7982 Dissertation Defense Seminar 1	BSC 7982 Dissertation Defense Seminar 1
BSC 5945 Supervised Teaching in Biology 2	BSC 5945 Supervised Teaching in Biology 2
Workshops and Laboratories[1] 4	Workshops and Laboratories[1] 4
BSC 7980 Ph.D. Dissertation 24	BSC 7980 Ph.D. Dissertation 24
Electives[2] 8	Electives[2] 8
~~Foreign Language Competency[3]~~	<u>Quantitative Skills Requirement[3]</u>
Recommended Course	**Recommended Course**
BSC 6457 Introduction to Biological Research 3	BSC 6457 Introduction to Biological Research 3
[1]Following graduate committee approval, students may fulfill this requirement with any combination of graduate workshops, graduate laboratories, and graduate courses (minimum of three separate courses).	[1]Following Advisory Committee approval, students may fulfill this requirement with any combination of graduate workshops, graduate laboratories, and graduate courses (minimum of three separate courses).
[2]No more than 36 credits may be transferred from another graduate program, subject to the approval of the Graduate Committee.	[2]No more than 36 credits may be transferred from another graduate program, subject to the approval of the Graduate Committee.
~~[3]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 toward graduation. As an alternative, students may substitute either six credits of computer programming or mathematics beyond Calculus II.~~	<u>[3]Two semesters of graduate courses in quantitative skills (e.g., statistics, mathematics, computer programming), or demonstrated equivalence of such, is required for the Ph.D. in Biology.</u>
~~G~~raduation Requirements	**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.	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; <u>two semesters of quantitative skills courses must be completed</u>, and a dissertation must be completed and accepted by the University.

CHANGES TO THE PH.D. PROGRAM REQUIREMENTS IN ECONOMICS

Contact: Cem Karayalcin

05/06:21

EXISTING

Course work Requirements

Students must complete 48 hours (16 courses) of graduate level course work. Supervised research, independent study, seminars, and dissertation credit do not count towards this objective.

This required minimum of 16 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 (normally either the Graduate Director 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 a retake also results in a grade lower than 'B-', 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 (of 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 7206 Macroeconomic Theory I 3
ECO 7207 Macroeconomic Theory II 3
ECO 7405 Mathematical Methods in Economic Analysis 3
ECO 7424 Econometric Methods I 3
ECO 7425 Econometric Methods II 3
ECO 7305 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 on core theory—the first six core courses listed above. A student who fails twice will not be allowed to remain in the program. A student must receive at least a 'B' (3.0) average in the first seven courses in order to participate in the comprehensive core theory qualifying examination.

Field Study

During the fourth and fifth semesters, students will complete course work 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, presented 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 that field. History of Economic Thought should also be completed by the end of the third year.

Dissertation Work

Upon completion of 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 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 18 credits of dissertation.
c. Attend Advanced Workshops by enrolling in ECO 7925 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 fulltime students at the University for at least a 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 examinations, and complete the oral defense and acceptance of the Ph.D. dissertation.

NEW

Course work Requirements

Students must complete 39 hours (13 courses) of graduate level course work. Supervised research, independent study, seminars, and dissertation credit do not count towards this objective.

This required minimum of 13 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; if a retake also results in a grade lower than 'B-', 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 (of 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 7206 Macroeconomic Theory I 3
ECO 7207 Macroeconomic Theory II 3
ECO 7405 Mathematical Methods in Economic Analysis 3
ECO 7424 Econometric Methods I 3
ECO 7425 Econometric Methods II 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 on core theory—the first four core courses listed above. A student who fails twice 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.

Field Study

During the fourth and fifth semesters, students will complete course work 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 24 credits of dissertation.
c. Attend Advanced Workshops by enrolling in ECO 7925 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 fulltime students at the University for at least a 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 examination and have their field paper accepted , and complete the oral defense and acceptance of the Ph.D. dissertation.

CHANGES TO THE MS DEGREE IN ENVIRONMENTAL STUDIES

Contact: Mahadev Bhat

- 05/06 : 21

Current		Proposed
Thesis Track: Course Requirements		**Thesis Track: Course Requirements**
EVR 5320 Environmental Resource Management	3	No change
....		
....		No Change
....		
Total Credits	36	No Change
The research methods course and electives are selected.....		**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		**.....Additional Master's Thesis, Thesis Research, or Graduate Independent Study up to a maximum total of 3 credits may also be applied as elective credit. A maximum of six credit hours may be taken at the .....**
A maximum of 5 credit hours of Independent study credit (EVR 5907 Graduate Independent Study) may be applied toward graduation.		**Delete**

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

05/06 : 21

Degree Requirements	Degree Requirements
Thesis Option	**Thesis Option**
1. A minimum of 30 semester-hours for the degree, including the maximum of six semester-hours of Thesis Research. All course work must be taken at FIU.	1. A minimum of 30 semester-hours for the degree, including the maximum of six semester-hours of Thesis Research. All course work must be taken at FIU.
2. A minimum of 24 semester-hours of course work.	2. A minimum of 24 semester-hours of course work, including two Research Seminars
3. Two Research Seminars (6 semester hours).	~~3. Two Research Seminars (6 semester hours).~~
4. Reading competence in a foreign language. Language competency is assessed by the faculty of the Department of History, as appropriate. Courses required 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 Spanish, French or German; the United States concentration requires proficiency in any of the above, and the medieval or ancient concentration in at least one of those languages in addition to Hebrew, Latin, Greek or another ancient language as deemed appropriate by the student's advisor.	34. 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 attain ~~required to meet the~~ language competency ~~requirement~~ do not count towards the degree. The Latin American concentration requires proficiency in either Spanish, Portuguese, or another language appropriate to the student's field ~~Spanish or Portuguese~~; the modern European concentration requires proficiency in an appropriate European language ~~Spanish, French or German~~; the United States concentration requires proficiency in any of the above, or competency in social science quantitative skills, demonstratred by receiving a grade of B or higher in an appropriate course approved for this purpose by the Director of Graduate Studies; and the medieval or ancient concentration in two languages:at ~~least one of those languages in addition to~~ one of Hebrew, Latin, Greek or another ancient language as deemed appropriate by the student's advisor, and one modern European language.
5. All students are required to take HIS 6059 (Historical Methods). Students may not transfer credits from other programs to fulfill this requirement.	~~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:	46. The following limits are placed in accumulating credits toward the M.A. degree:
a. No more than three semester-hours of HIS 5908 (Independent Study) are permitted.	a. No more than ~~three~~ six semester-hours of HIS 5908 (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.	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 5930 (Special Topics).	~~c. A maximum of six semester-hours of HIS 5930 (Special Topics).~~
d. Students are prohibited from taking more than one Research Seminar per semester.	cd. 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.	de. Students are prohibited from taking graduate-level cross-listed courses that they have already taken at the undergraduate level.
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. Twelve semester-hours of course work will be taken within the core area.	5. 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

8. 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 6970 (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 Offices 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 set requirements of 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 FIU.

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:

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

b. HIS 5908 (Independent Study) is limited to three semester-hours.

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

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

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 the core area.

78. 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.

8. Students will take one elective course for 3 semester-hours.

99. Students will register for up to six semester-hours of HIS 6970 (Thesis Research).

10. At least one research seminar, and one other course, must be comparative. Comparative courses must has HIS or WOH prefixes, or else be Independent Study approved for this purpose by the Director of Graduate Studies

110. The thesis must be successfully defended and formally approved by a ThesisSupervisory Committee composed of three members, two of whom must be members of the Department of History. The Supervisory Thesis 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 Offices 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 set requirements forof the Core/Breadth area distribution. Students will design their distribution needs course work in consultation with the Graduate DirectorAdvisor and the relevant faculty. All courses must be taken in the Department of History at FIU.

2. A minimum of two Research Seminars (6 semester-hours) must be taken. One seminar or other paper will, with the approval of the professor for whom it was written, be revised as a report and submitted to the Graduate Committee for final approval.Only Research Seminar papers (2) that secure relevant faculty approval may be submitted to the Graduate Advisor for process of final approval.

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

4. 6 semester-hours, not including Historical Methods, must be comparative. Comparative courses must have HIS or WOH prefixes, or else be Independent Study approved for this purpose by the Direcotr of Graduate Studies

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

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

b. HIS 5908 (Independent Study) is limited to three six semester-hours.

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

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

CHANGE TO THE ADMISSIONS REQUIREMENTS FOR THE MASTERS IN HISTORY

CONTACT: Alan Kahan

05/06:21

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 to 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 concentration 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 make their selection 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 also satisfy 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 must be taken within three years prior to the application.

2. Two letters of recommendation. Applicants should ensure that each letter on their behalf is signed by the author along the sealed flap of the envelope. Letters should be mailed directly to the Graduate Program Director, together with the waiver form available from the Department of History.

3. Applicants must have completed 12 semester-hours of credit (on the basis of 3-hour courses) in undergraduate courses in History.

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 course work in History (3000-4000 level) with no grade lower than a "B" (3.0), the student may apply for regular admission. The application will be reviewed by the Department's Graduate Program Director, in consultation with the Department's faculty. The above admissions 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.

Master of Arts in History

The Department of History offers the M.A. degree, with concentration 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 Advisor. Students must make their selection 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 also satisfy 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~~January ~~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.

~~—~~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.~~ 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 they will strengthen their application ~~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 must be taken within 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 along the sealed flap of the envelope. Letters should be mailed directly to the ~~Graduate Program~~ Director of Graduate Studies, together with the waiver form available from the Department of History website.

~~3. Applicants must have completed 12 semester-hours~~ of credit (on the basis of 3-hour courses) in upper-division undergraduate courses in History, or equivalent, as approved by the Director of Graduate Studies.

Any applicant with fewer than twelve (12) semester-hours of undergraduate courses in History should consult the Director of Graduate Studies about taking at least six (6) semester-hour graduate credits as a Special Student ~~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 this work ~~nine semester-hours of undergraduate course work in History (3000-4000 level) with no grade lower than a-~~ with an average grade of "B+" (3.30), the student may apply for regular admission. ~~The application will be reviewed by the Department's Graduate Program Director, in consultation with the Department's faculty.~~ Other methods may be pursued with the permission of the Director of Graduate Studies.

The above admissions 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.

CHANGES TO THE PUBLIC HISTORY OPTION IN THE MASTERS

CONTACT: Alan Kahan 05/06:21

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 MAs, which brings their language requirement into line with the Report option, the other non-thesis MA offered by the History department.

CURRENT

Internship in Public History Option

1. A minumum of 30 semester hours for the degree, including a maximum 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 musuem 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 5067 (Public History), HIS 5084 (Museum History), ARH 5850 (Introduction to Museum Studies).
3. A minimum of two Research Seminars (6 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 graudate-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.

PROPOSED

Internship in Public History Option

1. A minumum of 30 semester hours for the degree, including ~~a maximum of 6~~ semester hours of Independent Study tied to an internship in the fields of Museum Studies or Public History. The internship requires ~~Six credit hours equal to a~~ minimum of 300 520 hours of work that is to be documented by the project supervisor or musuem director. The internship must be approved by the Graduate Program Director and supervised by a regular member of the department's faculty. Students must submit a written report following departmental regulations of their internship activities to the Graduate Committee before the degree can be awarded.

~~1.~~

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 5067 (Public History), HIS 5084 (Museum History), ARH 5850 (Introduction to Museum Studies) ARH 5851 (Museum Ethics). Other appropriate courses may be substituted with permission of the Director of Graduate Studies.
3. A minimum of two Research Seminars ~~Seminars (6 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. 4. HIS 6059: Historical Methods
6. 5. 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~~) or better in order for any course to count toward the degree.
   b) Students may not take more than one Research Seminar per semester.
   c) Students may not take graudduate-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.~~

REVISION TO MA IN LATIN AMERICAN AND CARIBBEAN STUDIES

CONTACT: Astrid Arraras

05/06'21

Latin American and Caribbean Studies
Eduardo A. Gamarra, *LACC, Director*
Julissa Castellanos, *LACC, Associate Director*
Michael V. Collier, *LACC, Graduate Program Director*
LACC Academic Advisory Committee
Irma Alonso, *(Economics)*
David Bray, *(Environmental Studies)*
Ana Roca, *(Modern Languages)*
Victor Uribe, *(History)*

Change 1:
Astrid Arrarás, *LACC Graduate Program Director*

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's objective is to prepare graduates for careers as analysts for the public and private sectors. Many graduates also continue on to doctoral-level studies to pursue 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. Full-time students can expect to complete the program in 12-24 months. The program stresses a close faculty-student advising relationship and includes the participation of visiting scholars from Latin America, the Caribbean, and other regions.

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.

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. LACC also administers partnership degree programs with the Joint Forces Staff College. More information on joint and partnership degrees is found at the end of this section.

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

For further iaformation please contact LACC Graduate Program Director, Latin American and Caribbean Center, Florida International University, University Park DM 353, Miami, Florida 33199. Phone: (305) 348-2894; Fax: (305) 348-3593; email: MALACS@fiu.edu, or see the MALACS web site at http://lacc.fiu.edu.

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. A combined verbal and quantitative score of at least 1000 on the GRE.
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).

Change 4:
A combined verbal and quantitative score of at least 1000 (60th percentile) on the GRE or the equivalent percentile or higher on other exams such as EXADEPT, GMAT or LSAT.

9. Approval by the program admissions committee.

Note: The above admission requirements are minimums and not all students meeting them are assured admission. Students with either a grade-point average or GRE score below the above minimums may still apply and request admission considered on the waiver of formal minimum standards. The student must provide an explanation of why the waiver is being requested.

Change 5:
Students with either a grade-point average or GRE score below the above minimums may still apply and request conditional admission.

REVISION TO MA IN LATIN AMERICAN AND CARIBBEAN STUDIES, continued

CONTACT: Astrid Arraras

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 [Andean Studies, Brazilian Studies, Caribbean Studies, Comparative Politics, Comparative Sociology, Cuban Studies, Cultural 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.] 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. [MALACS offers four graduation exit options:]

[1. Completion of thesis project (6 credits),
2. Participation in one semester internship and preparation of a major research paper (6 credits),
3. Completion of two directed research projects (6 credits), or
4. Taking six (6) additional credits of Latin American and Caribbean courses and passing a comprehensive examination.]

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 one semester 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.

[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]

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 6003 Survey of Latin America and the Caribbean (3 credits).

[The student's MALACS concentration graduate course in research methods (3 credits) and LAS 6930 Latin American and Caribbean Data Analysis (3 credits).]

3) [MALACS concentration: 12 credits (four courses) selected from the graduate offerings of the student's concentration (Andean Studies, Brazilian Studies, Caribbean Studies, Comparative Politics, Comparative Sociology, Cuban Studies, Cultural Studies, Economics, Environmental Studies, Foreign Policy and Security Studies, Haitian Studies, Hispanic Literature and Film, History, International Business, International and Comparative Law, International Development, or International Relations).] The 12 credits must include the concentration's introductory foundation or theory course(s) when designated.

4) [Breadth requirement]: 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 6 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

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 9:
2) Two research methods courses: (1) introductory research methods course, either in the student's concentration or (2) one offered by MALACS; and LAS 6930 Latin American and Caribbean Data Analysis (3 credits).

Change 10:
MALACS concentration: 12 credits (four courses) selected from the graduate offerings of the student's concentration (Andean Studies, Brazilian Studies, Caribbean Studies, Comparative Politics, Comparative Sociology, Cuban Studies, Cultural 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:

REVISION TO MA IN LATIN AMERICAN AND CARIBBEAN STUDIES, continued
CONTACT: Astrid Arraras

Dutch when justified by research interests. Proficiency is demonstrated by scoring at least intermediate high on the ACTFL exam for Spanish, Portuguese, or French. For other languages, corresponding tests of proficiency and levels of achievement will be required. Intermediate high on the ACTFL exam (plus or 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 (200-level) instruction. Attainment of the required language proficiency is the responsibility of the student and extra instruction to achieve the required proficiency level must be taken outside the MALACS curriculum. Fellowships and scholarships to study Portuguese and Haitian Creole are available to selected MALACS students. Opportunities for students to improve their language proficiency is provided in courses offered by the FIU Modern Languages Department, through special summer institute language programs, and by taking designated Foreign Language Across Curriculum (FLAC) courses. Completion of a FLAC course meets the MALACS language proficiency requirement.	**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 (2+ on the US government scale) can normally be attained by students with **six** undergraduate semesters of **language** instruction **(in basic, intermediate and advanced level).**
Research Methods A minimum of 9 credits (two courses in research methods must be fulfilled by taking the student's MALACS concentration graduate course in research methods and LAS 5207 Intro. A Program and Caribbean Data Analysis. When a concentration area does not have a specific graduate course in research methods, then the student should take SPA 6938 Research Methods to meet the requirement. The LACC graduate program director may approve substitute research methods courses, depending on the student's previous research methods background and research interests.	**Change 14:** DELETE
MALACS Graduation Exit Options Thesis Option 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 concentrations. 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.	**Change 15:** **1)** Thesis Option
Internship Option As a substitute for the thesis option, students may select an internship 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. **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. One research paper will address a topic in the student's MALACS concentration and the second paper will address a topic of more general interest to the region. Students will register for two directed research courses (3 credits each) with their major professor(s).	**Change 16:** **2) Internship and Major Research Paper Option** As a substitute for 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 17:** 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** (3 credits each) with their major professor(s).

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 LACC Graduate Program Director arranges for the student to take comprehensive examinations covering the student's MALACS concentration and multidisciplinary Latin American and Caribbean issues.

Course Descriptions Definitions of Prefixes
FLAC – Foreign Language Across Curriculums;
LAS – Latin American and Caribbean Studies;
SSI – Interdisciplinary Courses.
F – Fall semester offering; S – Spring semester offering;
SS – Summer semester offering.

LAS 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 in Latin American and Caribbean studies. Prerequisites: LAS 6930 or equivalent. (F)

LAS 6942 Internship in Latin American and Caribbean Studies (1-9). Supervised internship leading to a major research paper in Latin American and Caribbean Studies. Prerequisites: All MALACS course work completed. (F,S,SS)

LAS 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://lacc.fiu.edu.
Courses approved for the MALACS program are posted each semester on the FIU Class Schedule at http://sis2.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 353) 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
An agreement approved by the University Graduate

Change 18:
The LACC Graduate Program Director arranges for the student to take comprehensive examinations covering the student's MALACS concentration and multidisciplinary Latin American and Caribbean issues. Students will not receive credit for the comprehensive exam.

Change 19:
ADD:
LAS 5XXX Special Topics in Latin American Studies (3). Varies according to instructor. Prerequisite: Graduate standing or permission of the instructor.

Change 24:
An agreement approved by the University Graduate

REVISION TO MA IN LATIN AMERICAN AND CARIBBEAN STUDIES, continued

CONTACT: Astrid Arraras

School between the FIU Alvah 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 degrees and in doing so the student will save considerable time and money in pursuing each degree separately. Students must meet the entrance requirements for both the MBA and MALACS programs. Twelve credits from the MBA curriculum will be allowed toward the MALACS program and will constitute a MALACS concentration in International Business. Nine credits from the MALACS program will also count toward the MBA curriculum requirements. All other requirements to receive either the MBA or MALACS degree must be met. Additional information on the joint degree program is available on the Chapman Graduate School of Business and MALACS web sites.	School, between the FIU Alvah 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. **In doing so the student will finish both programs much sooner than if they pursue each degree separately.**
MALACS Partnership Degree with the Joint Forces Staff College An agreement between FIU and the Joint Forces Staff College (JFSC) of the National Defense Uuiversity, allows JFCS 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. Once accepted, students are required to take 15 credit hours of MALACS courses (5 classes): a research methods class, LAS 6003, LAS 6930, and three breadth courses in at least two MALACS concentrations other than Security Studies. 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 6003, LAS 6930, and two** breadth courses in at least two MALACS concentrations other than Security Studies
[redacted]	**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 6003, 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.

CHANGES TO THE MS AND PH.D. IN PSYCHOLOGY

CONTACT: Suzanna Rose

05/06:21

Old Description (Changes Highlighted by Strikeout)	New Description (Changes highlighted by underscore)
Department of Psychology	**Department of Psychology**
Graduate Admission Requirements The following are in addition to the University's Graduate Admission Requirements: 1. A 3.0 or higher GPA during the last 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 Admission 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.	**Graduate Admission Requirements** The following are in addition to the University's Graduate Admission Requirements: 1. A 3.0 or higher GPA during the last 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 3.5 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 Admission 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.
Graduate Admissions Procedures ~~Applicants must submit the following to the Graduate Studies Admission Committee,~~ Department of Psychology, Florida International University, Miami, Fl 33199 1. A photocopy of the admission application 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 applicant's academic background.	**Graduate Admissions Procedures** Submit to the University Admissions Office: 1. FIU Graduate Application form at: www.gradschool.fiu.edu 2. Certified transcripts of all college level work 3. Graduate Record Examination Scores (GRE) 4. TOEFL (for non-native English speakers) Submit to the Graduate Director, Department of Psychology, DM 256, Florida International University, Miami, Fl 33199. 1. A photocopy of the admission application 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 applicant's academic background. 4. Two writing samples (for Legal and Industrial-Organizational specializations)
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 seeing student category exclusive of prerequisite undergraduate coursed 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.	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 seeing student category exclusive of prerequisite undergraduate coursed 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 December 15 for fall admission.
Master of Science in Psychology 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 profession objectives. Six of the 36 semester credit hours consist of	**Master of Science in Psychology** 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 profession objectives. Six of the 36 semester credit hours consist of

CHANGES TO THE MS AND PH.D. IN PSYCHOLOGY, continued:

CONTACT: Suzanna Rose

The ~~Mental Health Counselor~~ Master's program allows students to meet university requirements plus the requirements for Mental Health Counseling license.	The Counseling Psychology Master's program allows students to meet university requirements plus the requirements for Mental Health Counseling license. [Note: Name was officially changed in 2004-05.]
	Degree Requirements for the Masters of Science in Psychology The areas of specialization within the Masters of Science program in Psychology include Industrial/Organizational, Lifespan Developmental, Behavioral Analysis, and Counseling Psychology. *Industrial Organizational Specialization* Students are required to take 36 semester hours/credits beyond the Bachelor's degree. Required Courses: (a) Two Proseminars (6 credits) INP 5095 Proseminar in Industrial Psychology SOP 5616 Social Psych. of Organizations (b) Four Methodology Courses (12 credits) STA 5106 Intermediate Statistics I STA 5107 Intermediate Statistics II CLP 6436 Psychological Assessment INP 6940 Strategies and Methods of Applied Psychological Research (c)Four Level II Courses (12 credits) INP 6216 Personnel Selection INP 6235 Applied Psy.of Training & Dev. PSY 5939 Team Effectiveness INP 6611 Organizational Stress PSY 5939 Organizational Leadership PSY 5939 Psy. of Organizational Culture (d) Master's Thesis (6 credits): The thesis must be chaired by an I/O faculty member) Master's Non-thesis option: (1) One Elective Course (3 credits) and (2) One Capstone Course (3 credits): PSY 5939 Organizational Consulting *Lifespan Developmental Specialization* Students are required to take 36 semester hours/credits beyond the Bachelor's degree. Required Courses: (a) Two statistics/methodology Courses (6 credits) ~~DEP 5796 Methods of Dev. Research~~
	Plus 3 credits from among the following: STA 5106 Intermediate Statistics I STA 5107 Intermediate Statistics II INP 6970 Applied Psychological Research PSY 5246 Multivariate Analysis in Applied Psychological Research EAB 5797 Single-Case Research Methods (b) Three Developmental Seminars (3 courses) DEP 6117 Psychology of Caregiving DEP 5185 Emotional Learning & Its Reversal EAB 6707 Developmental Behavior Analysis DEP 6466 Cognitive Processes in Aging DEP 5044 Psychology of Moral Development DEP 7096 Seminar in Psychology of Life-Span Social Development or DEP 6477 Psy. of Social Processes in Aging DEP 5068 Applied Life Span Dev. Psych. (c)Supervised Research or Practicum (at least 6 credits) PSY 5908 Directed Individual Study PSY 5917/5918 Supervised Research PSY 5947 Supervised Field Experience (d) Masters Thesis (6 credits) *Behavioral Analysis Specialization* Students are required to take 39 semester hours/credits beyond the Bachelor's degree. Completion of this specialization fulfills the course and practice requirements for the Florida State Certification in Behavior Analysis (CABA, CBA), or for the National Board Certification in Behavior Analysis (BCABA, BCBA).

CHANGES TO THE MS AND PH.D. IN PSYCHOLOGY, continued:
CONTACT: Suzanna Rose

	Required Courses: (a) Two Quantitative/Methodology Courses (6 credits EAB 5797 Single Case Research STA 5106 Intermediate Statistics I STA 5107 Intermediate Statistics ** STA 5505 Nonparametric Methods STA 5236 Regression Analysis PSY 5246 Multivariate Anal. in App. Psy. Res. DEP 5796 Methods of Dev. Research (b) Two Core Area Courses (6 credits) EXP 5099 Experimental Psychology DEP 5099 Infancy, Childhood, & Adolescence DEP 5185 Emotional Learning & Its Reversal EDP 6211 Educational Psychology (c) Four Behavioral Analysis Courses (12 credits) EXP 5406 Theories of Learning EAB 5098 Exp. Analysis of Behavior
	EAB 6707 Developmental Behavior Analysis (d) Supervised Research (9 credits) PSY 5918 Supervised Research (6 credits) EAB 6XXX and/or EEX 6608 Seminar in Applied Behavior Analysis or EEX 6608: Applied Behavioral Analysis in Education (3 credits) (e) Master's Thesis (6 credits) *Professional Counseling Psychology (PCP) Specialization* The Professional Counseling Psychology specialization is offered on the FIU Broward-Pines Center campus as an accelerated format of the same Counseling Psychology Masters Program described below. In his format, the program can be completed within 18 months. The classes are held every other weekend on Friday evening 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 6525 Psy. Methods of Program Eval.~~ CYP 6536 Principles & Methods of Psychological Consultation PCO 6206 Principles & Practices of Counseling & Psychotherapy PCO XXX Couples & Family Systems CLP 5185 Current Issues in Mental Health CLP 5931 Ethical Code in Psy. Practices CYP 6766 Cross Cultural Sensitization CYP 5534 Groups As Agents Of Change CLP 5166 Advanced Psychopathology PCO XXX Theory, Research, & Treatment of Addictive Behavior CLP 6436 Intro. to Psy. Assessment CYP 6936 Current Issues in Community Psy. DEP 5405 Psych of Adulthood & Aging CLP 6498 Diag. & Trt. of Sexual Disorders DEP 5068 Applied Lifespan Dev. Psy. (b) Masters Thesis Option: Three required courses (9 credits) and thesis (6 credits) and thesis: CLP 6945 Clinical Practicum CLP 6948 Clinical Internship CLP 6949 Advanced Clinical Internship PSY 6971 Masters Thesis in Psychology (6) (c) Masters Non-Thesis Option:

CHANGES TO THE MS AND PH.D. IN PSYCHOLOGY, continued:
CONTACT: Suzanna Rose

		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 6948 Clinical Internship CLP 6949 Advanced Clinical Internship
Doctor of Philosophy in Psychology The doctorate program in psychology has two-fold focus: (1) life-span development (2) applied psychology. ~~The program emphasizes normal development as well as cross-cultural and urban perspectives on the life span and legal and industrial/organizational applied 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 foci 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.		**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 foci 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 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 Program Committee.
		Lifespan Developmental Specialization (a) Three Statistics/Method. courses(9 credits) DEP 5796: Methods of Dev. Research Plus two of the following: STA 5106 Intermediate Statistics I STA 5107 Intermediate Statistics II INP 6940 Strat. & Methods of App. Psy. Res. PSY 5246: Multivariate Anal. in App. Psy. Res. EAB 5797: Single Case Research Methods (b) Four Core Develop. Courses (12 credits) DEP 5099 Psy. of Infancy/Childhood/Adol. DEP 5405 Psy. of Adulthood/Aging DEP 5608 Theoretical Persp.in Dev. Psych. DEP 5315 Parent-Child Relations DEP 6168 Dev. Psychopath. Of Life Span DEP 5725 Psychosocial Development SOP 5081 Psychology of Health DEP 5068 Applied Life Span Dev. Psych. DEP 5118 Current Issues in Cognitive and Perceptual Dev. in Infancy (c) Four Advanced Dev. Seminars (12 credits) DEP 6117 Psychology of Caregiving DEP 5185 Emotional Learning & Its Reversal EAB 6707 Developmental Behavior Analysis DEP 6466 Cognitive Processes in Aging DEP 5044 Psychology of Moral Development CYP 6766 Cross-cultural Sensitization DEP 7096 Life-Span Social Development DEP 6477 Social Processes in Aging (d) Supervised Research, Practicum, Teaching (12 credits from below) PSY 5908 Directed Individual Study PSY 5917/5918 Supervised Research PSY 5947 Supervised Field Experience PSY 7915 Supervised Teaching (e) Electives: 6 credits inside or outside of the developmental area (f) Master's thesis (6 credits) (g) Comprehensive Examination: Part 1: Specialty Exam/Qualifying Paper Part 2: Theory/Method Exam (h) Doctoral Dissertation (~~36~~ 24 credits) *Legal Psychology Specialization* (a) Four Statistics & Method. Courses (12 Credits) STA 5106 Intermediate Statistics I STA 5107 Intermediate Statistics II CLP 6436 or 6438 Psychological Assessment INP 6940 Strategies & Methods App. Psy. Res. (b) Four Legal Psy. Core Courses (12 Credits) INP 5136 Psychology of Legal Consultation PSY 5939 Eyewitness Testimony PSY 5939 Child Witnesses PSY 5939 Actual Innocence and Wrongful

CHANGES TO THE MS AND PH.D. IN PSYCHOLOGY, continued:

CONTACT: Suzanna Rose

	Convictions CLP 6395 Forensic Psychology (c) SOP 6752 Psychology of Jurie Law or Legal Research Course (3 Credits) POS 6286 Judicial Research CCJ 5216 Criminal Law CCJ 5235 Criminal Procedure CCJ 5285 Judicial Process and Policy CCJ 5286 Comparative Law CCJ 5288 Legal Issues for Criminal Administration (d) Law Course Elective approved *in advance* (including courses at FIU Law School) (e) Three Psy. Minor Area Courses (9 Credits) SOP 5058 Proseminar in Social Psychology SOP 6441 Social Cognition EXP 5099 Prosem. in Experimental Psy. EXP 5508 Applied Cognitive Psychology (f) One Psy. Course Outside of Major/Minor Area (3 Credits) approved *in advance* (g) Teaching of Psychology (1 Credit) PSY 6945 Teaching of Psy. (h) Masters Thesis (6 Credits). (i) Qualifying Exam. A comprehensive exam covering three areas: Legal Psychology, an optional minor (social or cognitive), and methodology/statistics. (j) Dissertation (24 Credits). *Industrial Organizational Specialization* (a) Three Proseminars (9 credits) INP 5095 Proseminar in Industrial Psychology SOP 5058 Proseminar in Social Psychology SOP 5616 Social Psychology of Organizations (b) Four Methodology Courses (12 credits) STA 5106 Intermediate Statistics I STA 5107 Intermediate Statistics II CLP 6436 Psychological Assessment INP 6940 Strat. & Methods of App. Psy. Res. (c) Four Level II Courses (12 credits) INP 6216 Personnel Selection INP 6235 Applied Psy. Training & Dev. PSY 5939 Team Effectiveness INP 6611 Organizational Stress PSY 5939 Organizational Leadership PSY 5939 Psy. of Organizational Culture (d) Nine Elective Courses (27 credits) (e) Master's Thesis (6 credits) (f) Comprehensive Examination: A written examination covering both methodological and I/O psychology content knowledge. (g) 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.

COLLEGE OF EDUCATION PROGRAM CHANGES

CHANGES TO THE CONFLICT RESOLUTION AND CONSENSUS BUILDING PROFESSIONAL CERTIFICATE PROGRAM:

05/06 :21

CONTACT: Peggy Wilson

...OLLEGE OF EDUCATION – PROGRAM IN CONFLICT BUILDING. FACULTY CONTACT:	CHANGES TO CERTIFICATE ...OLUTION AND CONSENSUS ...RGARET "PEGGY" WILSON
Existing Catalog Text	Proposed Catalog Text
CONFLICT RESOLUTION AND CONSENSUS BUILDING PROFESSIONAL CERTIFICATE PROGRAM	CONFLICT RESOLUTION AND CONSENSUS BUILDING PROFESSIONAL CERTIFICATE PROGRAM
Margaret Wilson, Certificate Director (Labor Studies) *Coordinating Committee* Dawn Addy (Labor Studies) Carlos Alvarez (Educational Leadership/Policy Studies) Fred Becker (Public Administration) John Clark (International Relations) Paul Draper (Master Liberal Arts) Marvin Dunn (Psychology) Guillermo Grenier (Sociology/Anthropology) Joel Heinen (Environmental Studies) Thomas Humphries (Labor Studies) Nathan Katz (Religious Studies) Paul Kowert (International Relations) K. Galen Kroeck (Management) Virginia McCoy (Public Health) Diann Newman (Hospitality Management) Bruce Nissen (Labor Studies) Nicol Rae (Political Science) Joan Remington (Hospitality Management) Terry Rey (Religious Studies) Mary Tanke (Hospitality Management) Dian Weddle (Dietetics Nutrition)	Margaret Wilson, Certificate Director (Labor Studies) *Coordinating Committee* Dawn Addy (Labor Studies) Carlos Alvarez (Educational Leadership/Policy Studies) Fred Becker (Public Administration) John Clark (International Relations) Paul Draper (Master Liberal Arts) **Suzanna Rose (Psychology)** Guillermo Grenier (Sociology/Anthropology) Joel Heinen (Environmental Studies) Thomas Humphries (Labor Studies) Nathan Katz (Religious Studies) Paul Kowert (International Relations) K. Galen Kroeck (Management) Virginia McCoy (Public Health) Diann Newman (Hospitality Management) Bruce Nissen (Labor Studies) **Elizabeth Prugl (International Relations)** Nicol Rae (Political Science) **Keith Revell (Public Administration)** Joan Remington (Hospitality Management) Dian Weddle (Dietetics Nutrition)
The Conflict Resolution and Consensus building Certificate program offers ...tudents at the post-baccalaureate level ...e 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.	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 my be explored in this area of study are multi-disciplinary and lend 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.	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 my be explored in this area of study are multi-disciplinary and lend 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.
The certificate enhances interdisciplinary connections among Labor Studies, Management, International Relations, Latin American Studies, Sociology, Anthropology, Political Science, Education, Hospitality, Public Administration, Public Health, Dietetics and Nutrition, Environmental Studies, Religious Studies, and Psychology and complements studies in other areas, including the newly approved Law School.	The certificate enhances interdisciplinary connections among Labor Studies, Management, International Relations, Latin American Studies, Sociology, Anthropology, Political Science, Education, Hospitality, Public Administration, Public Health, Dietetics and Nutrition, Environmental Studies, Religious Studies, and Psychology and complements studies in other areas, including the newly approved Law School.
Certificate 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.**	Certificate 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	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

COLLEGE OF EDUCATION PROGRAM CHANGES

CHANGES TO THE CONFLICT RESOLUTION AND CONSENSUS BUILDING 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.	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 5155 Workplace Diversity LBS 5507 Labor and Employment Law LBS 5930 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 **Education** EDA 6225 Labor Relations in Education EDA 6232 School Law	Track I: Workplace Conflict Resolution (12 hours) **Labor Studies** **LBS 5155 Workplace Diversity** **LBS 5215 Women in the US Workplace** LBS 5406 Collective Bargaining and Labor Relations LBS 5464 Labor Arbitration **LBS 5486 Dynamics of Conflict Management** LBS 5465 Introduction to Mediation LBS 5507 Labor and Employment Law LBS 5930 Topics in Labor Studies **LBS 6906 Directed Individual Study** **LBS 6945 Internship in Labor Studies/Alternative Dispute Resolution** **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
EDA 7233 Education Law and Ethics EDA 7236 Law and Higher Education EDF 5851 Social Cultural Conflict EDF 6636 Inter-cultural Studies: A Qualitative and Quantitative Analysis EDS 6050 Supervision and Staff Development **Hospitality** HFT 5545 Leadership Training for Team Building HFT 6225 Multi-cultural Human Resources Management in Hospitality HFT 6226 Motivation and Leadership HFT 6246 Organizational Behavior in the Hospitality Industry **Public Administration** PAD 5043 Government and Minority Group Relations PAD 5427 Collective Bargaining in the Public Sector PAD 6028 Policy Analysis and Planning URS 6130 Human Resource Policy and Management URS 6436 Professionalism and Ethics **Public Health** PHC 6589 Health Promotion in Institutional Settings **Dietetics and Nutrition** HUN 6259 Management of Nutrition Services	**Education** EDA 6225 Labor Relations in Education EDA 6232 School Law EDA 7233 Education Law and Ethics EDA 7236 Law and Higher Education EDF 6365 Cultural Identities and Conflict **EDF 6366 Conflict Resolution: Negotiation-Based Perspectives** **EDF 6367 Interactive Conflict Resolution: Third Party Perspective** **EDH 6055 Access & Choice in Higher Education** EDS 6050 Supervision and Staff Development **Hospitality** HFT 5545 Leadership Training for Team Building HFT 6225 Multi-cultural Human Resources Management in Hospitality HFT 6226 Motivation and Leadership HFT 6246 Organizational Behavior in the Hospitality Industry **Public Administration** PAD 5043 Government and Minority Group Relations PAD 5427 Collective Bargaining in the Public Sector PAD 6028 Policy Analysis and Planning URS 6130 Human Resource Policy and Management URS 6436 Professionalism and Ethics **URS 6378 Leadership in Decision Making**

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 Historical Foundations of Education EDF 6636 Inter-cultural Studies: A Qualitative and Quantitative Analysis 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 **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 5534 Groups as Agents of Change CYP 6766 The Psychology of Cross-Cultural Sensitization in a Multi-cultural Context SOP 6752 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** REL 5149 Religion, Violence and Conflict **Sociology/Anthropology**	**Public Health** PHC 6589 Health Promotion in Institutional Settings **Dietetics and Nutrition** HUN 6259 Management of Nutrition Services
Track II: Community Conflict Resolution (12 hours) **Education** EDF 5880 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 Perspective** 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 **LBS 5486 Dynamics of Conflict Management** **LBS 6906 Directed Individual Study** **LBS 6945 Internship in Labor Studies/Alternative Dispute Resolution** **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 5534 Groups as Agents of Change CYP 6766 The Psychology of Cross-Cultural Sensitization in a Multi-cultural Context SOP 6752 Psychology of Juries **Public Health** PHC 6311 Environmental Health and Risk Assessment	

COLLEGE OF EDUCATION PROGRAM CHANGES

CHANGES TO THE CONFLICT RESOLUTION AND CONSENSUS BUILDING PROFESSIONAL CERTIFICATE PROGRAM, continued:

CONTACT: Peggy Wilson

ANT 5318 American Culture and Society ANT 6302 Gender Identity in Comparative Perspective ANT 6319 The African Diaspora SYD 6236 International Migration and Refugees SYD 6325 Seminar in Comparative Sociology of Gender SYD 6616 Comparative Stratification Seminar SYD 6625 South Florida Socio-Cultural Systems SYD 6705 Comparative Systems of Ethnicity and Race SYO 6135 Families and Social Change SYP 6907 Seminar in Comparative Social Change Track III: Global Issues and Conflict Resolution (12 hours) **Education** EDF 5880 Inter-Cultural Education: National and International Perspectives EDF 6636 Inter-cultural Studies: A Qualitative and Quantitative Analysis EDF 6658 Selected Topics in International Development Education EDG 5707 Cultural and Cross-Cultural Studies **Environmental Studies** EVR 5350 International Organizations and Environmental Politics **International Relations** INR 5xxx International Negotiations and Conflict Resolution INR 5086 Islam and International Relations INR 5087 Ethnicity and Politics of Development INR 5409 International Relation Law I INR 5507 International Organizations I INR 6089 International Relations and Human Rights **Labor Studies** LBS 5465 Introduction to Mediation LBS 5658 Labor Movements and Economic Development **Political Science** INR 5105 American Foreign Policy INR 5087 Ethnicity and the Politics of Development INR 5007 Seminar in International Politics INR 6080 Seminar on Non-State Actors INR 6705 Seminar in International Political Economy **Management** MAN 6601 International Management MAN 6615 International Labor-Management Relations MAN 6xxx Colloquium in Managing Organizational Ethics	PHC 6355 Occupational Health and Safety PHC 6356 Fundamentals of Industrial Hygiene PHC 6315 Public Health and Environmental Management **Religious Studies** REL 5149 Religion, Violence and Conflict **Sociology/Anthropology** ANT 5318 American Culture and Society ANT 6302 Gender Identity in Comparative Perspective ANT 6319 The African Diaspora SYD 6236 International Migration and Refugees SYD 6325 Seminar in Comparative Sociology of Gender SYD 6616 Comparative Stratification Seminar SYD 6625 South Florida Socio-Cultural Systems SYD 6705 Comparative Systems of Ethnicity and Race SYO 6135 Families and Social Change SYP 6907 Seminar in Comparative Social Change Track III: Global Issues and Conflict Resolution (12 hours) **Education** EDF 5880 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 Perspective** EDF 6658 Selected Topics in International Development Education EDG 5707 Cultural and Cross-Cultural Studies **Environmental Studies** EVR 5350 International Organizations and Environmental Politics **International Relations** INR 5xxx International Negotiations and Conflict Resolution **INR 5062 War, Peace & Conflict** INR 5086 Islam and International Relations **INR 5275 International Relations of Middle East** **INR 5315 Foreign Policy Making** INR 5409 International Relation Law I INR 5507 International Organizations I INR 6089 International Relations and Human Rights **INR 6107 Foreign Policy** **INR 6338 Seminar in Strategic Studies** **INR 6606 Political Psychology of International Relations**

Psychology CYP 5534 Groups as Agents of Change CYP 6766 The Psychology of Cross-cultural Sensitization in a Multi-cultural Context **Public Health** PHC 6115 International Public Health **Dietetics and Nutrition** HUN 5195 International Nutrition: Problems, Policies and Management **Religious Studies** REL 5149 Religion, Violence and Conflict **Sociology/Anthropology** ANT 6302 Gender Identity in Comparative Perspective ANT 6319 The African Diaspora SYD 5447 Sociology of International Development SYD 6236 International Migration and Refugees SYD 6325 Seminar in Comparative Sociology of Gender SYD 6616 Comparative Stratification Seminar SYD 6705 Comparative Systems of Ethnicity and Race SYP 6907 Seminar in Comparative Social Change	**Labor Studies** LBS 5465 Introduction to Mediation LBS 5658 Labor Movements and Economic Development **LBS 5486 Dynamics of Conflict Management** **LBS 6906 Directed Individual Study** **LBS 6945 Internship in Labor Studies/Alternative Dispute Resolution** **Political Science** INR 5105 American Foreign Policy INR 5087 Ethnicity and the Politics of Development INR 5007 Seminar in International Politics INR 6080 Seminar on Non-State Actors INR 6705 Seminar in International Political Economy **Management** MAN 6601 International Management MAN 6615 International Labor-Management Relations **MAN 6703 Colloquium in Managing Organizational Ethics** **Psychology** CYP 5534 Groups as Agents of Change CYP 6766 The Psychology of Cross-cultural Sensitization in a Multi-cultural Context **Public Health** PHC 6115 International Public Health **Dietetics and Nutrition** HUN 5195 International Nutrition: Problems, Policies and Management **Religious Studies** REL 5149 Religion, Violence and Conflict **Sociology/Anthropology** ANT 6302 Gender Identity in Comparative Perspective ANT 6319 The African Diaspora SYD 5447 Sociology of International Development SYD 6236 International Migration and Refugees SYD 6325 Seminar in Comparative Sociology of Gender SYD 6616 Comparative Stratification Seminar SYD 6705 Comparative Systems of Ethnicity and Race SYP 6907 Seminar in Comparative Social Change

CHANGES TO ADULT AND HUMAN RESOURCE DEVELOPMENT

05/06:21

CONTACT: Jo Gallagher

Change of Program Proposal
Changes to Required Courses
Doctor of Education in Adult Education and Human Resource Development

OLD PROGRAM REQUIRED COURSES (3 credit hours per course)	NEW PROGRAM REQUIRED COURSES (3 credit hours per course)
~~ADE 5081~~	**ADE 5386**
~~ADE 5385~~	**ADE 5387**
ADE 5383	ADE 5383
ADE 6180	ADE 6180
ADE 7772	ADE 7772
6-9 hours selected from ADE-prefixed courses*	6-9 hours selected from ADE-prefixed courses*
EDF 6472	EDF 6472
EDF 6486	EDF 6486
EDF 7403 or EDF 6475	EDF 7403 or EDF 6475

Old *FIU Graduate Catalog* Copy	New *FIU Graduate Catalog* copy
Adult Education and Human Resource Development (AE/HRD)	Adult Education and Human Resource Development (AE/HRD)
Two options are available within the doctoral program in Adult Education and Human Resource Development (AE/HRD): ~~(1) the major (code 0177) in AE/HRD, and (2) a track (code 0256) specializing in International and Intercultural Development Education.~~ Each option prepares advanced professionals to facilitate individual, organizational, and career development and advancement of adults in the nation and the world.	**The doctoral program in Adult Education and Human Resource Development (AE/HRD) prepares advanced professionals to facilitate individual, organizational, and career development and advancement of adults in the nation and the world. Participants interested in pursuing the global perspective in greater depth may select the program specialization in International and Intercultural Development Education (IIDE).**
Graduates are equipped to design and facilitate programs for adult clients, employees, volunteers, students, and associates of profit and not-profit organizations. These professionals may be engaged in program development and evaluation, planning, policy development and analysis, leadership, instruction and training, counseling and advisement, consultation, and marketing and recruitment activities designed to further the growth and development of adult learners. They may also be engaged in improving organizational functioning through educationally-related intervention strategies or working with other performance improvement consultants.	Graduates are equipped to design and facilitate programs for adult clients, employees, volunteers, students, and associates of profit and not-profit organizations. These professionals may be engaged in program development and evaluation, planning, policy development and analysis, leadership, instruction and training, counseling and advisement, consultation, and marketing and recruitment activities designed to further the growth and development of adult learners. They may also be engaged in improving organizational functioning through educationally-related intervention strategies or working with other performance improvement consultants.
	The Doctor of Education (Ed.D.) degree program in Adult Education and Human Resource Development with the specialization in International and Intercultural Development Education (IIDE) is designed (a) to serve the advanced professional development needs of individuals concerned 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 (b) to provide technical assistance, consultation, and other professional services to organizations which conduct, sponsor and/or promote adult education and human resource development programs in the context of intercultural and international areas and/or projects.
Participants in the AE/HRD doctoral program and its affiliated tracks come from diverse backgrounds: business and industry; higher education; public and proprietary schools; health and social services agencies; law enforcement and corrections; the military, government, and non-governmental agencies; religious organizations; libraries and museums; and civic and professional associations.	Participants in the AE/HRD doctoral program and its IIDE specialization come from diverse backgrounds: business and industry; higher education; public and proprietary schools; health and social services agencies; law enforcement and corrections; the military, government, and non-governmental agencies; religious organizations; libraries and museums; and civic and professional associations.
The Doctor of Education degree is conferred on the basis of high scholarship and skill in the creation and application of knowledge from theory and research findings to practical problems in adult education and/or 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.	The Doctor of Education degree is conferred on the basis of high scholarship and skill in the creation and application of knowledge from theory and research findings to practical problems in adult education and/or 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.
Additional Admission Requirements In addition to the College of Education's common minimum admission requirements, applicants must possess the following qualifications: 1. Evidence of commitment to a career in the broad field of adult education, human resource development, international and intercultural Development Education and/or Vocational-Technical Education. 2. Successful professional experience in one or more of the above fields. 3. Potential for leadership or research in the above fields. Candidates for admission to the programs will be judged not only on the basis of quantitative criteria (e.g., GRE scores and GPA, as listed elsewhere in this catalog) but also in terms of prior experience and future career goals.	**Additional Admission Requirements** In addition to the University's and the College of Education's common minimum admission requirements, applicants must possess the following qualifications: 1. Evidence of commitment to a career in the broad field of adult education, human resource development or International and Intercultural Development Education. 2. Successful professional experience in one or more of the above fields. 3. Potential for leadership or research in the above fields. Candidates for admission to the programs will be judged not only on the basis of quantitative criteria (e.g., GRE scores and GPA, as listed elsewhere in this catalog) but also in terms of prior experience and future career goals.
Adult Education and Human Resource Development ~~(code 0177)~~	**Adult Education and Human Resource Development**
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 ~~101~~ semester hours beyond the baccalaureate degree and will involve the categories of courses noted below. The list should be considered as a sample program rather than an absolute delineation of exact requirements. Actual programs of study are planned by the participants, their major professor, and their program of studies supervisory committee.	**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 96 semester hours beyond the baccalaureate degree and will involve the categories of courses noted below. The list should be considered as a sample program rather than an absolute delineation of exact requirements. Actual programs of study are planned by the participants, their major professor, and their program of studies supervisory committee.
***Adult Education and Human Resource Development Program Core* (18 - 24 hours)** The adult education and HRD core includes courses in areas such as comprehensive adult education and HRD planning, program development, instructional design, adult teaching and learning, trends and issues, strategies, and research.	***Adult Education and Human Resource Development Program Core* (18 - 24 hours)** The adult education and HRD core includes courses in areas such as comprehensive adult education and HRD planning, program development, instructional design, individual and organizational learning, trends and issues, strategies, and research in the disciplines. For students with a master's in adult education or human resource development, the minimum is 18 s[illegible]er hours. For students whose master's is not i[illegible] HRD, the minimum is 24 hours.
***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.	***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 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.	***Cognate* (3 - 18 semester hours minimum)** Electives 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. For students with a master's in AE or HRD, the minimum is 9 semester hours. For students whose master's is not in AE or

COLLEGE OF EDUCATION PROGRAM CHANGES
EDUCATIONAL DEVELOPMENT AND POLICY STUDIES

CHANGES TO ADULT AND HUMAN RESOURCE DEVELOPMENT, continued:

CONTACT: Jo Gallagher

	HRD, the minimum is 3 hours. For students electing the IIDE specialization, the minimum is 18 hours. IIDE specialization students will select courses in the cognate with the guidance of an IIDE-affiliated faculty member on their program of studies committee.
Prospectus and Dissertation (24 semester 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 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 AE/HRD doctoral program. A minimum of six credit hours of dissertation are to be undertaken each term the dissertation is being prepared. Continuous enrollment in dissertation study is required, including summer terms.	*Prospectus and Dissertation* (24 semester 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 adult education or human resource development. Participants are expected to complete the dissertation within nine years from their date of admission to the AE/HRD doctoral program. A minimum of six credit hours of dissertation are to be undertaken each term the dissertation is being prepared. Continuous enrollment in dissertation study is required, including summer terms.
~~**International and Intercultural Development Education Track (code 0266)**~~ ~~**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 (IIDE) is designed (a) to serve the advanced professional development needs of individuals concerned 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 (b) to provide technical assistance, consultation, and other professional services to organizations which conduct, sponsor and/or promote adult education and human resource development programs in the context of intercultural and international areas and/or projects.~~ ~~**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 101 semester hours beyond the baccalaureate degree and will involve the categories of courses noted below. The list should be considered as a sample program rather than an absolute delineation of exact requirements. Programs of study are planned by the participants, their major professor in IIDE, and their program of studies supervisory committee.~~ ~~***Adult Education and Human Resource Development Program Core* (16 hours)**~~ ~~The adult education and human resource development core includes courses in areas such as comprehensive adult education and HRD planning, program development, instructional design, adult teaching and learning, trends and issues, strategies, and research.~~	
~~***International and Intercultural Development Education Program Core* (18-24 hours)**~~ ~~Courses include areas such as educational systems, comparative methodology, educational development issues, intercultural/ cross cultural education, conflict theory and resolution, planning in education, educational technology transfer, knowledge and development, education organizational behavior, international organizations and NGO's, 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~~ ~~***Prospectus 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 enrollment in dissertation study is required, including summer terms.~~	

COLLEGE OF EDUCATION PROGRAM CHANGES
EDUCATIONAL DEVELOPMENT AND POLICY STUDIES

CHANGES TO MASTER OF SCIENCE IN ADULT EDUCATION:

CONTACT: Jo Gallagher

05/06:21

OLD PROGRAM REQUIRED COURSES (3 credit hours per course	NEW PROGRAM REQUIRED COURSES (3 credit hours per course)
~~ADE 5081~~	
~~ADE 5385~~	ADE 5386
ADE 6180	ADE 6180
ADE 6186	ADE 6186
	ADE 6195
ADE 6260	ADE 6260
	ADE 6360
ADE 6945	ADE 6945
EDF 5481	EDF 5481

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	**Master of Science in Adult Education**
~~The Graduate Programs in Adult Education and Human Resource Development (AE/HRD)~~ are designed for the individual who chooses to serve as ~~AE/HRD director/manager, instructional designer, teacher, instructor, trainer, counselor, and/or researcher.~~ Graduates are working in ~~AE/HRD programs in business and industry, public schools, hospitals, governmental agencies, community colleges, universities, civic associations, military~~	**The master's degree program in Adult Education (AE) is** designed for the individual who chooses to serve as **an adult programming designer or developer, teacher, instructor, trainer, counselor, director/manager, and/or researcher. Graduates are working in continuing education, adult community schools, ~~hospitals, governmental agencies, business~~ and industry, community colleges,**

COLLEGE OF EDUCATION PROGRAM CHANGES
EDUCATIONAL DEVELOPMENT AND POLICY STUDIES

CHANGES TO MASTER OF SCIENCE IN ADULT EDUCATION, continued:

ONTACT: 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 1. ~~A 3.0 GPA or higher in the last 60 hours of upper-division coursework;~~ 2. ~~A resume of professional experiences and responsibilities;~~ 3. ~~A statement of intent (encompassing career 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).~~	**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 Adult Education.**
Adult Education (AE) The program in Adult Education ~~is designed for persons interested in working in public school 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.	**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:** (~~21~~ 24): ADE ~~5081 Introduction to Adult Education and Human Resource Development 3~~ ~~ADE 5385 Adult Teaching and Learning 3~~ ~~ADE 5XXX Individual Learning and Education~~ ~~ADE 5XXX Organizational Learning and Human Resource Development~~ ADE 6180 Organizational/ Community Processes in AE/HRD 3 ADE 6186 Comprehensive Program Evaluation in AE/HRD 3 ADE 6260 Management of AE/HRD Programs 3 ADE ~~6XXX~~ Adult Teaching Methods 3 ADE 6945 Internship in AE/HRD ~~3-6~~ EDF 5481 Foundations of Educational Research 3 **Advised Electives** (~~15~~ hours minimum)	**Required Program:** (36 hours minimum) **Required Core:** (24): ADE 5386 **Individual Learning & Adult Education** 3 ADE 6180 Organizational & Community Processes 3 ADE 6186 Comprehensive Program Evaluation in AE/HRD 3 ADE 6260 Management of AE/HRD Programs 3 ADE 6360 Adult Teaching Methods 3 **ADE 6195 Perspectives on adults with Disabilities 3** ADE 6945 Internship in AE/HRD 3 EDF 5481 Foundations of Educational Research 3 **Advised Electives** (12 hours minimum)

COLLEGE OF EDUCATION PROGRAM CHANGES
EDUCATIONAL DEVELOPMENT AND POLICY STUDIES

CHANGES TO MASTER OF SCIENCE IN HUMAN RESOURCE DEVELOPMENT :

CONTACT: Jo Gallagher

05/06:21

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

OLD PROGRAM REQUIRED COURSES (3 credit hours per course)	NEW PROGRAM REQUIRED COURSES (3 credit hours per course)
~~ADE 5081~~	ADE 5386
~~ADE 5385~~	ADE 5387
ADE 5383	ADE 5383
ADE 6180	ADE 6180
ADE 6260	ADE 6260
ADE 6286	ADE 6286
ADE 6945	ADE 6945
EDF 5481	EDF 5481
Electives (12 hours minimum)	Electives (12 hours minimum)

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 MS/AEHRD)*** 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 5081 and ADE 5385 will also be deleted from the *FIU Graduate Catalog* at that time. See below for the proposed catalog copy.

Old Catalog Copy	New Catalog Copy
The ~~Graduate Programs in Adult Education and Human Resource Development (~~AE/HRD) are designed for the individual who chooses to serve as AE/HRD director/manager, instructional designer, teacher, instructor, trainer, counselor, and/or researcher. Graduates are working in AE/HRD 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.~~	**The master's degree program in Human Resource Development (HRD) is** designed for the individual who chooses to serve as HRD director/manager, instructional designer, teacher, instructor, trainer, **human performance consultant, organizational developer,** counselor, and/or researcher. Graduates are working in HRD in business and industry, public and private school systems, hospitals, governmental agencies, community colleges, universities, civic associations, military services, 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 resume of professional experiences and responsibilities;~~ 3. ~~A statement of intent (encompassing career 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).~~	**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 <u>not</u> a requirement for admission into the M.S. in Human Resource Development.**

Human Resource Development (HRD)	**Program of Study (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.	The program in Human Resource Develop 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 Introduction to Adult Education and Human Resource Development 3~~ ~~ADE 5385 Adult Teaching and Learning 3~~ ~~ADE 5XXX Individual Learning and Education~~ ~~ADE 5XXX Organizational Learning and Human Resource Development~~	**Required Program:** (36 hours minimum) **Required Core:** (24) ADE 5386 Individual Learning & Adul Education 3 ADE 5387 Organizational Learning an Human Resource Development 3

~~Human Resource Development~~			
ADE 6180	Organizational and Community Processes in AE/HRD 3	ADE 6180	Organizational and Communi Processes in AE/HRD 3
ADE 5383	Instructional Analysis and Design 3	ADE 5383	Instructional Analysis and Design 3
ADE 6286	Instructional Development and Implementation 3	ADE 6286	Instructional Development an Implementation 3
ADE 6260	Management of AE/HRD Programs 3	ADE 6260	Management of AE/HRD Programs 3
ADE 6945	Internship in AE/HRD 3	ADE 6945	Internship in AE/HRD 3
EDF 5481	Foundations of Education Research 3	EDF 5481	Foundations of Educa. Research 3
Advised Electives (12 hours minimum)		**Advised Electives** (12 hours minimum)	

COLLEGE OF HEALTH AND URBAN AFFAIRS
COMMUNICATION SCIENCES & DISORDERS

CHANGES TO MASTER OF SCIENCE IN SPEECH LANGUAGE PATHOLOGY: 05/06'21

ONTACT: 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 (8)

SPA 5132	Technological Innovations in Speech-Language-Hearing Sciences	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 5225	Fluency Disorders	3
SPA 5216	Vocal and Velopharyngeal Disorders	3
SPA 5106	Neurological Bases of Communication Disorders	3
SPA 6232	Neuromotor Communication Disorders	3
SPA6559	Augmentative/Alternative Communication	3
SPA 6565	Dysphagia	2

Language (11)

SPA 5473	Cultural & Linguistic Diversity (CLD) in Communication Disorders	3
SPA 5403	Language Learning in Preschool Children	3
SPA 5404	Language Learning in School-Aged Children	2
SPA 6410	Aphasia and Related Disorders	3

Audiology (3)

SPA 6322	Aural Habilitation and Rehabilitation	3

Clinical Practicum (12)

SPA 5500	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 practica.

Research [Thesis–6 credit] or Specialty Track [Non-Thesis–10 credits]

Students are required to select a thesis or non-thesis options 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 in one of the specialization tracks and one credit for a Master's Project (SPA 6930). 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 6930	Master's Project	1

Educational

LIN 5732	Speech Errors and Linguistic Knowledge	3
EEX 6019	Autism	3
SPS 6199	Family School Consultation and Collaboration	3

Gerontological Aspects of Communication Disorders

OTH 5613	Interdisciplinary Approach to Aging	3
DEP 6465	Psychology of Culture and Aging	3
DEP 6466	Cognitive Processes in Aging	3

Medical Speech-Language Pathology

Pediatrics

PHC 6009	AIDS Epidemiology and Control	3
PHC 6115	International Public Health	3
PHC 6530	Principles of Maternal & Child Health	3
PHC 6538	Genetic Issues in Public Health	3
SPA 6930	Master's Project	1-6
SPA 6485	Medical Speech Language Pathology	3
SPA 6486	Assessment & Intervention of Medically Complex Children	3
SPA 6481	Genetics & Communication Disorders in Pediatric 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.

Program of Study (New)

~~**Graduate Core Health Sciences Course (3)**~~

~~SPA 5571~~	~~Ethical & Legal Aspects of Health Care Professions~~	~~3~~

Core Courses in Speech Language Pathology (50 45)

Practical Courses (8 6)

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

Speech (20 15)

SPA 5401	Phonological Disorders	3
~~SPA 5225~~	~~Fluency Disorders~~	~~3~~
SPA 5216	Vocal, and Velopharyngeal and Fluency Disorders	3
SPA 5106	Neurological Bases of Communication Disorders	3
SPA 6232	Neuromotor Communication Disorders And Augmentative Communication	3
~~SPA6559~~	~~Augmentative/Alternative Communication~~	~~3~~
SPA 6565	Dysphagia	2 3

Language (11 9)

~~SPA 5473~~	~~Cultural & Linguistic Diversity (CLD) in Communication Disorders~~	~~3~~
SPA 5403	Language Learning in Preschool Children	3
SPA 5404	Language Learning in School-Aged Children	2 3
SPA 6410	Aphasia and Related Disorders	3

Audiology (3)

SPA 6322	Aural Habilitation and Rehabilitation	3

Clinical Practicum (12)

SPA 5500	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 practica.

Research [Thesis–6 credit] or ~~Specialty Track~~ *Bilingual Emphasis* [Non-Thesis–10 credits]

Students are required to select a thesis or 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 6930). ~~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 5720~~	~~Second Language Acquisition~~	~~3~~
SPA 6xxx	*Aging & Communication Disorders in a Bilingual Society*	3
SPA 6930	Master's Project	1

~~**Educational**~~

~~LIN 5732~~	~~Speech Errors and Linguistic Knowledge~~	~~3~~
~~EEX 6019~~	~~Autism~~	~~3~~
~~SPS 6199~~	~~Family School Consultation and Collaboration~~	~~3~~

~~**Gerontological Aspects of Communication Disorders**~~

~~OTH 5613~~	~~Interdisciplinary Approach to Aging~~	~~3~~
~~DEP 6465~~	~~Psychology of Culture and Aging~~	~~3~~
~~DEP 6466~~	~~Cognitive Processes in Aging~~	~~3~~

~~**Medical Speech-Language Pathology**~~

~~**Pediatrics**~~

~~PHC 6009~~	~~AIDS Epidemiology and Control~~	~~3~~
~~PHC 6115~~	~~International Public Health~~	~~3~~
~~PHC 6530~~	~~Principles of Maternal & Child Health~~	~~3~~
~~PHC 6538~~	~~Genetic Issues in Public Health~~	~~3~~
~~SPA 6930~~	~~Master's Project~~	~~1-6~~
~~SPA 6485~~	~~Medical Speech Language Pathology~~	~~3~~
~~SPA 6486~~	~~Assessment & Intervention of Medically Complex Children~~	~~3~~
~~SPA 6481~~	~~Genetics & Communication Disorders in Pediatric 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.

COLLEGE OF HEALTH AND URBAN AFFAIRS
COMMUNICATION SCIENCES & DISORDERS

CHANGES TO MASTER OF SCIENCE IN SPEECH LANGUAGE PATHOLOGY, continued:

CONTACT: Eliane 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 4030 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 practicum settings, using diagnostic and therapeutic techniques, writing behavioral objectives, procedures for report writing, and practical experience with clinician 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 4101 Anatomy and Physiology of Speech and Hearing (3). Anatomy and physiology of the speech and hearing mechanisms. Including nomenclature, 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, manner and place, distinctive features, and phonological processes. Phonetic transcription utilizing the International Phonetic Alphabet. Prerequisite: Consent of the instructor.

SPA 5106 Neurological Bases of Communication (3). The anatomical and physiological aspects of the central and peripheral nervous system as they pertain to communication acquisition and disorders. Prerequisite: Permission of Instructor.

SPA 5132 Technological Innovations in Speech-Language Hearing Sciences (2). 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 etiology, symptoms, and treatment strategies for a variety of vocal and craniofacial 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 the therapeutic principles based upon them. Prerequisite: Consent of the instructor.

SPA 5403 Language Learning in Preschool Children (3). Presentation of the linguistic 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 (2). Overview and evaluation of the language skills of preschool and school aged children including metalinguistic 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 5500 Basic Clinical Practicum (3). Supervised practice with representative speech and language problems in the school settings. Prerequisite: Consent of the instructor.

SPA 5502 Intermediate Clinical Practicum (3). Supervised practice with communication problems in outpatient settings, private practices, rehabilitation. Prerequisite: Consent of the instructor.

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

SPA 6565 Dysphagia (2). Information and training in the evaluation and treatment of swallowing disorders. Prerequisite: Consent of the instructor.

SPA 6930 Master's Project (1-6). 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 4030 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 practicum settings, using diagnostic and therapeutic techniques, writing behavioral objectives, procedures for report writing, and practical experience with clinician 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 4101 Anatomy and Physiology of Speech and Hearing (3). Anatomy and physiology of the speech and hearing mechanisms. Including nomenclature, 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, manner and place, distinctive features, and phonological processes. Phonetic transcription utilizing the International Phonetic Alphabet. Prerequisite: Consent of the instructor.

SPA 5106 Neurological Bases of Communication (3). The anatomical and physiological aspects of the central and peripheral nervous system as they pertain to communication acquisition and disorders. Prerequisite: Permission of Instructor.

~~**SPA 5132 Technological Innovations in Speech-Language Hearing Sciences (2).** 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, *and Fluency* Disorders (3). Study of etiology, symptoms, and treatment strategies for a variety of vocal, and craniofacial and fluency 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 the therapeutic principles based upon them. Prerequisite: Consent of the instructor.

SPA 5403 Language Learning in Preschool Children (3). Presentation of the linguistic 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 (2 3). Overview and evaluation of the language skills of preschool and school aged children including metalinguistic 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 5500 Basic Clinical Practicum (3). Supervised practice with representative speech and language problems in the school settings. Prerequisites: ~~Consent of the instructor.~~ *SPA 5401 Phonological Disorders, SPA 5403 Language Learning in Preschool Children, SPA 5404 Language Learning in School Age Children, SPA 5553 Differential Diagnosis of Communicative Disorders, and Consent of the instructor.*

SPA 5502 Intermediate Clinical Practicum (3). Supervised practice with communication problems in outpatient settings, private practices, rehabilitation. Prerequisite: *SPA 5500 Basic Clinical Practicum and* Consent of the instructor.

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

SPA 6565 Dysphagia (2 3). Information and training in the evaluation and treatment of swallowing disorders. Prerequisite: Consent of the instructor.

SPA 6930 Master's Project (1-6). 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.

COLLEGE OF HEALTH AND URBAN AFFAIRS
COMMUNICATION SCIENCES & DISORDERS

CHANGES TO MASTER OF SCIENCE IN SPEECH LANGUAGE PATHOLOGY, continued:

ONTACT: Eliane Ramos

SPA 6938 Topics in Speech Pathology (1-3). This course is intended to give students information about topical issues in the field of Speech Language Pathology. Prerequisite: Permission of instructor.

SPA 6971 Master's Thesis (1-6). Supervised research on an original research project submitted in partial fulfillment of the Master's degree requirement. Prerequisite: Consent of the instructor.

SPA XXXX Medical Clinical Practicum (Advanced) (3). Course will allow students the opportunity to engage in clinical practicum experiences at interdisciplinary medical settings with pediatric populations.

SPA 5571 Ethical and Legal Aspects of Health Care Professions (3). Legal and ethical issues of appropriate practice in the healthcare profession will be addressed in detail, relative to multicultural populations. Prerequisite: Consent of the instructor.

SPA 5805 Research Methodology in Communication Disorders (3). Research design, statistical analysis (descriptive and inferential) and dissemination of experimental data, with an emphasis on clinical research. Legal/ethical and cultural consideration in research design and implementation will also be addressed. Prerequisite: Consent of the instructor.

SPA 6005 Assessment & Treatment of the Bilingual Child with Communication Disorders (3). Assessment and treatment of normal and atypical language development across cultures. Prerequisite: Consent of the instructor.

SPA 6232 Neuromotor Communication Disorders (3). A study of the medical, physical, occupational, speech, language, and hearing problems of the neuromotorically impaired client. Therapy techniques are reviewed and evaluated. Prerequisite: SPA 5106 and consent of the instructor.

SPA 6322 Aural Habilitation and Rehabilitation (3). Provide information and strategies for aural habilitation intervention with hearing impaired children. Includes techniques of speech reading, auditory training and language for the hearing impaired. Prerequisite: Consent of the instructor.

SPA 6406 Bilingual Language Acquisition (3). Development of normal atypical language in speakers of other languages. Prerequisite: Consent of the instructor.

SPA 6410 Aphasia and Related Disorders (3). Consideration of the neurological and psychological aspects of aphasia and related approaches are discussed and evaluated. Prerequisite: SPA 5106 and consent of the instructor.

SPA 6481 Genetics & Communication Disorders in Pediatric Populations (3). Students will learn about the core clinical competencies in genetics that apply to the SLP profession.

SPA 6485 Medical Speech-Language Pathology (3). Provides overview of med terminology, health conditions, pharmacological effects related to Communication Disorders, assessment and intervention of Communication Disorders for pediatric and adult populations seen in the medical setting. Prerequisite: Consent of the instructor.

SPA 6486 Assessment & Intervention of Medically Complex Children (3). Course provides overview of communication disorders and related issues in children with medically complex conditions. The social, psychological, health, financial, legal and cultural aspects of children with chronic health conditions will be addressed. Prerequisite: Consent of instructor.

SPA 6505 Advanced Clinical Practicum (3). Supervised practice with severe communication problems in area hospitals and long term care facilities. Prerequisite: Consent of the instructor.

SPA 6559 Augmentative/Alternative Communication (3). Assessment and intervention strategies and technology for individuals with severe communication impairments. Prerequisite: Consent of the instructor.

SPA 6565 Dysphagia (2). Information and training in the evaluation and treatment of swallowing disorders. Prerequisite: Consent of the instructor.

SPA 6930 Master's Project (1-6). 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 6938 Topics in Speech Pathology (1-3). This course is intended to give students information about topical issues in the field of Speech Language Pathology. Prerequisite: Permission of instructor.

SPA 6971 Master's Thesis (1-6). Supervised research on an original research project submitted in partial fulfillment of the Master's degree requirement. Prerequisite: Consent of the instructor.

SPA XXXX Medical Clinical Practicum (Advanced) (3). Course will allow students the opportunity to engage in clinical practicum experiences at interdisciplinary medical settings with pediatric populations.

SPA 6938 Topics in Speech Pathology (1-3). This course is intended to give students information about topical issues in the field of Speech Language Pathology. Prerequisite: Permission of instructor.

SPA 6971 Master's Thesis (1-6). Supervised research on an original research project submitted in partial fulfillment of the Master's degree requirement. Prerequisite: Consent of the instructor.

~~**SPA XXXX Medical Clinical Practicum (Advanced) (3).** Course will allow students the opportunity to engage in clinical practicum experiences at interdisciplinary medical settings with pediatric populations.~~

~~**SPA 5571 Ethical and Legal Aspects of Health Care Professions (3).** Legal and ethical issues of appropriate practice in the healthcare profession will be addressed in detail, relative to multicultural populations. Prerequisite: Consent of the instructor.~~

SPA 5805 Research Methodology in Communication Disorders (3). Research design, statistical analysis (descriptive and inferential) and dissemination of experimental data, with an emphasis on clinical research. Legal/ethical and cultural consideration in research design and implementation will also be addressed. Prerequisite: Consent of the instructor.

SPA 6005 Assessment & Treatment of the Bilingual Child with Communication Disorders (3). Assessment and treatment of normal and atypical language development across cultures. Prerequisite: Consent of the instructor

SPA 6232 Neuromotor Communication Disorders *and Augmentative Communication* (3). A study of the medical, physical, occupational, speech, language, and hearing problems of the neuromotorically impaired client. Therapy techniques are reviewed and evaluated. *Assessment and intervention strategies and technology for individuals with severe communication impairments are also covered.* Prerequisite: SPA 5106 and consent of the instructor.

SPA 6322 Aural Habilitation and Rehabilitation (3). Provide information and strategies for aural habilitation intervention with hearing impaired children. Includes techniques of speech reading, auditory training and language for the hearing impaired. Prerequisite: Consent of the instructor.

SPA 6406 *Bilingual* Dual Language *Acquisition & Communication Disorders* (3). Development of normal *and* atypical language in speakers of *more than one* ~~other~~ language. Prerequisite: Consent of the instructor.

SPA 6410 Aphasia and Related Disorders (3). Consideration of the neurological and psychological aspects of aphasia and related approaches are discussed and evaluated. Prerequisite: SPA 5106 and consent of the instructor.

~~**SPA 6481 Genetics & Communication Disorders in Pediatric Populations (3).** Students will learn about the core clinical competencies in genetics that apply to the SLP profession.~~

~~**SPA 6485 Medical Speech-Language Pathology (3).** Provides overview of med terminology, health conditions, pharmacological effects related to Communication Disorders, assessment and intervention of Communication Disorders for pediatric and adult populations seen in the medical setting. Prerequisite: Consent of the instructor.~~

~~**SPA 6486 Assessment & Intervention of Medically Complex Children (3).** Course provides overview of communication disorders and related issues in children with medically complex conditions. The social, psychological, health, financial, legal and cultural aspects of children with chronic health conditions will be addressed. Prerequisite: Consent of instructor.~~

SPA 6505 Advanced Clinical Practicum (3). Supervised practice with severe communication problems in area hospitals and long term care facilities. Prerequisite: *SPA 5502 Intermediate Clinical Practicum and* Consent of the instructor.

~~**SPA 6559 Augmentative/Alternative Communication (3).** Assessment and intervention strategies and technology for individuals with severe communication impairments. Prerequisite: Consent of the instructor.~~

SPA 6565 Dysphagia (2 3). Information and training in the evaluation and treatment of swallowing disorders. Prerequisite: Consent of the instructor.

SPA 6930 Master's Project (1-6). 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 6938 Topics in Speech Pathology (1-3). This course is intended to give students information about topical issues in the field of Speech Language Pathology. Prerequisite: Permission of instructor.

SPA 6971 Master's Thesis (1-6). Supervised research on an original research project submitted in partial fulfillment of the Master's degree requirement. Prerequisite: Consent of the instructor.

~~**SPA XXXX Medical Clinical Practicum (Advanced) (3).** Course will allow students the opportunity to engage in clinical practicum experiences at interdisciplinary medical settings with pediatric populations.~~

SPA 6xxx Communication Disorders and aging in a Bilingual Society (3). Survey of types and characteristics of bilingualism and normal and atypical speech and language changes associated with aging.

COLLEGE OF HEALTH AND URBAN AFFAIRS
SOCIAL WORK

CHANGES TO GRADUATE CERTIFICATE IN MANAGEMENT IN SOCIAL WORK:
CONTACT: Mary Helen Hayden

05/06;21

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	New Program
All certificate students will be required to take the three required courses as well as the two from the approved list.	All certificate students will be required to take the three required courses as well as the two from the approved list.
Required Courses:	**Required Courses:**
SOW 5344 Theory & Practice with Com. & Org.	SOW 5344 Theory & Practice with Com. & Org.
URS 6654 Applied Organizational Theory & Behavior	URS 6654 Applied Organizational Theory & Behavior
SOW 5555 Writing & Managing Grants for Social Service Programs	SOW 5555 Writing & Managing Grants for Social Service Programs
Select two from the following:	**Select two from the following:**
PAD 6205 Public Financial Management	PAD 6205 Public Financial Management
PAD 5435 Administration & the Role of Women	PAD 5435 Administration & the Role of Women
HAS 6425 Mental Health Admin. & Planning	HSA 6425 Mental Health Admin. & Planning
URS 5645 Strategic Planning in Public & Non-Profit Organizations	URS 5645 Strategic Planning in Public & Non-Profit Organizations
URS 6378 Leadership & Decision Making	URS 6378 Leadership & Decision Making
	SOW 6387 Social Services Management Skills
Total credits required: 15	**Total credits required: 15**

COLLEGE OF ENGINEERING AND COMPUTING
MECHANICAL AND MATERIALS ENGINEERING

CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG
)NTACT: Arvind Agarwal

Action defer[illegible]
#05/06:2[illegible]

Mechanical and Materials Engineering

George S. Dulikravich, *Chairperson and Professor*
1 **Arvind Agarwal,** *Assistant Professor and Graduate Program Director*
2 **Wei Yu Bao,** *Coordinator of Research*
Yiding Cao, *Associate Professor*
Wonbong Choi, *Associate Professor*
M. Ali Ebadian, *Professor*
Dennis Fan, *Assistant Professor*
Gordon Hopkins, *Professor and Dean Emeritus*
W. Kinzy Jones, *Professor and Director, Advanced Materials Engineering Research Institute*
Sukky Jun, *Assistant Professor*
Cesar Levy, *Professor*
3 **Norman Munroe,** *Associate Professor and Associate Dean for Research and Associate Director of Research, Applied Research Center*
4 **Vish Prasad,** *Executive Dean and Distinguished Professor*
Diana Rincon, *Assistant Professor*
Surendra Saxena, *Professor and Director, Center for the Study of Matter at Extreme Condtions*
5 **J. Sun,** *Visiting Instructor*
Ibrahim Tansel, *Associate Professor*
Yong Xin Tao, *Associate Professor and Undergraduate Program Director*
6 **Sabri Tosunoglu,** *Associate Professor and Graduate Program Director*
Kuang-Hsi Wu, *Professor*
Hexiong Yang, *Associate Professor*

Mechanical Engineering, a major division of the engineering profession, plays a major role in our technologically advanced society. The design and manufacturing of power plants, automobiles, aircrafts, robots to improved methods of transportation and production by industrial robots, are but a few important inventions that would not have been realized without the creativity associated with the mechanical engineering profession. The mechanical engineer 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
7 [illegible] at FIU takes pride in providing well-educated and technologically competent graduates to serve these industries.

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

- Mechanical Systems
- 8 Mechanics
- Robotics and Mechatronics
- Thermo/fluid Systems
- HVAC
- Material Characterization
- Manufacturing and Automation Systems
- Materials Science and Engineering
- Multidisciplinary Design Optimization and Inverse Design
- Computational Analysis and Distributed Parallel Computing 9
- Biomechanics
- Biomedical Engineering
- Laser and Plasma Materials Processing 10
- Nanomaterials
- Nanotechnology
- Electronic Packaging
- Optical Measurement and Diagnostics
- Waste Management
- 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 this century were enabled by the development of new materials. Materials Science and Engineering is a graduate program only, with undergraduate electives offered in the Mechanical Engineering curriculum to prepare the student for graduate education in materials science and engineering. The academic program offers specialization in metallurgy, ceramics, electronic materials, nanomaterials and 11 polymers and biomaterials. There is an increasing demand for graduates in materials science and engineering, with high technology industries leading the need for graduates. In fact, many of the companies needing materials scientists and engineers did not exist 20 years ago. Because everything is made of materials and new materials, such as nanomaterials, are rapidly being 12 developed, materials science and engineering is a growth field in engineering.

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 over the range from nanomaterials to bulk properties. AMERI also houses a nanofabrication facility for device fabrication. 13

The Center for the Study of Materials under Extreme Conditions (CeSMEC): This center's research is directly geared towards the study of materials, particularly nanophase materials.

Cardiovascular Engineering Center (CVEC): This [illegible] industry, engineers and clinicians in basic and applied research specifically aimed at [illegible] technology in the design and use of biomedical devices. 14

Hemispheric Center for Environmental Technology (HCET) [illegible] Applied Research Center (ARC): ARC 15 focuses on environmental technology research and applications. The primary activity of the center is in the research of solid waste and nuclear facility decontamination and dismantlement technology.

Multidisciplinary Analysis, Inverse Design, Robust Optimization and Controls (MAIDROC) Laboratory has 16 a 96 processor parallel computer running Linux and MPI.

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 V+Q score of 1100 on the Graduate Record Examination with the following minimum scores on the individual components: verbal ≥350, and quantitative ≥650.
3. Applicants who have not satisfied the above will be evaluated for probationary or waiver admission.

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Graduate Certificate in Mechanical Engineering

The Graduate Certificate in Mechanical Engineering is open to students and engineers who hold a B.S. degree in engineering or a closely related field of study from an accredited program. The objective of this certificate is to provide a vehicle for the career enhancement of practicing engineers and serve the needs of recent B.S. graduates and graduate students in other programs. The program consists of two [illegible] areas: Design, Mechanics and Robotics area and [illegible] area reflecting the diverse nature of mechanical engineering.

Admission Requirements

The applicants for the Graduate Certificate in Mechanical Engineering must have a B.S. degree in engineering or a closely related field from an accredited program and have a GPA of at least 3.0 in the last two years of undergraduate studies, or a GPA of at least 2.5 in conjunction with significant related work experience.

COLLEGE OF ENGINEERING AND COMPUTING
MECHANICAL AND MATERIALS ENGINEERING

CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING GRADUATE PROGRAM AND CATALOG

CONTACT: Arvind Agarwal

Course Requirements

A total of 18 credit hours (6 three-credit courses) must be completed with a B or better grade to receive the Graduate Certificate in Mechanical Engineering. Two courses (6 credits) are core courses and must be taken by all students. The remaining four courses may be selected from one of two concentration areas.

Core Courses (6 credits):

EGM 5346 Computational Engineering Analysis (3)

Select one of the following two courses:

EGM 5354 Finite Element Method Applications in Mechanical Engineering (3)

EGM 6422 Advanced Computational Engineering Analysis (3)

Elective Courses (12 credits):

Select four courses (12 credits) from the (1) Design, Mechanics and Robotics area, or the (2) Thermo-Fluids Area.

(1) Design, Mechanics and Robotics Area:

EML 5385 Identification and Techniques of Mechanical Systems (3)

EML 5526 Introduction to Robotics (3)

EML 6586 Automatic Control Systems (3)

(2) Thermo-Fluids Area:

EML 5505 Intermediate Heat Transfer (3)

EML 5526 Introduction to Robotics (3)

EML 6586 Automatic Control Systems (3)

EML 5726 Computational Fluid Dynamics (3)

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 incorporated in the study plan) plus a minimum of six hours of masters thesis research. 21

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).

6. Thesis option: Successful public oral defense of the thesis. Submission of the approved thesis to the Graduate School.

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 [illegible] Graduate Seminar course. 22

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 [illegible] 23

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 6908, 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 approval cover letter from the advisor, should be given to the examining committtee for review not less than four weeks before the scheduled defense. The candidate should prepare to summarize the thesis in the manner of a

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 [illegible] 80 on the iBT TOEFL or 6.3 overall on the IELTS is required. 18

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 remedial 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 M.S 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. [illegible] the two applied computational mathematics courses offered by the department, two courses [illegible] 19

4. [illegible] undergraduate course deficiencies specified at admission, if any, with no grades below 'C' and a GPA ≥ 3.0. 20

5. Thesis option: Successfully completed a minimum of 30 semester hours of graduate course work as specified in an approved study plan containing at least 6 hours of 6000 level courses with a GPA ≥ 3.0 (the minimum successful grade is a 'C'. Not more than six semester hours transferred from another accredited graduate program that

A student shall complete a minimum of 33 semester credit hours of graduate course work, and one semester of Graduate Seminar. Non-thesis students are encouraged to do a three-credit project under the independent study course registration. An approved study plan must include at least [illegible] credits of 6000 level graduate course work, including the project if elected. Up to nine credit hours of graduate course work from other departments may be included among the minimum of 33 credits. A maximum of six graduate credits from other accredited graduate programs completed with a 'B' or better and not counted toward a previous degree may be included in the study plan. Transfer credits must meet university requirements. 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 take a final oral comprehensive exam dealing with the objectives of their study plan. If a project has been completed, the student will briefly summarize the project report (20 minutes) as a part of the exam. The examining committee will include a minimum of three faculty members, at least two of whom should be from the department.

Course Requirements

All MSME degree seeking students must take [illegible] following applied computational mathematics courses offered by MME department, the following two courses or equivalent plus the MME graduate seminar and seminar to common core courses: 25

EGM 5315	Intermediate Analysis of Mechanical Systems	3
EGM 5346	Computational Engineering Analysis	3
EGM 5354	Finite Element Method Applications in Mechanical Engineering	3
[illegible]		3
[illegible]		3
[illegible]		3
[illegible]		3
EML 6935	Graduate Seminar	0

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An additional six credit hours of [illegible] courses must be taken [illegible] 28

COLLEGE OF ENGINEERING AND COMPUTING
MECHANICAL AND MATERIALS ENGINEERING

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

~~A minimum of 9 (thesis) or 18 (non thesis) credit hours are to be taken from the following Mechanical Engineering courses. With the approval of the faculty advisor, one (non-thesis) course (3 hours) may be taken from courses offered by other departments.~~

30

Thermo/Fluid/Biomedical (Each course is 3 credits unless stated otherwise)

~~EGM 6586 Fluid Mechanics Applications in Biological Systems~~

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~~EGM 6587 Applied Biomedical & Diagnostic Measurements~~

~~EGM 6588 Solid Mechanics Applications in Biological Systems~~

EML 5103	Intermediate Thermodynamics
EML 5104	Classical Thermodynamics
EML 5152	Intermediate Heat Transfer
EML 5606C	Advanced Refrigeration & A/C Systems
EML 5615C	Computer Aided Design in A/C
EML 5708	Advanced Design of Thermal and Fluid Systems

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~~EML 5709 Intermediate Fluid Mechanics~~

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 (Each course is 3 credits unless stated otherwise)

EGM 5346	Computational Engineering Analysis
EGM 5354	Finite Element Method Appl in ME

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~~EGM 5515 Synthesis of Engineering Mechanics~~

EGM 6570	Fracture Mechanics
EMA 5295	Principles of Composite Materials
EMA 5507C	Analytical Techn. of Materials Sciences
EMA 5935	Advanced Topics in Materials Engineering
EMA 6127C	Advanced Physical & Mechanical Metallurgy
EMA 6165C	Polymer Physics & Analytical Techniques
EML 5505	Smart Machine Design and Development
EML 5509	Mechanical Design Optimization
EML 5125	Classical Dynamics
EML 5385	Identification Techniques of Mech. Systems
EML 5562	Advanced Electronic Packaging
EML 6223	Advanced Mech. Vibration Analysis
EML 6233	Fatigue and Failure Analysis
EML 6805	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

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~~EML 5510 Intermediate CAD/CAE~~

EML 5562	Advanced Electronic Packaging

35

~~EGM 5515 Synthesis of Engineering Mechanics~~

EML 5808	Control Technology for Robotic Systems
EML 5825	Sensors and Applied Machine Intelligence

~~Thermo/Fluid/Biomedical Area~~

~~EML 5708 Intermediate Fluid Mechanics~~

~~EML 6712C Intermediate Fluid Dynamics~~

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~~Mechanics/Materials Area~~

~~EGM 6570 Fracture Mechanics~~

~~EMA 5935 Topics in Materials Engineering~~

~~Design and Manufacturing Area~~

~~EML 5510 Intermediate CAD/CAE~~

~~EML 5515 Synthesis of Engineering Mechanics~~

EML 6223	Advanced Mechanical Vibration Analysis
EML 6532	Advanced CAD/CAE

~~EGM 6570 Fracture Mechanics~~

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EML 6805	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 ≥350 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 PBT or 213 CBT~~ 80 on the iBT TOEFL or 6.3 overall on the IELTS is required.

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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.

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4. Completed undergraduate course deficiencies specified at admission, if any, with no grades below 'C' and a GPA ≥ 3.0.

5. Thesis option: Successfully completed a minimum of 30 semester hours of graduate course work as specified in an approved study plan containing at least 6 hours of 6000 level courses with a GPA ≥ 3.0 (the minimum successful grade is a 'C'; not more than six semester hours transferred from another accredited graduate program that was not part of a previously awarded degree may be

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incorporated in the study plan) plus a minimum of six hours of masters thesis.

Non-thesis option: Successfully completed a minimum of 27 semester hours of graduate course work as specified in an approved study plan and a 3 credit hour project 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).

6. Thesis degree: Successful public oral defense of the thesis. Submission of the approved thesis to the Graduate School.

Non-thesis degree: Successful completion of a formal report and presentation.

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

8. Completed one semester of the Graduate Seminar course.

9. Complied 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

40

hours of EMA 6971, Master's Thesis, and the satisfactory completion of the MME Graduate Seminar.

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 6908, 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'. 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 appointed through the Graduate School consisting of a least three 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

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examining committee for review not less than [illegible] 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 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. Hardcover bound copies of the approved thesis must be provided to the advisor, department, and the library.

Non-Thesis Option

A student shall complete a minimum of 30 semester credit hours of graduate course work, and one semester of Graduate Seminar. Non-thesis students are encouraged to do a three-credit project 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 30 credits. A maximum of six graduate credits from other accredited graduate programs completed with a 'B' 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 [illegible] 42
Ceramics
Polymers and Biomaterials
[illegible] 43

Course Requirements

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

EMA 5106	Thermodynamics and Kinetics of Materials	3
EMA 5001	Physcial Properties of Materials	3
EML 6935	Graduate Seminar	0

Select two of the following courses with advisor approval:

EMA 5140	Introduction to Ceramics	3
EMA 5507C	Analytical Methods in Material Science	3
EMA 6127C	Mechanical Metallurgy	3
EMA 6165C	Polymer Science	3
EMA 6399C	Electronic Properties of Material Science	3

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.

MSMSE Elective Courses:

EEL 6332	Thin Film Engineering	3
EML 5103	Inter. Thermodynamics	3
EMA 5xxx	Surface Science	3
EMA 5295	Principles of Composite Materials	3
EGM 5354	FEM Applications in Engineering	3
EGN 5367	Industrial Materials and Engineering Design	3
EMA 6126	Adv. Physical Matellurgy	3
EML 6233	Fatigue and Failure Analysis	3
EGM 6355	Nonlinear Finite Element Analysis	3

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EML 5562 Adv. Electronic Packaging 3
EML 6908 Independent Study 1-3
44 ~~EML 6910 Supervised Research 1-6~~
EML 6971 Master Thesis 1-6
EMA 5015 Introduction to Nanomaterials Engineering 3
EMA 5104 Adv. Mechanical Properties of Materials 3
45 [redacted]

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 in Mechanical Engineering from an accredited institution are the following:

a) GPA of at least 3.0/4.0 in the last 60 upper level credit hours

46 b) GRE of at least [redacted] points on the verbal and quantitative sections with the following minimum on the individual components: verbal ≥ 450 and quantitative ≥ 650.

c) Three letters of recommendation.

d) 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
47 System (IELTS). A total score of [redacted] 80 on the iBT TOEFL or 6.3 overall on the IELTS is required.

e) Applicants having a Master's degree in Mechanical Engineering from an accredited institution must also satisfy the above requirements for admissions to the doctoral program; however a GPA of at least 3.3/4.0 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

48 Within [redacted] months upon acceptance into the Ph.D.
49 program, the student [redacted] has to identify an area of research of his or her interest by contacting and being accepted by a professor willing to
50 guide the dissertation research. [redacted] 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

51 Applicants having a Bachelor's degree in Mechanical Engineering are required to complete at least [redacted] credit hours, of which at least [redacted] hours must be course work 52
and 24 hours dissertation. The credit hours earned towards the Ph.D. program have the following requirements: 53

1. At least [redacted] credits at the 5000 level or higher, not to include dissertation.
2. At least [redacted] credits at the 6000 level or higher, not to include dissertation. 54

[redacted] 55 56 57 58

5. A minimum of 24 credits of dissertation.

A maximum of 6 semester hours of graduate credit earned from another 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.

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

[redacted] 59

[redacted] 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.

[redacted] 61

[redacted]

62 **Elective Courses:** [redacted] Possible elective courses from the Mechanical Engineering department include:

EMA 6127C Advanced Physical & Mechanical Metallurgy
EMA 6165C Polymer Physics & Analytical Techniques
EML 5505 Smart Machine Design and Development
EML 5509 Mechanical Design Optimization
EML 5125 Classical Dynamics
EML 5385 Identification Techniques of Mech. Systems
EML 5562 Advanced Electronic Packaging
EML 6223 Advanced Mech. Vibration Analysis
EML 6233 Fatigue and Failure Analysis
EML 6805 Advanced Design of Robots

Design and Manufacturing

EML 5385 Identification Techniques of Mechanical Systems
EML 5505 Smart Machine Design and Development
[redacted] 67
EML 5509 Mechanical Design Optimization
[redacted] 68
EML 5562 Advanced Electronic Packaging
EML 5808 Control Technology for Robotic Systems
EML 5825 Sensors and Applied Machine Intelligence
EML 6223 Advanced Mechanical Vibration Analysis
EML 6532 Advanced CAD/CAE
EML 6805 Advanced Design of Robots

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Thermo/Fluid

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[illegible]	[illegible]
EML 5103	Intermediate Thermodynamics
EML 5104	Classical Thermodynamics
EML 5152	Intermediate Heat Transfer
EML 5606C	Advanced Refrigeration & A/C Systems
EML 5615C	Computer Aided Design in A/C
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 Appl in ME
EGM 6570	Fracture Mechanics
EMA 5295	Principles of Composite Materials

64 [illegible]

65 [illegible]

EMA 5507C	Analytical Techn. of Materials Sciences

66 [illegible]

Stage II - Proposal Defense (Graduate Seminar)
Stage III - Comprehensive Exam (CE) which is the PhD Candidacy Examination
Stage IV - Final Defense
In the semester prior to his/her taking the QE or CE, student must declare intention to take QE or CE and must declare a major field or area of research.

I. Qualifying Exam (QE)

General written exam to test masters level knowledge.

70 A student who is admitted to the Ph.D. program with a bachelors degree must take the QE no later than the beginning of the [illegible] after admission, and a student who enters the Ph.D. program with a masters degree must take and pass the QE no later than the beginning of the [illegible] after admission. Students may petition for exceptions from the [illegible] graduate [illegible] [illegible] 71 72 [illegible]. A student who fails the QE may retake the exam once only.

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 Compre-hensive 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 failed 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 bachelor'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.

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 cognate 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 apprentice 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 [illegible] 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. 69

Ph.D. Course Breadth Requirements

Breadth criteria could be satisfied by taking 3 courses in a field/area 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.
Stage I - Qualifying Exam (QE)

Course Descriptions

Definition of Prefixes

EAS – Engineering; Aerospace
EGM – Engineering; Mechanics
EGN – Engineering; General
EMA – Engineering; Materials
EML – Engineering; Mechanical

EAS 5124 Aerodynamics and Flight Mechanics (3). Fundamentals of aerodynamics, definition of aerodynamic shapes, analysis of aerodynamic forces, airplane performance, and flight stability and control. Prerequisites: EGN 3321, EML 3126, EGN 3343.

EAS 6185 Turbulence (3). Fundamentals of turbulent flow, solutions for bounded and free turbulent flows, dynamics of turbulence, statistical description of turbulence, spectral dynamics, and stability.

EGM 5315 Intermediate Analysis of Mechanical Systems (3). First course at the graduate level in the analysis of mechanical systems. Modeling of the system and analytical and numerical methods of solution of the governing equations will be studied. Fluid and thermodynamic systems will be emphasized in this course. Prerequisites: EGM 3311 or permission of the instructor.

EGM 5346 Computational Engineering Analysis (3). Application of computational methods to mechanical engineering problems of translational, rotational, control, thermal and fluid systems employing linear/nonlinear system elements. Prerequisites: EML 2030 or CGS 2420 or CGS 2423, MAP 2302 or EGM 3311, and EML 3222, or permission of the instructor.

EGM 5354 Finite Element Method Applications in Mechanical Engineering (3). Utilize the finite element method to solve problems in heat transfer, fluid dynamics, diffusion, acoustics, vibration, and electromagnetism, as well as the coupled interaction of these phenomena. Prerequisites: EML 2030 or CGS 2420, EMA 3702, and EML 4140.

[illegible] 73

EGM 5615 Synthesis of Engineering Mechanics (3). Unified approach to the analysis of continuous media using constitutive equations, mechanical behavior of materials and their usefulness in handling failure theories and composite materials. Prerequisites: MAP 2302 or EGM 3311, and EMA 3702.

EGM 5935 Review of Topics in Mechanical Engineering (4). To prepare qualified candidates to take Mechanical Engineering PE written examination. Reviewed courses include Thermodynamics, Fluid Mechanics, Mechanics of Materials, Mechanical Design and Heat Transfer.

EGM 6355 Nonlinear Finite Element Analysis (3). Nonlinear finite element analysis. Geometric and material nonlinearities will be considered in the formulation of different finite elements. Prerequisite: Permission of the instructor.

[illegible] 74 Modeling of vibrational and dynamic systems including solution of governing equations by analytical and numerical techniques. Prerequisites: EGM 5315 or permission of the instructor.

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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 peforation applications. Prerequisites: EGN 3321 and EMA 3702.

EGM 6570 Fracture Mechanics (3). Griffith's and Irwin's fracture criteria; stress intensity factors evaluation; crack-tip plastic zone; fracture toughness measurement; crack initiation; fatigue crack growth; stress corrosion cracking. Prerequisite: EGM 5615.

75 [redacted]

76 [redacted]

77 [redacted]

78 [redacted]

79 [redacted]

EGM 6654 Advanced Theory of Elasticity (3). Modern methods of stress and strain analysis including two-dimensional problems of stress concentration, contact adhesion, friction, thermal stresses, and dynamic waves. Prerequisites: EGM 5615, EGM 6315, or permission of the instructor.

EGM 7456 Advanced Impact Dynamics (3). High velocity impact mechanics, hyper velocity impact mechanics, penetration mechanics, long rod and plate penetration mechanics, dynamic fracture, kinetic energy penetration, analytical modeling. Prerequisites: EML 6455 and permission of the instructor.

EGM 7574 Advanced Fracture Mechanics (3). Modern fracture mechanics including invariant integrals, nano-scale fracture, environmental fracture, penetration mechanics, failure waves, erosion, and fracture by electron and laser beams. Prerequisites: EGM 6570, EGM 6422.

automotive, aircraft and sporting goods industries; material and laminar properties; design of composites; failure analysis; and environmental effects. Prerequisites: EGM 5615 or permission of the instructor.

EMA 5507C Analytical Techniques of Materials Science (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: EGN 3365.

80 [redacted]

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

EMA 5646 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.

EGM 7575 Cutting Mechanics (3). Study of cutting stress, impact stress, stress and strain waves, tensile failure, shear-tension couples, responses in cutter and material, mechanics in body, fiber and molecular structures. Prerequisites: EML 6455 and permission of the instructor.

EGM 7676 Classic Topics of Nonlinear Mechanics (3). Classic topics on nonlinear mechanics, such as Theory of Plasticity of Solids, and the Theory of Jets and Cavities of Fluids. Prerequisites: EGM 5315, EGM 6422, EGM 5615, EML 5709.

EGN 5367 Industrial Materials and Engineering Design (3). Industrial materials, material selection, and engineering design process, including synthesis, analysis, optimization, and evaluation.

EMA 5001 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 on 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: EGN 3365, EGM 3311.

EMA 5016 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: EGN 3365.

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

EMA 5018 Nanoscale Modeling of Materials (3). Overview of computational nanotechnology. Modeling, simulation and design of nanomaterials. Energy minimization, molecular dynamics and advanced multiscale numerical techniques. Prerequisites: EGN 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. Prerequisite: EGM 3311 Analysis of Mechanical Systems (3).

EMA 5106 Thermodynamics and Kinetics of Materials (3). Laws of thermodynamics. Entropy and free energy. Diffusion mechanisms. Transition state theory and field effects. Phase diagrams. Nucleation in condensed phases. Crystal growth. Prerequisite: EGN 3343 Thermodynamics I.

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

EMA 5295 Principles of Composite Materials (3). The mechanical behavior of composite materials used in the

properties of ceramics. Solid electrolytes. Theory of electron transport in metallic, semiconducting and insulating ceramics. Prerequisite: EMA 5140.

EMA 6516 Crystallography and X-ray Diffraction (3). Principles of crystallography and the use of x-ray diffraction and Raman Spectroscopy to characterize crystalline solids. Prerequisite: Instructor's permission.

EMA 6518 Transmission Electron Microscopy (3). Kinematic and dynamic theories of diffraction contrast and electron interaction in materials. Diffraction analysis for structural and compositional determination. Specimen preparation techniques. Prerequisite: EMA 5507.

EMA 6665 Polymer Processing and Engineering (3). Standard and advanced processing methods, characterization of morphology, and reaction processing. An industry-based case study 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. Controller design with emphasis on hydraulic, pneumatic and electromechanical devices. Prerequisite: EML 4312.

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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: EGN 3365 and EGM 3343.

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

EMA 6127C 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: EGN 3365 or permission of the instructor.

EMA 6165C Polymer Physics and Analytical Techniques (3). Topics in polymers and the analytical techniques, including: synthesis, characterization, state of polymers, plasma processes, X-ray diffraction, scanning and transmission electron microscopy. Prerequisites: EGN 3365 or permission of the instructor.

EMA 6185 Advanced Mechanics of Composite Materials (3). Study of micromechanics and mechanical processes in microscale, including fracture, reinforcement and delamination. Prerequisite: EMA 5295.

EMA 6264 Mechanical Properties of Polymers (3). Advanced concepts of solid mechanics and mechanical behavior of polymers; stress-strain relationships, stress transformation, beam bending, elasticity, plasticity and fracture. Prerequisites: EMA 6165C or permission of instructor.

EMA 6449 Electronic Properties of Ceramic Materials (3). The defect solid state and its relation to electrical

motion, inertia tensor, momental ellipsoid. Rigid-body equations of motion, Euler's equations, force-free motion, polhade and herpolhade, theory of tops and gyroscopes. Variational principles. Hamiltonian equations of motion. Poinsote representation. Prerequisites: MAP 2302 or EGM 3311, and EGN 3321.

EML 5152 Intermediate Heat Transfer (3). Multi-dimensional heat conduction under steady and transient conditions. Heat, mass and momentum transfer. Radiation heat transfer. Gas radiation. Free and forced convection. Prerequisite: EML 4140.

EML 5385 Identification Techniques of Mechanical Systems (3). FFT, 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.

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

EML 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: EML 4312 or consent of instructor.

EML 5509 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.

EML 5519 Fault-Tolerant System Design (3). Fault tolerance in mechanical, manufacturing, computer, and aerospace systems. Basic stages of fault isolation. Fault tolerance measures, architectures, and mechanical system design methodologies. Prerequisite: EML 3500.

EML 5530 Intermediate CAD/CAE (3). Computer aided geometrical modeling of spatial mechanical systems. Design criteria and analytical approaches for planer kinematic systems will be emphasized. Prerequisites: EML 4535 or permission of the instructor.

EML 5562 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: EML 4561 or permission of the instructor.

EML 5XXX Professional Development and Leadership for Mechanical Engineers (3). Consequences of [illegible] decision making, leadership and [illegible] practices. Prerequisite: Senior [illegible]

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EML 5XXX Special Projects in Mechanical Engineering [illegible] Development (3). Mechanical [illegible] project that addresses conceptual [illegible] and optimization [illegible] Prerequisites: EML 3500 or [illegible]

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EML 5082 Advanced Nondestructive Testing and Mechanical Health Monitoring (3). Theory and application of Nondestructive Testing (NDT) and Mechanical Health Monitoring (MHM) techniques will be discussed. Automated interpretation of signals and advanced methods will be presented. Prerequisite: Permission of the instructor.

EML 5103 Intermediate Thermodynamics (3). Thermodynamic approach to processes and engines; alternative formulations and legendre transformations; maxwell relations, first and second order phase transitions. Prerequisite: EML 3101.

EML 5104 Classical Thermodynamics (3). Mathematical analysis of the laws of classical reversible and irreversible thermodynamics. Applications to mechanical, electro-magnetic, and chemical systems, under ideal and real conditions. Prerequisite: EML 3101.

EML 5125 Classical Dynamics (3). Kinematics of rigid body motion, Eulerian angles, lagrangian equations of

EML 5615C 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: EML 2030 or CGS 2420 or CGS 2423, and EML 4601.

EML 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: EML 4706.

EML 5709 Intermediate Fluid Mechanics (3). Basic concepts and scope of fluid dynamics; non-inertial reference frames. Two-dimensional potential theory. Applications to airfoils. The Navier-Stokes equations; selected exact and approximate solutions. Prerequisite: EML 3126.

EML 5748 Boundary Layer Theory (3). Advanced fluid dynamic analysis of the Navier - Stokes equation using boundary layer assumptions. Focus will be on solutions of thermal and fluid boundary layers. Prerequisite: EML 3126.

EML 5808 Control Technology for Robotic Systems (3). State-space equations of robots. Controller design based on linearization, nonlinearity cancellation, optimal control, adaptive control and other methods. Stability analysis, performance comparison. Prerequisites: EGN 3321, EML 4312 or equivalent.

EML 5825 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. Prerequisites: EML 4312 or permission of the instructor.

EML 6148 Microscale Transport Phenomena (3). Transport phenomena in small length and time scales are studied. Deviations from classical behavior are addressed. Applications include heat transfer in electronics, MEMS, and laser machining. Prerequisites: EML 5152, EML 5709, or permission of the instructor.

EML 6153C Advanced Heat Transfer (3). Review of analogies among heat, mass and momentum transfer. Free and forced convection from theoretical and experimental viewpoint for laminar and turbulent flows. Film and dropwise condensation. Prerequisite: EML 5152.

EML 6154 Conduction 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: EML 4140.

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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. Prerequisites: EML 3101 and EML 4140.

EML 5606C Advanced Refrigeration and Air Conditioning Systems (3). The various methods used in the thermal 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.

EML 6155 Convection 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 effecting different systems will be studied, analytically or numerically. Prerequisite: EML 4140.

EML 6223 Advanced Mechanical Vibration Analysis (3). Multidegree of freedom systems, discrete and continuous systems; vibration control and introduction to vibration of non-linear systems. Prerequisite: EML 4220.

EML 6233 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 5615.

EML 6518 Advanced Modeling in Mechanical Engineering (3). Basic principles of mathematical modeling following a variety of problems in mechanical engineering. Prerequisites: EGM 6422 and EGM 5615.

EML 6532 Advanced Computer-Aided Design/ Computer-Aided Engineering (3). Advanced CAD techniques in design of mechanical systems. Architecture of CAD systems including database applications. Advanced computational geometry student programming. Prerequisite: EML 5530.

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

EML 6712C Advanced Fluid Mechanics I (3). Turbulent flows with emphasis on engineering methods. Momentum, energy, and species transfer. Production, dissipation, and scaling laws for turbulence. Mixing length, effective viscosity. Prerequisite: EML 5709.

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/addition. Prerequisite: EML 4711.

EML 6725 Computational Fluid Dynamics (3). Basic computational methods for incompressible and compressible flows. Methods for solving the stream function 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 5709.

EML 6750 Multiphase Suspension Flow (3). Definition of multiphase flow, experimental observation, 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 3262, 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 6910 Supervised Research (1-6). Graduate level research carried out under the supervision of a faculty member.

EML 6935 Graduate Seminar (0). Different problems in Mechanical Engineering and results of ongoing research will be presented and discussed by invited experts. The seminar will expose the students to advances in existing and emerging areas of research. Prerequisite: Graduate standing.

EML 6946 Mechanical and Materials Engineering Internship (1). Graduate students gain work experience through supervised internship in industry. The student prepares internship program proposal, and the work performed is documented in a report and presented. Prerequisite: Permission of the student's thesis advisor.

EML 6971 Masters Thesis (1-6). Masters thesis in any advanced topic, a report is to be submitted and an oral presentation is to be made. Students may register for one to six credits per semester. Total of six credits to be earned for the Master's Degree. Prerequisite: Advisor's permission.

EML 7728 Mechanics of Vortex and Separated Flows (3). Prediction of drag and lift forces acting upon a body moving in fluid or gas for large Reynolds' numbers using numerical experiments with vortex and/or separ-ated flows. Prerequisites: EML 6712, EGM 6422, and EML 6714.

EML 7837 Boundary Value Problems in Engineering (3). Analytical methods and skills for closed-form solutions of boundary value problem of mathematical physics and mechanics for engineering applications based on Riemann theory. Prerequisites: MAP 5407, MAA 4402, or permission of the instructor.

EML 7939 Ph.D. Seminar (0). Various subjects in Mechanical Engineering and results of ongoing research will be presented and discussed by invited experts. The seminar will expose the students to advnace in existing and emerging areas of research. Prerequisite: Ph.D. students only.

EML 7979 Dissertation (3-12). Doctoral research leading to Ph.D. Mechanical engineering dissertation. Prerequisites: Permission of Major Professor and Doctoral Candidacy.

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

CHANGES IN THE FORENSIC SCIENCE TRACK OF THE PH.D. IN CHEMISTRY:

CONTACT: David Chatfield

05/06'21

Justification: A summary of the proposed changes to the Ph.D. in chemistry with a forensic track is included in the cover form. Changes are underlined. In the old catalog, admissions requirements for the forensic track were listed separately from those for the other graduate programs in chemistry. These have been eliminated in the new catalog, as all admissions requirements are given together at the beginning of the catalog entry. The format of the course list for the forensic track has been changed to be consistent with other portions of the chemistry graduate catalog entry. In particular, formal courses such as thesis research are described but not broken out in a list. Also note that the formal courses such as CHS 7910 Forensic Dissertation Research in the old catalog are now CHM courses, as the CHS courses do not exist.

Doctor of Philosophy in Chemistry with a Forensic Science Track

To be admitted into the Ph.D. program in Chemistry with a Forensic track, a candidate must:

1. Hold a Bachelor's degree in chemistry, forensic science or a relevant discipline from an accredited college or university approved by the Chemistry graduate committee. The minimum requirement is a bachelors degree in a natural science with a least 7 semester courses (28 hours including labs) of chemistry courses including physical chemistry, analytical chemistry and biochemistry. Any deficiencies must be completed before being fully accepted to the Ph.D. program;
2. Have a 3.0/4.0 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;
4. Arrange to have three letters of recommendation sent to the Forensic Science Graduate Program Director evaluating the applicant's potential for graduate work;
5. Pass at least two proficiency exams in either analytical or biochemistry and either organic or physical chemistry -- students who have not taken physical chemistry must take one semester of physical chemistry to make up the deficiency;
6. Recieve approval from the Forensic Science Graduate Committee*;
7. Foreign students whose native language is not English 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 committee and signed off by the chemistry graduate program director.

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 maximum of 36 credits may be transferred from another completed graduate program with approval of the Chemistry committee; however, only six credits can be used to substitute for the courses identified as required by the two concentrations. Students must choose either the Analytical or the Biochemistry concentration and follow the following curricula:

Analytical Chemistry/Trace Concentration		
BSC 5406	Forensic Biology	3
CHS 5542	Forensic Chemistry	3
CHS 5539	Forensic Toxicology	3
CHS 5545	Chem Anl. Explosives	3
	or	
CHS 5538	Chem Anl of Drugs	3
At least 2 core CHM courses[1]		6
Elective[2]		3
CHS 7981	Forensic Dissertation Proposal	1
CHS 7982	Forensic Dissertation Defense	1
CHS 7910	Forensic Dissertation Research (min)	8
CHS 7980	Forensic Dissertation (min)	24
CHS 6935	Forensic Colloquium (min)	2
Biochemistry/DNA Analysis Concentration		
BSC 5406	Forensic Biology	3
CHS 5542	Forensic Chemistry	3
CHS 5536	Forensic DNA Chemistry	3
PCB 5685	Population Genetics	3
At least 2 core CHM courses[1]		6
Elective[2]		3
CHS 7981	Forensic Dissertation Proposal	1
CHS 7982	Forensic Dissertation Defense	1
CHS 7910	Forensic Dissertation Research (min)	8
CHS 7980	Forensic Dissertation (min)	24
CHS 6935	Forensic Colloquium (min)	2

[1] At least 2 core graduate-level courses (excluding research and seminar) chosen from the following list or approved by the Chemistry Graduate Program Director. Approved courses: CHM 5156 Advanced Chromatography; CHM 5138 Advanced Mass Spectrometry; CHM 5236 Spectroscopic Techniques; CHM 5302 Organic Chem of Nucleic Acids; CHM 5506 Physical Biochemistry; CHM 6157 Advanced Analytical Chemistry; CHM 5165 Chemometrics & Sampling; CHM 6982 Adv Biological Chemistry.

[2] Or courses selected from the list of electives courses approved by the forensic and chemistry graduate committees and maintained by the Chemistry Graduate Program Director.

Advancement to Candidacy

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

Graduation Requirements

The candidates must submit and make a public presentation and defense of a satifactory research dissertation by the dissertation committee.

Doctor of Philosophy in Chemistry with a Forensic Science Track

Degree Requirements

1. A minimum of 81 credits or 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. Students must choose either the Analytical or the Biochemistry concentration. The course of study must include:
   a) Twelve credits of required classes that depend on the concentration (each of the following courses is worth three credits):

Analytical Chemistry/Trace Concentration	
BSC 5406	Forensic Biology
CHS 5542	Forensic Chemistry
CHS 5539	Forensic Toxicology
CHS 5545	Chemical Analysis of Explosives
	or
CHS 5538	Chemical Analysis of Drugs
Biochemistry/DNA Analysis Concentration	
BSC 5406	Forensic Biology
CHS 5542	Forensic Chemistry
CHS 5536	Forensic DNA Chemistry
PCB 5685	Population Genetics

   b) Two chemistry core courses chosen from the following list: Advanced Chromatography (CHM 5156); Advanced Mass Spectrometry (CHM 5138); Spectroscopic Techniques (CHM 5236); Chemistry of Nucleic Acids (CHM 5302); Physical Biochemistry (CHM 5506); Advanced Analytical Chemistry (CHM 6157); Chemometrics & Sampling (CHM 5165); Advanced Biological Chemistry (CHM 6982).
   c) At least one elective. The list of approved electives is maintained by the Chemistry and Forensic Graduate Committees.
   d) Full-time graduate students are required to register for one credit of CHM 6940 (Supervised Teaching) each semester they serve as teaching assistants.
   e) Full-time graduate students are required to register for one credit of CHM 6935 (Graduate Seminar) or one credit of CHM 6936 (Chemistry Colloquium) each fall and spring semester.
   f) At least one credit of CHM 6936 (Chemistry Colloquium) is required. Each student must present a seminar on their proposed research at the colloquium for a letter grade by the end of their third semester of graduate study.
   g) At least eight credits of CHM 7910 (Dissertation Research) involving independent dissertation research under the direction of a faculty member in the Department
   h) At least 20 credits of CHM 7980 (Dissertation) is to be taken after the student has advanced to candidacy.
2. Successful completion (grade of "pass") of a comprehensive exam 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, passing the comprehensive exam, and completing all required course work, the student advances to candidacy.
4. Satisfactory public presentation and defense of a research dissertation, evaluated by the Dissertation Committee. The composition of the Dissertation Committee is as described in section 4 for the Ph.D. in Chemistry (no track) above.

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

CHANGES IN THE MS IN CHEMISTRY:

ONTACT: David Chatfield

05/06:21

Justification: A summary of the proposed changes to the M.S. in chemistry program is included in the cover form. Changes are underlined.

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, Bio-chemistry, Inorganic, Organic, and Physical) as listed below:

Analytical
CHM 5156 Advanced Chromatography
CHM 6157 Advanced Analytical Chemistry
Biochemistry
CHM 5506 Physical Biochemistry
Inorganic
CHM 5440 Kinetics and Catalysis
CHM 5540 Group Theory in Chemistry
CHM 5650 Physical Inorganic Chemistry
Organic
CHM 5250 Organic Synthesis
CHM 5236 Spectroscopic Techniques and Structure Elucidation
CHM 5260 Physical Organic Chemistry
Physical
CHM 5490 Physical Spectroscopy
CHM 5540 Group Theory in Chemistry
CHM 6430 Advanced Thermodynamics
CHM 6461 Statistical Thermodynamics
CHM 6480 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 9 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 5000 or 6000 level chemistry courses (CHM prefixes) 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 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 6936 (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, and a cumulative grade point average of 3.0 or higher must be maintained. The course work must include:
   a) At least nine credits of chemistry in at least two of the five major areas of chemistry (Analytical, Bio-chemistry, Inorganic, Organic, and Physical) from the core courses listed below:

Core Courses (three credits each)
Analytical
CHM 5138 Advanced Mass Spectrometry
CHM 5156 Advanced Chromatography
CHM 5165 Chemometrics and Sampling
CHM 6157 Advanced Analytical Chemistry
Biochemistry
CHM 5325 Physical Chemistry of Proteins
CHM 5503 Physical Chemistry of Nucleic Acids
CHM 5506 Physical Biochemistry
Inorganic
CHM 5251 Organometallic Chemistry
CHM 5440 Kinetics and Catalysis
CHM 5540 Group Theory in Chemistry
CHM 5650 Physical Inorganic Chemistry
Organic
CHM 5236 Spectroscopic Techniques and Structure Elucidation
CHM 5250 Organic Synthesis
CHM 5260 Physical Organic Chemistry
Physical
CHM 5423 Atmospheric Chemistry
CHM 5490 Physical Spectroscopy
CHM 5540 Group Theory in Chemistry
CHM 5586 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 5150, CHM 5225, CHM 6305, CHM 5425, and CHM 5426); and courses corresponding to research, seminar, colloquium, supervised teaching, and thesis completion (CHM 6910L, 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 6936 (Chemistry Colloquium) each fall and spring semester.
   e) At least one credit of CHM 6936 (Chemistry Colloquium) is required. Each student must present a seminar on their proposed research at the colloquium for a letter grade in their second semester of graduate study.
   f) At least eight 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 research thesis, 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 tenured in the Department. The Committee may include more members, but they will be non-voting.

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

CHANGES IN THE PH.D IN CHEMISTRY:
CONTACT: David Chatfield

05/06/21

Justification: A summary of the proposed changes to the Ph.D. in chemistry program is included in the cover form. Changes are underlined. The core course list has been removed from the new catalog, as it is given in the M.S. program description. The last section of the old catalog, on credit transfer and financial aid, is deleted because it now follows Admissions (included in other file).

Doctor of Philosophy in Chemistry

The requirements for completion of the Doctor of Philosophy degree in chemistry are:

1. A minimum of ninety (90) credits of course work. A grade of "C" or higher must be obtained in all courses with a cumulative GPA of 3.0 or higher. The courses must include:

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

Analytical	
CHM 5156	Advanced Chromatography
CHM 6157	Advanced Analytical Chemistry
Biochemistry	
CHM 5506	Physical Biochemistry
Inorganic	
CHM 5440	Kinetics and Catalysis
CHM 5650	Physical Inorganic Chemistry
Organic	
CHM 5250	Organic Synthesis
CHM 5236	Spectroscopic Techniques & Structure Elucidation
CHM 5260	Physical Organic Chemistry
Physical	
CHM 5490	Physical Spectroscopy
CHM 6430	Advanced Thermodynamics
CHM 6461	Statistical Thermodynamics
CHM 6480	Quantum Mechanics
CHM 5423	Atmospheric 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 5000 or 6000 level chemistry courses (CHM prefixes) or approved cognates (up to a maximum of six credits) and
(2) The following courses cannot count towards the eighteen credits (a) and (b): 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 6936 (Chemistry Colloquium) each fall and spring semester.

e) At least two credits of CHM 6936 (Chemistry Colloquium) is required. Each student must give a seminar at the colloquium for a letter grade in his/her second and fifth 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 proficiency 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 orginal research proposal and completion of a 'PreOral' examination before the end of the fourth semester (excluding summers). The examination will be conducted by the dissertation committee and is based on the student's doctoral research and includes questions from the student's major field as well as minor and cognate fields.

4. Submission and public presentation and defense of a satisfactory research disseration as determined by the dissertation committee.

Doctor of Philosophy in Chemistry

Degree Requirements

1. A minimum of 81 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) selected from the core courses listed above (see M.S. in Chemistry 1a).

b) At least nine credits of additional graduate-level chemistry courses approved by the dissertation committee in consultation with ~~the Graduate Program Director~~. The guidelines listed above in sections 1b(1) and 1b(2) for the M.S. degree also apply to these courses.

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 6936 (Chemistry Colloquium) each fall and spring semester.

e) At least one credit of CHM 6936 (Chemistry Colloquium) is required. Each student must present a seminar on their proposed research at the colloquium for a letter grade by the end of their third semester of graduate study.

f) At least eight credits of CHM 7910 (Dissertation Research) involving independent dissertation research under the direction of a faculty member in the Department is required.

g) At least 20 credits of CHM 7980 (Dissertation) is to be taken after the student has advanced to candidacy.

2. Satisfactory completion of cumulative examinations. The student will begin taking the cumulative examinations after completing the proficiency requirements but not later than the beginning of the student's second semester. Six examinations, each lasting three hours, will be given per year. The student must pass four out of ten consecutively-offered exams for admission to candidacy.

3. (a) Satisfactory presentation and defense of an original research proposal (on a topic not related to the student's specific doctoral research project) and (b) satisfactory completion of a Preliminary Oral examination. The presentation and examination occur consecutively in a single session and must be completed 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.

4. Satisfactory public presentation and defense of a research disseration, evaluated by the Dissertation Committee. The student's Dissertation Committee will consist of the research advisor, a member from outside the Department, a randomly-assigned member appointed by the Graduate Program Director from the Department's graduate faculty, and at least two additional committee members with expertise in the student's research area. At least three members of the Dissertation Committee, including the major research advisor, must be from the Department of Chemistry and Biochemistry, and at least two of these three members must be tenured. The Committee 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 their Ph.D. degree, however only 6 of those credits will count to fulfill requirement (1) (formal course work requirement). Students may transfer more than 6 course work credits with special permission of the graduate committee. 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 date course work was completed, and the area of Ph.D. concentration 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 departmental research faculty, and at least two additional committee members who have some expertise in the graduate student's research area. At least two members of the student's Ph.D. dissertation committee must be tenured in the Department of Chemistry. FIU courtesy professors may serve as research supervisors and co-major professors on a student's dissertation committee. It is expected that a meaningful collaboration will be established between courtesy faculty serving as co-major professors and the major professor from within the department. The degree of collaboration and expectations including co-authorship on publications resulting from such collaborations must be agreed upon in the semester in which a graduate student chooses an advisor(s).

Financial Support

Full-time graduate students who are in good academic standing are eligible for financial support. Teaching and research assistantships are available on a competitive basis. Students may also apply for a waiver of both in-state and out-of-state tuition. Inquiries concerning application to the program and availability of financial support should be directed to the Chemistry Graduate Director.

SCHOOL OF ARCHITECTURE
UNDERGRADUATE PROGRAM CHANGES

BACHELOR OF ARTS IN ARCHITECTURE:

CONTACT: Adam Drisin

05/06 ; 21

OLD	
Lower Division Common Core (34)	
ARC 1131 Design Graphics 1	3
ARC 1132 Design Graphics II	3
ARC 1301 Design Studio 1	4
ARC 1302 Design Studio 2	4
ARC 1461 Mat & Meth of Des	3
ARC 2303 Design Studio 3	4
ARC 2304 Design Studio 4	4
ARC 2580 Structures and Systems	3
ARC 2701 History of Design-Ant. to the Middle Ages	3
ARC 2702 History of Design from Ren. to the XIX Century	3
Upper Division Program (47)	
ARC 3243 Design Theories	3
ARC 3463 Methods and Materials of Construction II	3
ARC 4058 Computer Applications in Architecture	3
ARC 4270 Professional Office Prac	3
ARC 4324 Architectural Design 5	4
ARC 4335 Architectural Design 6	4
ARC 4342 Architectural Design 7	4
ARC 4343 Architectural Design 8	4
ARC 4553 Structural Design	4
ARC 4783 Hist of Design from the XIX Cent to Present	3
ARC 4910 Research Methods	3
History or Theory Elective	3
BCN 4561C Environ Controls	3
BCN 4564 Environ Controls 2	3
Upper Division Electives	12

NEW	
University Core requirements (35)	
Lower Division Common Core (31)	
ARC 1001 Design Fundamentals	3
ARC 1131 Design Graphics 1	3
ARC 1132 Design Graphics 2	3
ARC 1301 Design Studio 1	4
ARC 1302 Design Studio 2	4
ARC 2303 Design Studio 3	4
ARC 2304 Design Studio 4	4
ARC 2701 History of Design from Ant. to the Middle Ages	3
ARC 2702 History of Design Ren-Middle Ages	3
Total Lower Division	**66**
Upper Division Program (62)	
ARC 3243 Design Theories	3
ARC 3461 Methods and Materials of Construction 1	3
ARC 3463 Methods and Materials of Construction 2	3
ARC 3580 Structures and Systems	3
ARC 4058 Computer Applications in Architecture	3
ARC 4324 Architectural Design 5	4
ARC 4335 Architectural Design 6	4
ARC 4342 Architectural Design 7	4
ARC 4343 Architectural Design 8	4
ARC 4553 Structural Design	4
ARC 4783 Hist of Design from the XIX Cent to Present	3
History or Theory Elective	3
BCN 4561C Environ Controls	3
BCN 4564 Environ Controls 2	3
HUM 4393 (Human Concerns), or PHI 3601 (Ethics), or PHI 3638 (Contemp. Ethical Issues)	3
Upper Division Electives	12
Total Upper Division Credit Hours	**62**

SCHOOL OF ARCHITECTURE
UNDERGRADUATE PROGRAM CHANGES

BACHELOR OF ARTS IN ARCHITECTURE, continued:
CONTACT: Adam Drisin

Old Curriculum			New Curriculum		
Fall First Year		**14Cr**	**Fall First Year**		**14Cr**
ARC 1301	Design Studio 1	4Cr	ARC 1301	Architectural Design 1	4Cr
ARC 1131	Design Graphics	3	ARC 1131	Design Graphics	3
ARC 2701	Univ. Core Hist Des. Antiqu. To Middle Ages	3	ARC 2701	Univ. Core Hist Des. Antiqu. To Middle Ages	3
SLS 1501	Univ. Core Freshman Exper.	1	SLS 1501	Univ. Core Freshman Exper.	1
ENC 1101	Univ Core Freshman Comp.	3	ENC 1101	Univ. Core Freshman Comp.	3
Spring First Year		**13Cr**	**Spring First year**		**13Cr**
ARC 1302	Design Studio 2	4Cr	ARC 1302	Architectural Design	4Cr
ARC 1132	Design Graphics 2	3	ARC 1132	Design Graphics 2	3
~~ARC 2702~~	~~Hist. of Des.Ren. to 1840~~	~~3~~	ARC 2702	Hist of Des Ren to 1840	3
ENC 1102	Univ. Core Literary Analysis	3	ARC 1001	Design Fundamentals	3
Summer First Year		**9Cr**	**Summer First Year**		**12Cr**
MAC 2147	Univ. Core Quant Reasoning	3Cr	MAC 2147	Univ. Core Quant. Reasoning	3Cr
XXX XXX	Univ. Core Art Requ.	3	ENC 1101	Univ. Core Literary Analysis	3
			XXX	Univ. Core Phys. Sci. Requ.	5
			XXX	Univ. Core Phys. Sci. Lab	1
Fall Second Year		**15Cr**	**Fall Second Year**		**13Cr**
ARC 2303	Design Studio 3	4Cr	ARC 2303	Design Studio 3	4Cr
~~ARC 1461~~	~~Methods & Materials of Des.~~	~~3~~	ARC 3461 (course number change)	Methods & Materials of Des.	3
ARC 4783	Hist of Des. 1840 – present	3	ARC 4783	Hist. of Des. 1840 – Present	3
PHY 2053	Physics w/o Calculus	5	~~ARC 4161~~	~~Comp. App. in Design~~	~~3~~
Phy 2048L	Physics Lab	1			
Spring Second Year		**13Cr**	**Spring Second Year**		**13Cr**
ARC 2304	Design Studio 4	4Cr	ARC 2304	Design Studio 4	4Cr
~~ARC 2580~~	~~Structures & Systems~~	~~3~~	ARC 3580 (course number change)	Structures & Systems	3
XXX	Humanities w/ Writing	3	XXX	Univ. Core Hum. w/ Writing	3
XXX	Univ Core Fndtn of Soc. Inqu.	3	XXX	Univ. Core Fndtn. Soc. Inqu	3
Summer Second Year		**10Cr**	**Summer Second Year**		**13Cr**
XXX	Univ. Core Life Science	3Cr	XXX	Univ. Core Life Sci (natural)	3Cr
XXX	Univ. Core Life Science Lab	1	XXX	Univ. Core Life Sci Lab	1
XXX	Univ. Core Social Inquiry	3	XXX	Univ. Core Social Inquiry	3
XXX	Univ. Core Quant. Reasoning	3	XXX	Univ. Core Quant. Reasoning	3
			XXX	UNiv. Core Art Requ.	3
Fall Third Year		**13Cr**	**Fall Third Year**		**13Cr**
ARC 4324	Architectural Design 5	4Cr	ARC 4343	Design Studio 5	4Cr
ARC 3243	Design Theories	3	ARC 3243	Design Theories	3
BCN 4561	Envir. Controls in Bldgs 1	3	BCN 4561	Environ. Controls in Bldgs. 1	3
~~ARC 44910~~	~~Research Methods~~	~~3~~	ARH XXX	3/400 level ARH Elect.	3
Spring Third Year		**14Cr**	**Spring Third Year**		**14Cr**
~~ARC 4335~~	~~Architectural Design 6~~	~~4Cr~~	~~ARC 4343~~	~~Architectural Design 6~~	~~4Cr~~
ARC 4553	Structural Design	4	ARC 4553	Structural Design	4
~~ARC 4552~~	~~Comp applications in Design~~	~~3~~	ARC XXX	Hist / Theory Elective	3
ARC 3463	Methods & Materials 2	3	ARC 3463	Methods & Materials 2	3
Summer Third Year		**6Cr**	**Summer Third Year**		**0Cr**
ARC XXX	ARC Elective (Hist. / Theory)	3Cr	None		
ARC XXX	ARC Elective	3			
Fall Fourth Year		**13**	**Fall Fourth Year**		**13Cr**
			Study Abroad (13 Cr) or		
ARC 4342	Architectural Design 7	4Cr	ARC 4342	Architectural Design 7	4Cr
BCN 4564	Envir. Controls in Bldgs 2	3	BCN 4564	Envir. Controls in Bldgs 2	3
~~ARC 4270~~	~~Professional Office Practice~~	~~3~~	PHI/HUM	Ethics requirement	3
XXX	ARC Elective	3	(new requ'd course - Hum4561, Hum4393. Phi3801, Phi3638, Phi3640		
			ARC XXX	ARC Elective	3
		10Cr	**... Year**		**10Cr**
				Architectural Design 8	4Cr
ARC XXX	ARC Elective	3	ARC XXX	ARC Elective (technology)	3
ARC XXX	ARC Elective	3	ARC XXX	ARC Elective	3
Old Curriculum Total Credits		**128**	**New Curriculum Total Credits**		**128**

COLLEGE OF ARTS & SCIENCES
UNDERGRADUATE PROGRAM CHANGES

CHANGES TO THE BIOLOGY MAJOR:
CONTACT: Case Okubo

05/06:21

Change in the B.S. in Biology

[page 100]

Old Description
(changes indicated by strikeout)

Bachelor of Science in Biology

Upper Division Program

Required Courses

1. PCB 3043	Ecology	3
2. PCB 3063	Genetics	3
3. ~~PCB 3033~~	~~General Biochemistry~~	4
4. PCB 4674	Evolution	3
5. BSC 4931	Undergraduate Seminar	1
6. 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]	(Labs)	4
9. Electives outside major		9

10. A minimum of 48 credits must be earned in Upper Division courses.

New Description
(changes indicated by underscore)

Bachelor of Science in Biology

Upper Division Program

Required Courses

1. PCB 3043	Ecology	3
2. PCB 3063	Genetics	3
3. PCB 4023	Cell Biology	4
4. PCB 4674	Evolution	3
5. BSC 4931	Undergraduate Seminar	1
6. Distribution Requirement		

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]	(Labs)	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

05/06:21

Change in the B.S. in Marine Biology

[page 101]

Old description
(changes indicated by strikeout)

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
~~BCH 3033~~	~~General Biochemistry~~	4
OCB 3043	Marine Biology and Oceanography	3
BSC 4931	Undergraduate Seminar	1

New description
(changes indicated by underscore)

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

COLLEGE OF ARTS & SCIENCES
UNDERGRADUATE PROGRAM CHANGES

CHANGES TO THE BS IN ENVIRONMENTAL STUDIES

05/06'21

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]
or
Environmental Politics (PUP 4203) [3]
Earth Ethics (REL 3492) [3]
Ecology + Lab (PCB 3043 + L) [4]
Quantitative Analysis + Lab (CHM 3120 + L) [5]
Environmental Studies Seminar (EVR 4920) [1]
Independent Study (EVR 4905) [2]

Three of the following four courses:
Ecology of Biotic 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.

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]
or
Environmental Politics (PUP 4203) [3]
Earth Ethics (REL 3492) [3]
Ecology + Lab (PCB 3043 + L) [4]
Quantitative Analysis + Lab (CHM 3120 + L) [5]
Or
EVR 4323 Restoration Ecology + EVR 4XXXL Restoration Ecology Lab
Environmental Studies Seminar (EVR 4920) [1]
Independent Study (EVR 4905) [2]

Three of the following four courses:
Ecology of Biotic 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

05/06'21

CONTACT: Laird Kramer

Current Description
(changes indicated by ~~strikeout~~)

Bachelor of Science
Degree Program Hours: 120

This program prepares students for careers as professional physicists in industry, government, or graduate study in physics, engineering, or material science. ~~It also prepares students for teaching careers.~~ Students interested in teacher certification should contact the College of Education.

Lower Division Preparation

Required Courses
Common 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, 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 (60)

PHY 3106, PHY 3107	Modern Physics	6
PHY 3106L, PHY 3107L	Modern Physics Labs	2
PHY 3513	Thermodynamics	3
PHY 4221, PHY 4222	Mechanics	6
PHY 4323, PHY 4324	Electromagnetism	6
PHY 4604, PHY 4605	Quantum Mechanics	6
PHY 4810L	Senior Physics Lab	3
PHY 4905, 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)		~~16~~

Proposed Description
(changes indicated by underline)

Bachelor of Science
Degree Program Hours: 120

This program prepares students for careers as professional physicists in industry, government, or graduate study in physics, engineering, or material science. It also prepares students for teaching careers. Students interested in teacher certification should contact the College of Education.
Example course of study schedules can be found on the department's web page: http://physics.fiu.edu.

Lower Division Preparation

Required Courses
Common 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, FIU 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 (2):
PHY 1XXX First-Year Physics Seminar (To be taken both in Fall and Spring Terms)

Upper Division Program (60)

PHY 3106, PHY 3107	Modern Physics	6
PHY 3106L, PHY 3107L	Modern Physics Labs	2
PHY 3XXX	Methods in Theoretical Physics	3
PHY 3513	Thermodynamics	3
PHY 4221, PHY 4222	Mechanics	6
PHY 4323, PHY 4324	[illegible]	6
PHY 4604, PHY 4605	Quantum Mechanics	6
PHY 4810L	Senior Physics Lab	3
PHY 4905, 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)		13

COLLEGE OF ARTS & SCIENCES
UNDERGRADUATE PROGRAM CHANGES

CHANGES TO THE PSYCHOLOGY MAJOR: 05/06:21

CONTACT: Leslie Frazier

EXISTING CATALOG TEXT	PROPOSED CATALOG TEXT
Bachelor of Arts **Degree Program Hours: 120** **Lower Division Preparation** **Common Prerequisites** BSC 2023 Human Biology PSY 2020 Introduction to Psychology DEP 2000 Human Growth and Development or DEP 2001 Psychology of Infancy and Childhood or INP 2002 Introductory Industrial/Organizational Psychology or SOP 2772 Psychology of Sexual Behavior STA 2122 Introduction to Statistics I 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.	**Bachelor of Arts** **Degree Program Hours: 120** **Lower Division Preparation** **Common Prerequisites** BSC 2023 Human Biology PSY 2020 Introduction to Psychology DEP 2000 Human Growth and Development or DEP 2001 Psychology of Infancy and Childhood Or *CLP 2001 Personal Adjustment** *Or* *INP 2002* Introductory Industrial/Organizational Psychology or SOP 2772 Psychology of Sexual Behavior STA 2122 Introduction to Statistics I 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. **WE REQUEST A CHANGE IN PRESENTATION OF LABS; FIELD EXPERIENCE & AREA REQUIREMENT AS FOLLOWS:*
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: **I. Specific Required Courses in the Following Sequence: (12)** A. Statistics (offered by the Department of Statistics): STA 3123 Introduction to Statistics II *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 *(Prerequisites: STA 3123 and PSY 3213)* *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.	**Upper Division Program** Delete old text **I. COURSEWORK FOR THE MAJOR:** 36 credit hours are required (grades 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 (24 credits). 1. Research Sequence (12 credit hours total). Students must take these three courses in the following order. A. STA 3123 Introduction to Statistics II *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 4953: Community Field Experience DEP 4704: Developmental Psychology DEP 4720: Psychosocial Interventions
	EAB 4034: Advanced Behavior Analysis EXP 4005: Advanced Experimental EXP 4214: Human Perception EXP 4404: Learning & Remembering INP 4055: Industrial/Organizational *SOP 4714C: Environment & Behavior was SOP 4714* PSY 4932: Human Communication *SOP 4214C & SOP 4214L: Experimental Social was SOP 4215* *CLP 4135 & CLP 4135L: Experimental Health was SOP 4331 & SOP 4331L* **2. Area Requirement Courses:** (15 credit hours). Students are required to take one course from each area requirement.

COLLEGE OF ARTS & SCIENCES
UNDERGRADUATE PROGRAM CHANGES

CHANGES TO THE PSYCHOLOGY MAJOR, continued:

CONTACT: Leslie Frazier

Lecture Courses	Lab Courses	
Area A: Experimental		**Area A: Experimental**
EXP 3523	EAB 4034	EXP 3523
EXP 4204	EXP 4214	EXP 4204
EXP 4605	EXP 4404	*EXP 4604 was EXP 4605*
EAB 3002	EXP 4005	EAB 3002
PSB 4003		*PSB 4002 was PSB 4003*
Area B: Social		**Area B: Social**
SOP 3004	SOP 4649	SOP 3004
SOP 4522	SOP 4214C	SOP 4522
SOP 4645	SOP 4714C	SOP 3742
SOP 3742		SOP 4414
SOP 4414		SOP 4525
SOP 4525		
Area C: Applied		**Area C: Applied**
CYP 3003	INP 4055	CYP 3003
INP 4203	CLP 4315	INP 4203
PPE 4604	CYP 4953	*PSY 4302 was PPE 4604*
SOP 4234	SOP 4714C	*CLP 4314 was SOP 4834*
SOP 4842		SOP 4712
INP 4313		*INP 4313 was SOP 4662*
SOP 4662		SOP 4842
		EAB 4794
Area D: Personality/Abnormal		Area D: Personality/Abnormal
CLP 3003	PPE 4325	EXP 3304
CLP 4146		CLP 4374
EXP 3304		CLP 4144
CLP 4374		*CLP 4134 was DEP 4213*
DEP 4213		PPE 3003
PPE 3003		EAB 3765
EAB 3765		
Area E: Developmental		**Area E: Developmental**
DEP 3404	PSY 4932	DEP 3115
DEP 4164	DEP 4704	*DEP 3405 was DEP 3303*
DEP 4014		DEP 3404
DEP 3115		DEP 4014
DEP 3303		DEP 4164
SOP 3015		DEP 4464
DEP 4464		SOP 3015
		DEP 4046
III. Required Psychology Course Electives: (9)		**3. Required Psychology Course Electives:** *(9credit hours)*
Any psychology course taken for a letter grade can be used to fulfill the requirement for electives.		Any psychology course taken for a letter grade can be used to fulfill the requirement for electives. *These courses must be upper level (3000 or 4000) courses. Students must have a have at least 36 credit hours in total of upper division hours for the psychology major.*
Note: In some cases a student may fulfill a distribution area requirement with a laboratory course and may not 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 60 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 60 upper division credit hours needed for graduation. Students may, with the permission of the instructor, take PSY 4900 and PSY 4916, 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. *Remarks:* (1) The student is strongly urged to contact the Psychology Department for advisement in curriculum planning; (2) Psychology majors are allowed to transfer a maximum of ten upper division semester credit hours toward the psychology degree.		**4. Electives to Complete the requirement of 60 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 4916, 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 advisement 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-Experimental Analysis of Behavior; EDP-Educational Psychology; EXP-Experimental Psychology; INP-Industrial and Applied Psychology; LIN- Linguistics; PCO-Psychology for Counseling; PPE-Psychology of Personality; PSB-Psychobiology; PSY-Psychology; SOC-Sociology; SOP-Social Psychology; SPA-Speech Pathology and Audiology		**Definition of Prefixes** CLP-Clinical Psychology; CYP-Community Psychology; DEP-Developmental Psychology; EAB- Experimental Analysis of Behavior;; EXP-Experimental Psychology; INP-Industrial and *Organizational* (*delete applied) Psychology; LIN- Linguistics; PCO-Psychology for Counseling; PPE-Psychology of Personality; PSB-Psychobiology; PSY-Psychology; SOC-Sociology; SOP-Social Psychology; SPA-Speech Pathology and Audiology

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

CHANGES IN THE CIVIL AND ENVIRONMENTAL ENGINEERING UNDERGRADUATE PROGRAM & CATALOG

ONTACT: Berrin Tansel 05/06: 21

Civil and Environmental Engineering

Amir Mirmiran, Ph.D., P.E., *Professor, Chair*
Hector R. Fuentes, Ph.D., P.E., D.E.E., *Professor, Undergraduate Program Director*
Albert Gan, Ph.D., *Associate Professor, Graduate Program Director for Civil Engineering*
Sylvan C. Jolibois, Jr., Ph.D., *Associate Professor*
Shonali Laha, Ph.D., P.E., *Associate Professor, Graduate Program Director for Urban and Environmental Systems*
1 **Forrest Masters**, Ph.D., *Assistant Professor,* [redacted]
Luis A. Prieto-Portar, Ph.D., P.E., *Professor*
Wolfgang F. Rogge, Ph.D., P.E., *Associate Professor*
L. David Shen, Ph.D., P.E., T.E., *Professor*
Walter Z. Tang, Ph.D., P.E. *Associate Professor*
Berrin Tansel, Ph.D., P.E. *Associate Professor, Graduate Program Director for Environmental Engineering*
LeRoy E. Thompson, Ph.D., P.E. *Professor Emeritus*
Ton-Lo Wang, Ph.D., P.E. *Professor*
Fang Zhao, Ph.D., P.E. *Associate Professor*

Lehman Center for Transportation Research
L. David Shen, Ph.D., P.E., T.E., [redacted]

Bachelor of Science in Civil Engineering

Common 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	Multivariable Calculus
MAP 2302	*Differential Equations*
PHY 2048	Physics with Calculus
PHY 2048L	General Physics Lab I
PHY 2049	Physics with Calculus II
EGN 3311	Statics
EGN 33[redacted]	Dynamics
2 STA 3311	[redacted] Statistics

[redacted]

Degree Program Hours:
Minimum [redacted]

The Civil Engineering curriculum provides a [redacted] of interrelated technical areas [redacted] of Civil Engineering with the fundamental core subjects of the engineering program. The technical interdisciplinary courses are in the areas of construction, geotechnical, environmental, [redacted], structural, surveying, transportation, [redacted] and water resources engineering.

3 Civil engineers play an essential role in serving people 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).[redacted]

Lower Division Preparation

To qualify for admission to the upper division program, FIU 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' for Engineers or Computer Tools for CE, 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 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 area 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, must complete all required classes, and must otherwise meet all of the state and university requirements in order to graduate.

Students who enter the university with fewer than 60 transferred credits must take 9 summer credits. Refer to the appropriate sections in the Catalog's for more information.

Courses are to be taken in the proper sequence. Any course taken without the required prerequisites and corequisites will be dropped automatically before the end of the term, resulting in a 'DR' or 'DF'.

Upper Division Course Objectives

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Berrin Tansel

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 [redacted] 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 critical thinking and creative problem solving strategies. Course projects are designed to teach engineering science fundamentals and their applications while providing enriching opportunities for laboratory and computer-based experiences. Furthermore, students are supplied with an understanding of the economic, social, [redacted] ethical [redacted] 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)

4

[redacted]

	or	
CGN 2420	Computer Tools for CE	3
CWR 3201	Fluid Mechanics	3
CWR 3201L	Fluid Mechanics Laboratory	1
EGM 3520	Engineering Mechanics of Materials	3
EGM 3520L	Materials Testing Lab	1
EGN 3311	Statics	3
EGN 3321	Dynamics	3
EGN 1110C	Engineering Drawing *(Required unless previously taken)*	3

Civil Engineering Curriculum (41)

CEG 4011	Geotechnical Engineering I	3
CEG 4011L	Soil Testing Laboratory	1
CES 3100	Structural Analysis	3
CES 4605	Steel Design [redacted]	3
CES 4702	Reinforced Concrete Design	3
CGN 4802	Civil Engineering Senior Design Project	3
CWR 3103	Water Resources Engineering	3
ENV 3001	Introduction to Environmental Engineering	3
ENV 3001L	Environmental Laboratory	1
SUR 2101C	Surveying	3
TTE 4201	Transportation and Traffic Engineering	3
C.E. Elective	(min)	3
C.E. Elective	(min)	3
C.E. Elective	(min)	3
C.E. Elective	(min)	3

[redacted]

Combined BS/MS Program

Students who have completed a minimum of 90 hours towards their BS 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 BS/MS program. Students enrolled in the program may count up to 9 hours of CEE graduate courses as credits for both the BS CEE electives and the MS degree. The BS/MS Program has been designed to be a continuous program, [redacted] Students in BS/MS 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 insure 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 will have the same access requirements to regular 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 students must apply (in 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 [redacted] 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. Applicants will be notified by the department on the decision of their application.

[redacted]

5

[redacted]

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Berrin Tansel

[redacted]

Professional Graduation Requirement
Students must take and pass CGN 4930 (FE Seminar) or show evidence of passing the state FE (EIT) examination to wholley fulfil departmental graduation requirements.

Civil [redacted] Engineering Program

Students may have a different sequence of courses as arranged with their advisor. For a complete program information, students should refer to the Program Summary Sheet available at the Department.

First Semester: (15)

MAC 2311	Calculus I	4
CHM 1045	General Chemistry I	3
CHM 1045L	General Chemistry I Lab	1
SLS 1501	Freshman Experience	1
ENC 1101	Freshman Composition	3
EGN 2030	Ethics & Legal Issues	[redacted]

Second Semester: (15)

MAC 2312	Calculus II	4
ENC 1102	Literary Analysis	3
PHY 2048	Physics with Calculus	4
PHY 2048L	General Physics Lab I	1
EGN 1033	Technology, Humans, and Society	3

Third Semester: (14)

ECO 2013	Macroeconomics	3
or		
ECO 2023	Microeconomics	3
MAC 2313	Multivariable Calculus	4
CHM 1046	General Chemistry II	3
CHM 1046L	General Chemistry Lab II	1
EGN 1110C	Engineering Drawing *(Required unless previously taken)*	3

Fourth Semester: (16)

PHY 2049	Physics with Calculus II	4
MAP 2302	Differential Equations	3
[redacted]		[redacted]
or		
CGN 2420	Computer Tools for CE	3
MUH 2116	Evolution of Jazz	3
or		
TPP 2100	Introduction to Acting	3
or		
CRW 2001	Creative Writing	3
THE 2000	Theatre Appreciation	3
MUH 1001	Music Appreciation	3
Humanities with Writing*		3

Fifth Semester: (12)

EGN 3311	Statics	3
EEL 3003	Electrical Engineering I	3
SUR 2101C	Surveying	3
Humanities with Writing II*		3

Sixth Semester: (13)

STA 3033	Introduction to Probability and Statistics for CS	3
or		
EIN 3235	Evaluation of Engineering Data	3
EGN 3321	Dynamics	3
EGM 3520	Engineering Mechanics of Materials	3
EGM 3520L	Engineering Mechanics of Material Lab	1
ENC 3211	Technical Writing	3

Seventh Semester: (14)

CWR 3201	Fluid Mechanics	3

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COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Berrin Tansel

CWR 3201L	Fluid Mechanics Lab	1
CES 3100	Structural Analysis	3
ENV 3001	Introduction to Environmental Engineering	3
ENV 3001L	Environmental Engineering Lab	1
EIN 3354	Engineering Economy	3

Eighth Semester: (15)

[redacted]		
CEG 4011	Geotechnical Engineering I	3
CEG 4011L	Soil Testing Laboratory	1
TTE 4201	Transportation & Traffic Engineering	3
CE Elective		3
CE Elective		3

Ninth Semester: (15)

CWR 3101	Water Resources	3
CES 4702	Reinforced Concrete Design	3
CGN 4802	Civil Engineering Senior Design Project	3
CE Elective		3
CE Elective		3

Student are required to either complete the CGN 4980 CE Seminar course or pass the FE exam

***Humanities with Writing: (6)**

Choose 2 courses from the following: At least 1 of the courses must have a history component.

PHI 2600	Introduction to Ethics	3
ARC 2701	History of Architecture	3
HUM 3306	History of Ideas	3
WOH 2001	World Civilization	3
EUH 2030	Western Civ. Europe in the Modern Era	3
AMH 2002	Modern American Civilization	3

Suggested Electives *(other electives may be chosen, as approved by Department Advisor):*

CEG 4012	Geotechnical Engineering II	4
CCE 4001	Heavy Construction	3
CGN 4321	GIS Application in Civil and Environmental Engineering	3
TTE 4804	Geometric Design of Highways	3
[redacted]		
ENV 4930	Special Topics in Civil Engineering	1-4

Electives for Environmental Engineering Option

ENV 4101	Elements of Atmospheric Pollution	3
ENV 4330	Hazardous Waste Assessment and Remediation	3
ENV 4351	Solid Waste Management	3
ENV 4401	Water Supply Engineering	4
ENV 4551	Sewerage and Wastewater Treatment	4
ENV 4560	Reactor Design	3
ENV 4513	Reactions in Environmental Engineering Systems	3
ENV 4024	Bioremediation	3
ENV 4930	Special Topics in Environmental Engineering	1-4

Electives for Construction Engineering Option

CCE 4001	Heavy Construction	3
CCE 5035	Construction Engineering Management	3
CCE 5505	Computer Integrated Construction Engineering	3
CGN 4321	GIS Applications in Civil & Environmental Engineering	3

Note: Required credits towards graduation are 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.

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Bachelor of Science in Environmental Engineering

[redacted]

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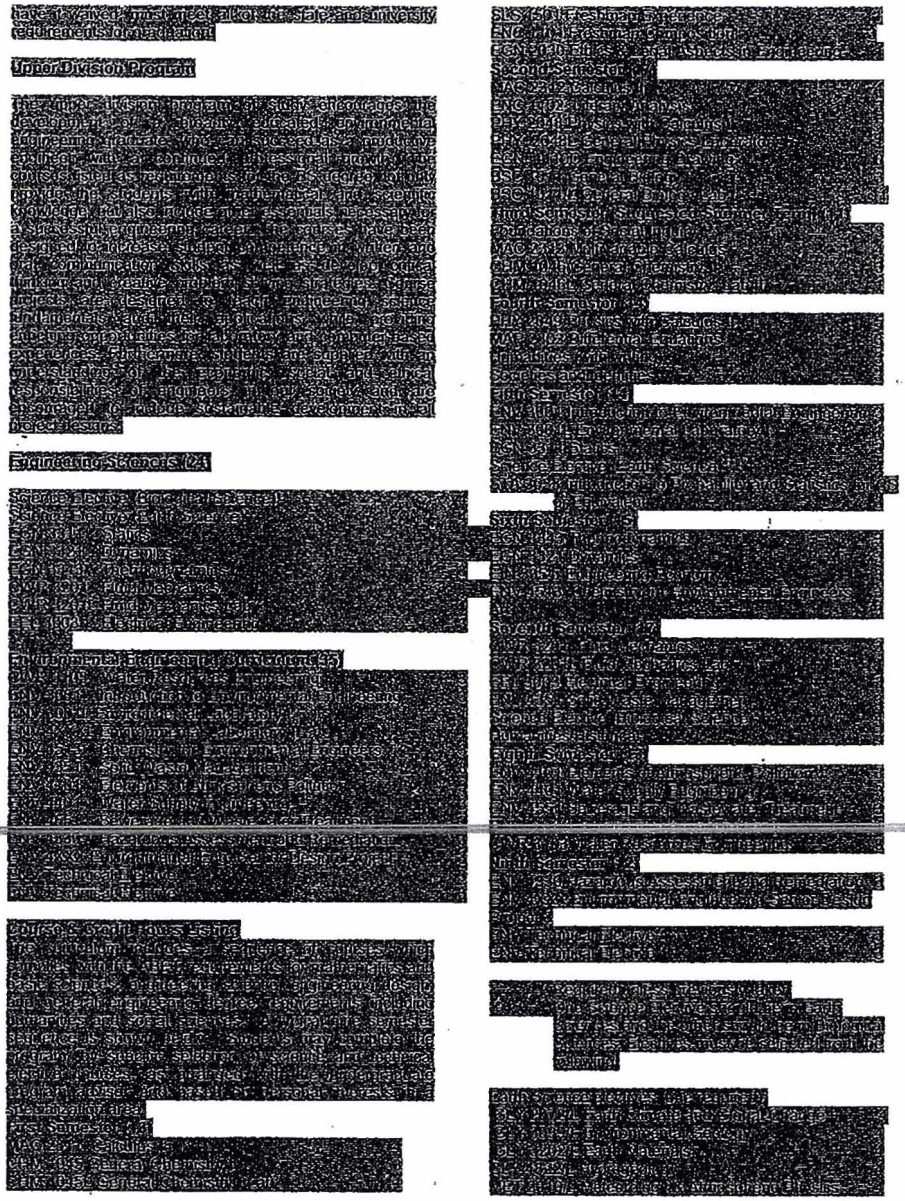
COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

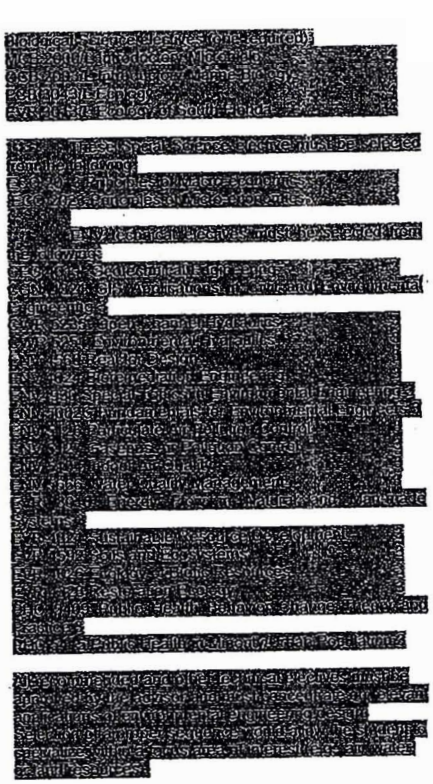
CONTACT: Berrin Tansel



COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Berrin Tansel



Course Descriptions

Definition of Prefixes

CCE-Civil Construction Engineering; CEG-Engineering, General; CES-Civil Engineering Structures; CGN-Civil Engineering; CWR-Civil Water Resources; [redacted] EGM-Engineering, Mechanics; EGN-Engineering, General; ENV-[redacted]

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SUR-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, coffer-dams, dewatering, river diversions, tunnelling. Prerequisite: Permission of the instructor.

CCE 4031 Project Planning for Civil Engineers (3). Introduction to techniques for planning activities, operations, finance, budget, workforce, quality, safety. Utilize case studies as learning tools for students aspiring to superintendent positions.

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CEG 4011 Geotechnical Engineering I (3). Engineering geology, soil properties; stresses in soils; failures; criterias; consolidation and settlement; compaction, soil improvement and slope stabilization. Prerequisite: CWR 3201 and L, EGM 3520, and L, CHM 1046 and PHY 2049.

CEG 4011L Soil Testing Laboratory (1). Laboratory experiments to identify and test behavior of soils and rocks. Prerequisite: CWR 3201, CWR 3201L, EGM 3520L, EGM 3520. Corequisites: CEG 4011. (Lab fees assessed).

CEG 4012 Geotechnical Engineering II (4). Principles of foundation analysis and design: site improvement for bearing and settlement, spread footings, mat foundations, retaining walls, cofferdams, piles, shafts, caissons, tunnels, and vibration control. Computer applications. Prerequisite: CES 4702, CEG 4011 and L.

CEG 4126 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.

CES 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. Prerequisite: EGM 3520.

[redacted]

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Berrin Tansel

[redacted]

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 super and sub-structures. Design procedures are based on AASHTO codes and specialized software. Prerequisites: CEG 4011, CES 4702.

CES 4600 Introduction to the Design of Tall Buildings (3). The course reviews the different modern high-rise structural systems, a simple analysis of wind and seismic loading to effeiciently design very tall buildings. Prerequisites: CEG 4011, CES 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. Prerequisite: CES 3100.

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. Prerequisite: CES 3100 with a grade of 'C' or better.

[redacted]

CGN 2420 Computer Tools for Civil Engineers (3). Introduction to common civil engineering software such as CAD, COGO, project bidding programs, GIS, and others. Prerequisite: EGN 1110C or equivalent.

CGN 3949 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 reports required.

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, landscape architecture, and other related fields. Prerequisites: TTE 4201 or ENV 3001 or CWR 3103 or the equivalents.

CGN 4802 Civil Engineering Senior Design Project (3). 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. Done under the supervision of a faculty member and professional engineer. Prerequisite: CEG 4011, CEG 4011L, TTE 4201, CES 4702, [redacted]

CGN 4930 Special Topics in Civil Engineering (1-4). A course designed to give groups of students an opportunity to pursue special studies not otherwise offered.

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. Prerequisite: Permission from undergraduate advisor.

CWR 3103 Water Resources Engineering (3). Hydrologic and hydraulic engineering fundamentals: hydrologic cycle, hyetographs, hydrographs, frequency analysis, pipe systems, turbomachinery, open channels, structures, and groundwater. Prerequisites: CWR 3201, CWR 3201L, STA 3033 or EIN 3235.

CWR 3201 Fluid Mechanics (3). A study of the properties of fluids and their behavior at rest and in motion. Continuity, momentum, and energy principles of fluid flow. Prerequisite: EGN 3321. Corequisite: CWR 3201L.

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 3520 Engineering Mechanics of Materials (3). Analysis of axial, torsional, bending, combined stresses, and strains. Plotting of shear, moment and deflection diagram with calculus applications and interpretations. Prerequisites: MAC 2313, MAP 2302 and EGN 3311 with a grade of 'C' or better.

EGM 3520L Materials Testing Laboratory (1). Introduction to measurements of basic mechanical properties of materials. Experiments include axial tension, compression, torsion, flexure, and the response of simple structural elements. Prerequisites or Corequisites: EGM 3520, MAC 2312 and EGN 3311. (Lab fees assessed).

EGN 1110C Engineering Drawing (3). Introduction to elementary design concepts in engineering, principles of drawing, descriptive geometry, pictorials 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, torts, evidence.

EGN 3311 Statics (3). Forces on particles, equilibrium of forces, moments, couples, centroids, section properties, and load analysis of structures. Prerequisites: MAC 2312 and PHY 2048.

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

ENV 3949 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.

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 3201 and CWR 3201L or EML 3126 and 3126L, ENV 3001 and ENV 3001L.

ENV 4330 Hazardous Waste Assessment and Remediation (3). Generation, transport, treatment and disposal of hazardous waste; risk assessment and treatment of contaminated media. Prerequisite: One year of General Chemistry.

ENV 4351 Solid Waste Management (3). Sources, amounts and characteristics of solid wastes; municipal collection systems; method of disposal; energetic consideration in the recovery and recycle of wastes. Prerequisites: PHY 2049, and CHM 1046 and CHM 1046L.

ENV 4401 Water Supply Engineering (3). Quantity, quality, treatment, and distribution of drinking water. Prerequisites: CWR 3201 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 4401. (Lab fees assessed).

ENV 4513 Reactions in Environmental Engineering Systems (3). A practical basis for applying 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. Prerequisite: CWR 3201 and CWR 3201L, ENV 3001 and ENV 3001L. 4551L.

ENV 4551L Wastewater Laboratory (1). Laboratory exercises in the physical, chemical, and bacteriological quality of raw and treated wastewaters. Prerequisites: CWR 3201 and CRW 3201L, ENV 3001 and ENV 3001L, Corequisite: ENV 4551. (Lab fees assessed).

ENV 4560 Reactor Design (3). A theoretical and practical basis for reaction kinetics to understand multi-phase reactions, analysis and design of batch and continuous flow reactors. [redacted]

ENV 4930 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.

[redacted]

[redacted]

SUR 2101C Surveying (3). Computations and field procedures associated with the measurement of distances and angles using tape, level, transit, EDMs, and total station. Laboratory is in-cluded with field measurements. Prerequisite: EGN 1110C.

TTE 4201 Transportation and Traffic Engineering (3). Transportation characteristics; transportation planning, traffic control devices, intersection design, network design, research. Prerequisites: STA 3033 or EIN 3235 and SUR 2101C.

TTE 4203 Highway Capacity Analysis (3). Procedures involved in the capacity analysis of interrupted and uninterrupted flow highway facilities. Applications of highway capacity analysis software. Prerequisites: TTE 4201 or permission of instructor.

TTE 4804 Geometric Design of Highways (3). Parameters governing geometric design of highways; curve superelevation, widening of highway curves, intersection design; highway interchanges, use of AASHTO design guidelines. Prerequisite: TTE 4201.

TTE 4930C Transportation Seminar (1-3). Oral presentations made by students, guests, and faculty members on current topics and research activities in traffic and transportation engineering. Prerequisite: TTE 4201.

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

CHANGES IN THE MECHANICAL AND MATERIALS ENGINEERING UNDERGRADUATE PROGRAM &

CONTACT: Sabri Tosunoglu 05/06 '21

Mechanical and Materials Engineering

George S. Dulikravich, *Chairperson and Professor*
Arvind Agarwal, *Assistant Professor and Graduate Program Director*
Wei-Yu Bao, *Coordinator of Research*
Yiding Cao, *Associate Professor*
Wonbong Choi, *Associate Professor*
M. Ali Ebadian, *Professor*
Dennis Fan, *Assistant Professor*
Gordon Hopkins, *Professor and Dean Emeritus*
W. Kinzy Jones, *Professor and Director, Advanced Materials Engineering Research Institute*
Sukky Jun, *Assistant Professor*
Cesar Levy, *Professor*
Norman Munroe, *Associate Professor and Associate Director of Research, Applied Research and Technology*
Vish Prasad, *Distinguished Professor, Executive Dean, College of Engineering and Computing*
Diana Rincon, *Assistant Professor*
Surenda Saxena, *Professor*
Carmen Schenck, *Advisor/Instructor*
Jun Sun, *Visiting Instructor*
Ibrahim Tansel, *Associate Professor*
Yong Xin Tao, *Associate Professor and Undergraduate Program Director*
Sabri Tosunoglu, *Associate Professor*
Kuang Hsi Wu, *Professor*
Hexiong Yang, *Associate Professor*

Mechanical and Materials Engineering Department Mission Statement

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 and develop creative thinking, a professional attitude, economic judgement 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 [redacted]

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Sabri Tosunoglu

[redacted]

6 Based on the goals set above the academic program provides a well-balanced curriculum in the following [redacted] major areas of Mechanical Engineering:

- Fluid/Thermal Science
- Mechanics and Materials
- 7 Design [redacted] and Manufacturing

Further specializations in any of the following areas 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
- Multidisciplinary Computational Analysis
- Finite Element Analysis
- Environmental and Waste Management

8 [redacted]

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:

(Math/Science Hours: 32)

CHM 1045	General Chemistry I	3
CHM 1045L	General Chemistry Lab I	1
MAC 2311	Calculus I	4
MAC 2312	Calculus II	4
MAC 2313	Multivariable Calculus	4
MAP 2302	Differential Equations	3
EGM 3311	Analysis of Engineering Systems	3
PHY 2048	Physics with Calculus I	4
PHY 2048L	General Physics Lab I	1
PHY 2049	Physics with Calculus II	4
PHY 2049L	General Physics Lab II	1

Degree Program Hours: 128

The qualifications for admissions 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 [redacted] Calculus I, II, III, Differential Equations, Analysis of Engineering Systems, Chemistry I and Lab, Calculus based Physics I & II and labs [redacted] is a required prerequisite unless previously taken in high school). A minimum grade of a "C" is required in [redacted]. In addition, [redacted] transfer students [redacted] and FIU Freshman must take [redacted] the FIU University Core Curriculum Requirements, [redacted] whose topics also complement the goals and objectives of the College of Engineering [redacted] (including economic, environmental, political, and/or social issues. See semester-by-semester sample program for courses that fulfill this requirement). Students must make up any missing prerequisites before they will be allowed to begin taking certain engineering courses (see course listing for required pre/corequisites).

9 10 11 12

Other Requirements

Students must meet the University Foreign Language Requirement. Students must pass the CLAST or have it waived. Students who enter the university with fewer than 36 semester hours must satisfy a summer residency requirement by taking a minimum of 9 credit hours during the summer semester while at FIU. Students must meet all of the state and university requirements in order to graduate.

The minimum requirements for graduation in Mechanical Engineering consist of two parts: 1) Mathematics, Basic Sciences, Humanities and Social Science requirements, and 2) Engineering Sciences, Engineering Design, Laboratory and Elective requirements.

Mechanical Engineering Curriculum

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

EGN 1100	Introduction to Engineering	2

13 [redacted]

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Sabri Tosunoglu

EGN 3311	Statics[1]	3
EGN 3321	Dynamics[1]	3
EGN 3365	Materials in Engineering[1]	3
EMA 3702	Mechanics and Material Science[1]	3
EMA 3702L	Mechanics and Materials Science Lab	1
EML 3126	Transport Phenomena[1]	3
EML 3126L	Transport Phenomena Lab	1
EGN 3343	Thermodynamics I	3
EIN 3354	Engineering Economy	3
EML 4140	Heat Transfer	3
EIN 3390	Manufacturing Processes	2
EIN 3390L	Manufacturing Processes Lab	1
EEL 3003	Electrical Engineering I[1]	3
EEL 3111L	Circuits Lab	1
EML 3301L	Instrumentation & Measurement Lab	1
EML 4906L	Mechanical Lab I	1
EML 3500	Mechanical Design I	3
EML 4501	Mechanical Design II	3
EML 4706	Design of Thermal and Fluid Systems	3
EML 4551	Design Project Organization[2]	1
EML 4905	Senior Design Project[2]	3
Design Elective[3]		3

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

[2]The Senior Design Project is taken in two consecutive semesters during the senior year. During the first semester of his/her senior year, the student must register for EML 4551 Design Project Organization. The senior project begins during this course. The next semester the student must register for EML 4905 to complete the project.

[3]Approved Design Electives:

EGM 4350	Finite Element Analysis in Mechanical Design	3
EML 4503	Production Machine Modeling and Design	3
EML 4525	Mechanical Design Synthesis and Analysis	3
EML 4535	Mechanical Computer Aided Design	3
EML 4561	Introduction to Electronic Packaging	3
EML 4603	Air Conditioning Design	3
EML 5509	Mechanical Design Optimization	3
EML 5519	Fault-Tolerant System Design	3

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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: Machining, 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.

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Electives

concentrations available within the Mechanical Engineering program with some of their elective offerings are listed below.

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Fluids/Thermal Sciences and Energy Systems

EGM 4350	Finite Element Analysis in Mechanical Design	3
EML 3450	Energy Systems	3
EML 4419	Propulsion Systems	3
EML 4421	Internal Combustion Engines	3
EML 4525	Mechanical Design Synthesis and Analysis	3
EML 4601	Principles of Refrigerating and Air Conditioning	3
EML 4601L	Refrigeration and A/C Lab	1
EML 4603	Air Conditioning Design	3
EML 4608C	Mechanical Systems in Environmental Control	3
EML 4702	Fluid Dynamics	3
EML 4711	Gas Dynamics	3
EML 5103	Intermediate Thermodynamics	3
EML 5104	Classical Thermodynamics	3
EML 5152	Intermediate Heat Transfer	3
EML 5606C	Advanced Refrigeration and A/C Systems	3
EML 5615C	CAD in Air Conditioning	3
EML 5708	Advanced Design of Thermal and Fluid Systems	3
EML 5709	Intermediate Fluid Mechanics	3

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

Mechanics, Materials and Design

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EGM 4610	Introduction to Continuum Mechanics	3
EGM 4350	Finite Element Analysis in Mechanical Design	3
EGM 5315	Intermediate Analysis of Mechanical Systems	3
EGM 5615	Synthesis of Engineering Mechanics	3
EGN 5367	Industrial Materials and Engineering Design	3
EMA 3066	Polymer Science and Engineering	3
EMA 4121	Physical Metallurgy	3
EMA 4121L	Materials Laboratory	1
EMA 4223	Mechanical Metallurgy	3
EMA 5295	Principles of Composite Materials	3
EMA 5507C	Analytical Techniques of Material Sciences	3
EMA 5935	Advanced Topics in Materials Engineering	3
EML 3301C	Instrumentation	3
EML 4260	Dynamics of Machinery	3
EML 4525	Mechanical Design Synthesis and Analysis	3
EML 4535	Mechanical Computer-Aided Design	3
EML 4561	Introduction to Electronic Packaging	3
EML 5125	Classical Dynamics	3
EML 5385	Identification Techniques of Mechanical Systems	3
EML 5530	Intermediate CAD/CAE	3
EML 5562	Advanced Electronic Packaging	3

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Manufacturing and Robotics

Design, Robotics and Manufacturing

EML 4535	Mechanical Computer-Aided Design	3
EML 4561	Introduction to Electronic Packaging	3
EML 5562	Advanced Electronic Packaging	3

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Students are required to complete credit hours of technical electives, three of which are approved design credits.

Students with special needs may take other elective courses (not listed above) with permission of the Mechanical Engineering Advisor. Students are not restricted to these four concentration areas but may choose courses, with the advisor's consent, that will form a coherent concentration area. Special topics may be counted as an elective.

Mechanical Engineering Program Requirements—Freshman to Senior

First Semester: (17)

MAC 2311	Calculus I	4
CHM 1045	General Chemistry I	3
CHM 1045L	General Chemistry I Lab	1
ENC 1101	Freshman Composition	3
MUH 2116	Evolution of Jazz	3
	or	
TPP 2100	Introduction to Acting	3
	or	
THE 2000	Theatre Appreciation	3
	or	
CRW 2001	Creative Writing	3
	or	
		3
		3
EGN 1100	Introduction to Engineering	2
SLS 1501	Freshman Experience Seminar	1

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Second Semester: (18)

MAC 2312	Calculus II	4
PHY 2048	Physics I with Calculus	4
PHY 2048L	General Physics I Lab	1
ENC 1102	Literary Analysis	3
EGN 3365	Materials in Eng	3
EGN 1033	Technology, Humans and Society	3

Third Semester: (18)

MAC 2313	Multivariable Calculus	4
PHY 2049	Physics with Calculus II	4
PHY 2049L	General Physics II Lab	1
		3
EGN 3311	Statics	3
		3
	with Writing*	3

Fourth Semester: (15)

		3
MAP 2302	Differential Equations	3
EGN 3321	Dynamics	3
EGN 3343	Thermodynamics I	3
		2
		1
Humanities	Writing*	3

Fifth Semester: (18)

		3
EMA 3702	Mechanics and Materials Science	3
EMA 3702L	Mechanics and Materials Science Lab	1
		3
EML 3126	Transport Phenomena	3
EML 3126L	Transport Phenomena Lab	1
		3
		3
		1
EEL 3003	Electrical Engineering I	3
EEL 3111L	Circuits Lab	1

Sixth Semester: (16)

		3
EML 4140	Heat Transfer	3
EML 3500	Mechanical Design I	3
		3
EML 3301L	Instrumentation and Measurement Lab	1
EIN 3354	Engineering Economy	3
INP 2002	Introductory Industrial/Organization Psychology	3
	or	
		3
	or	
ECO 2013	Principles of Macroeconomics	3
	or	
SYG 2010	Social Problems	3

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	or	
GEO 2000	Introduction to Geography	3
	or	
INR 2002	Dynamics of World Politics	3

Seventh Semester: (13)

EML 4501	Mechanical Design II	3
EML 4706	Design of Thermal and Fluid Systems	3
[illegible]		
[illegible]		
EML 4551	Design Project Organization	1
Engineering Elective		3

Eighth Semester: (13)

[illegible]		
[illegible]		
EML 4906L	Mechanical Lab	1
EML 4905	Senior Design Project	3
Design Elective		3
Engineering Elective		3

21 [illegible] SEMESTERS ABOVE

*Humanities with Writing: Choose from the following list:

PHI 2600	Introduction to Ethics	3
ARC 2701	History of Architecture	3
HUM 3306	History of Ideas	3
WOH 2001	World Civilization	3
EUH 2030	Western Civilization-Europe in the Modern Era	3
AMH 2002	Modern American Civilization	3

22 BS/ME-MS/ME Degree Program

[illegible]

Combined Bachelor's/Master's (BS/MS) Program 23

[illegible]

Combined BS/MBA Program 24

[illegible]

COLLEGE OF ENGINEERING AND COMPUTING
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CONTACT: Sabri Tosunoglu

[redacted]

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 16 credit hours work listed below with a minimum grade of "C" in each course.

EGN 3311	Statics[1]	3
EGN 3321	Dynamics[1]	3
EGN 3343	Thermodynamics I[1]	3
EML 3126	Transport Phenomena[1]	3
	and	
EML 3126L	Transport Phenomena Lab[1]	1
EML 4140	Heat Tranfer	3

[1]Students who have taken equivalent course/courses 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 II	3
EML 4706	Design of Thermal and Fluid Systems	3
EML 4601	Principles of Refrigerating and Air Conditioning	3
	and	
EML 4601L	Refrigeration and A/C Lab	1
EML 4721	Introduction to Computational Thermo-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 16 credit hours listed below with a minimum grade of "C" in each course.

EGN 3311	Statics[1]	3
EGN 3321	Dynamics[1]	3
EGN 3365	Materials in Engineering	3
EMA 3702	Mechanics and Materials Science[1]	3
	and	
EMA 3702L	Mechanics and Materials Science Lab[1]	1
	or	
EML 3126	Transport Phenomena[1]	3
EML 3126L	Transport Phenomena Lab[1]	1
EGN 3343	Thermodynamics I[1]	3

[1]Students who have taken equivalent course/courses will be exempted from taking these courses. However, they will need to select courses from the following list to satisfy the minimum requirement of 15 credit hours for the minor:

[redacted]		3
EML 3500	Mechanical Design I	3
[redacted]		3
EML 3101	Thermodynamics II	3
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 16 credit hours work listed below with a minimum grade of "C" in each course.

EGN 3311	Statics[1]	3
EGN 3365	Materials in Engineering[1]	3
EMA 3702	Mechanics and Materials Science	3
	and	
EMA 3702L	Mechanics and Materials Science Lab	1
EML 3500	Mechanical Design I	3
EML 4501	Mechanical Design II	3

[1]Students who have taken equivalent course/courses 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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[illegible]		
EGM 4350	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 FIU 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.

EGN 3311	Statics[1]	3
EGN 3321	Dynamics[1]	3
EML 3301L	Instrumentation and Measurement Lab	1
EMA 3702	Mechanics and Materials Science[1]	3
EML 4804	Introduction to Mechatronics	3
EML 4806	Modeling and Control of Robots	3

[1]Students who have taken equivalent course/courses 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:

[illegible]		
EML 4312	Automatic Control Theory	3
[illegible]		
EML 4535	Mechanical Computer Aided Design	3

Professional Certificate Program

Heating, Ventilating and Air Conditioning Design

Yong X. Tao, *Associate Professor and Coordinator*

This Professional Certificate Program provides both traditional students and practicing professionals with a learning experience that enhances their design capabilities in the HVAC field. The program focuses on both basic engineering science and practical applications of system design. Interested applicants must contact the department chairperson or the coordinator prior to registering for the program.

The Certificate will be awarded to a student who successfully demonstrates competency in:

EGN 3343	Thermodynamics I	3
EIN 3354	Engineering Economy	3
EML 4601	Principles of Refrigerating and Air Conditioning	3
EML 4603	Air Conditioning Design	3
EML 4608C	Mechanical Systems in Environmental Control	3

Some of these courses may require additional prerequisites or permission of the program coordinator.

Definition of Prefixes
EAS – Engineering; Aerospace
ECH – Engineering; Chemical
EGM – Engineering; Mechanics
EGN – Engineering; General
EMA – Engineering; Materials
EML – Engineering; Mechanical

EAS 4105 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.

ECH 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, winning; aqueous and fused salts, primary, secondary and fuel cells. Prerequisite: CHM 3411.

ECH 4706 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 solutions and in fused salts; [illegible], electrowinning, and refining; electrochemical power systems. Prerequisite: ECH 3704.

ECH 4826 Corrosion Control (3). Various forms of corrosion, including pitting, stress, crevice, galvanic and microbial induced corrosion, are presented. The problems of material selection, failure analyses and corrosion control are discussed. Prerequisites: EGN 3365 and CHM 3411.

EGM 3311 Analysis of Engineering Systems (3). Statistics and probability analysis of materials and fluids experiments, structural and fluid system modeling and analysis using lumped parameters; numerical methods to find solutions. [illegible]

EGM 3503 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.

EGM 4350 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: CGS 2420 or CGS 2423, EML 4140 and EMA 3702.

EGM 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: EGN 3365.

EGM 4522C Materials Science II (3). Mechanical properties of materials, including strengthening plasticity and fracture. Introduction into ceramic and [illegible] materials systems. Prerequisite: EGN 3365.

[illegible]

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

[redacted]

[redacted]

[redacted]

[redacted]

EGM 4610 Introduction to Continuum Mechanics (3). Introduction to modern continuum mechanics, mathematical preliminaries, stress and equilibrium, deformations and compatibility, constitutive equations, balance laws, problem solution strategies. Prerequisite: [redacted]

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EGM 5315 Intermediate Analysis of Mechanical Systems (3). First course at the graduate level in the analysis of mechanical systems. Modeling of the system and analytical and numerical methods of solution of the governing equations will be studied. Fluid and thermodynamic systems will be emphasized in this course. Prerequisites: EGM 3311, MAP 2302, or permission of the instructor.

EGM 5346 Computational Engineering Analysis (3). Application of computational methods to mechanical engineering problems of translational, rotational, control, thermal and fluid systems employing linear/nonlinear system elements. Prerequisites: EML 2032, MAP 2302, EML 3222, or permission of the instructor.

EGM 5354 Finite Element Method Applications in Mechanical Engineering (3). Utilize the finite element method to solve problems in heat transfer, fluid dynamics, diffusion, acoustics, vibrations, and electromagnetism, as well as the coupled interaction of these phenomena. Prerequisites: EML 2032, EMA 3702, and EML 4140.

[redacted]

EGM 5615 Synthesis of Engineering Mechanics (3). Unified approach to the analysis of continuous media using constitutive equations, mechanical behavior of materials and their usefulness in handling failure theories and composite materials. Prerequisites: MAP 2302 or EGM 3311, and EMA 3702.

EGM 5935 Review of Topics in Mechanical Engineering (4). To prepare qualified candidates to take the Mechanical Engineering PE written examination. Reviewed courses include: Thermodynamics, Fluid 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 1110C 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 3311 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 3321 Dynamics (3). Study of the motion of particles and rigid bodies, conservation of energy and momentum. A vector approach is utilized. Prerequisite: EGN 3311.

EGN 3343 Thermodynamics I (3). Fundamental concepts of basic thermodynamics including first and second law topics, equations of state and general thermodynamic relationships. Prerequisites: MAC 2312, PHY 2048, and CHM 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 5367 Industrial Materials and Engineering Design (3). Industrial materials, material selection, and engineering design process, including synthesis, analysis, optimization, and evaluation.

EGN 5990 Fundamentals of Engineering (FE) Exam Review (4). Prepares upper level engineering students to take the Fundamentals of Engineering (FE) State Board Examinations. Reviews Chemistry, Engineering Economics, Statics, Dynamics, Electrical Circuits, Fluid Mechanics, Mechanics of Materials, Material Science and Thermodynamics.

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.

EMA 3702L Mechanics and Materials Science Lab (1). Introduction to measurements of basic mechanical properties of materials. Experiments including tension, bending, torsion, fatigue, buckling, strain, and stress visualization. Prerequisite: EGN 3311. Corequisite: EMA 3702.

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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: EGN 3365.

EMA 4121L Materials Laboratory (1). Laboratory techniques in materials, including metallography, mechanical testing, heat treatment and non-destructive testing techniques. Prerequisite: EGN 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 polycrystals; fracture of metals. Prerequisites: EGN 3365 and EMA 3702.

EMA 5001 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 on 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: EGN 3365 Materials in Engineering, EGM 3311 Analysis of Mechanical Systems.

EMA 5016 Nanelectronic 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: EGN 3365.

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

EMA 5018 Nanoscale Modeling of Materials (3). Overview of computational nanotechnology. Modeling, simulation and design of nanomaterials. Energy minimization, molecular dynamics and advanced multiscale numerical techniques. Prerequisites: EGN 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 5106 Thermodynamics and Kinetics of Materials (3). Laws of thermodynamics. Entropy and free energy. Diffusion mechanisms. Transition state theory and field effects. Phase diagrams. Nucleation in condensed phases. Crystal growth. Prerequisite: EGN 3343.

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

EMA 5295 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 5615 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: EGN 3365.

[redacted]

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

EMA 5646 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: EGN 3343 and EGN 3365.

EMC 5415 Digital Control of Mechanical Systems (3). Discrete modeling of mechanical systems. Digital feedback with emphasis on hydraulic, pneumatic and electro-mechanical devices. Prerequisite: EML 4312.

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

EML 2030 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: EGN 1100 or EML 3006, Corequisite: MAC 2313.

EML 2032 Programming for Mechanical Engineers (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.

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[redacted]

EML 3006 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.

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EML 3101 Thermodynamics II (3). Continuation of Thermodynamics I covering reactive and nonreactive mixtures 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 3126L Transport Phenomena Laboratory (1). Experiments illustrating the principles of transport phenomena: wind tunnel, shock tubes, airfoils. Prerequisite: EGN 3321, Corequisite: EML 3126.

EML 3222 System Dynamics (3). Introduction to modeling of mechanical systems; derivation of system equations and response of fluid, thermal, and vibrational systems. Available solution methods will be discussed. Prerequisites: EGN 3321, EMA 3702, EML 2032.

EML 3262 Kinematics and Mechanism Design (3). Fundamentals of kinematics and mechanism design; study of the mechanisms used in machinery and analysis of their motion. Two and three dimensional analytical and numerical methods of computer application. Design is emphasized. Prerequisites: EGN 3321, EML 2032.

EML 3301C Instrumentation (3). 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 3450 Energy Systems (3). Review of theory and engineering aspects of conventional energy conversion systems, fuels and combustion, fossil fuels, and nuclear power plants. Aspects of direct energy conversion. Prerequisite: EML 3101.

EML 3500 Mechanical Design I (3). Design of basic machine members including shafts, springs, belts, clutches, chains, etc. Prerequisites: EGN 3321, EMA 3702, and EGN 3365.

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 interpretation of signals will be discussed. Prerequisite: Permission of the instructor.

EML 4140 Heat 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 4220 Mechanical Vibrations (3). Theory and application of mechanical vibrations. Includes damped and undamped vibrations with one or more degrees of freedom computer methods emphasized. Prerequisites: 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 design. Prerequisites: EML 4501 or permission of the instructor.

EML 4260 Dynamics of Machinery (3). Acceleration and force analysis of reciprocating and rotating mechanisms and machines. Dynamic balancing of idealized systems. Torsional and lateral critical speeds of a rotor and self-excited instability. Prerequisite: EML 3262.

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 2302, EML 2032.

EML 4410 Combustion Processes (3). Introduction to combustion processes, thermochemistry, chemical kinetics, laminar flame propagation, detonations and explosions, flammability and ignition, applications in IC engines and gas turbines. Prerequisites: EML 3101 and EML 4140.

EML 4419 Propulsion Systems (3). Basics of air breathing and rocket engines used in flight systems, gas turbine and ramjet fundamentals. Introduction to compressor and turbine design. Propulsion performance. Unconventional means of propulsion in space. Prerequisites: EML 3101 and EML 3126.

EML 4421 Internal Combustion Engines (3). Engine types, characteristics and operation. Performance factors, fuel combustion, power cycles. Knock and engine variables. Exhaust emissions. Fuel Metering. Compressors and turbines. Prerequisite: EML 3101.

EML 4501 Mechanical Design II (3). Continuation of design analysis of elementary machine elements, including lubrication bearings, and gearings. Introduction to advanced analysis techniques. Prerequisite: EML 3500.

EML 4503 Production Machine Modeling and Design (3). The modeling of metal removing, forming, and polymer processing operations will be introduced. The design of production machines will be discussed based on the models. Prerequisites: EGN 3365, EMA 3702, and EIN 3390.

EML 4535 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 4551 Design Project Organization (1). Organization to include problem definition, goals, survey, conceptual and preliminary design, ethics and cost components, social and environmental impact, presentation to enhance communication skills. Corequisites: EML 3101, EGM 3311, EML 3500, and EML 4140.

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EML 4561 Introduction to Electronic Packaging (3). Introduction to mechanical packaging of electronic systems. Integrates concepts in mechanical engineering to the packaging of electronic systems, such as hybrid Prerequisites: EEL 3003 or EEL 3111, and EEL 3111L.

[redacted]

EML 4601 Principles of Refrigerating and Air Conditioning (3). Refrigeration cycles. Psycho-metrics. Thermal comfort. Load and energy calculations. Pump and piping design. Fan and air distribution. Heat exchangers design. Refrigeration systems and applications. Prerequisites: EML 3101 or permission of the instructor.

EML 4601L Refrigeration and Air Conditioning Lab (1). Experiments in Air Conditioning and Refrigeration applications. Corequisite: EML 4601.

EML 4603 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 4608C Mechanical Systems in Environmental Control (3). Analysis of refrigeration, heating and air handling systems. Design of environmental control systems. Prerequisite: EML 3101.

EML 4702 Fluid Dynamics (3). A mid-level course on ideal fluid flow, compressible flow and viscous flow. Analysis and numerical techniques of continuity and Navier-Stokes equation for incompressible and compressible flow. Prerequisite: EML 3126.

EML 4706 Design of Thermal and Fluid Systems (3). Design of thermal and fluid systems and components. Piping networks, duct works. Selection of pumps and fittings. Basic design of heat exchangers, turbomachinery, pumps, and fans. Prerequisites: EML 3101 and EML 4140.

EML 4711 Gas Dynamics (3). Basic equations of motion for the flow of a compressible fluid, isentropic flow, normal and oblique shock waves, linearized flows method of characteristics and supersonic thin-air foil theory. Prerequisites: EML 3126 and EGN 3343.

EML 4721 Introduction to Computational Thermo-Fluid (3). Introduction of numerical methods for compressible and incomprehensible flows and heat transfer. Topics include explicit and implicit schemes, accuracy and stability in different coordinate systems. Prerequisites: EML 2032 (equivalent or permission by instructor), EGM 3311 (or equivalent), EML 3126. Corequisite: EML 4140.

EML 4804 Introduction to Mechatronics (3). This course will introduce computer controlled precise motion generation in smart machines. Prerequisite: EML 3301L.

EML 4806 Modeling and Control of Robots (3). Robot models in terms of geometric parameters. Kinematic and dynamic modeling of robots. Static and dynamic force equilibrium. Robot programming, control algorithms, simulations. Prerequisite: EML 3262.

EML 4809 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 4806 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 3301L.

EML 4905 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 4551 and permission of the advisor. Corequisites: EML 4501, EML 4706.

EML 4906L Mechanical Lab (1). Experiments with various types of mechanical equipment including engines, fans, boilers, pumps, motions and mechanics. Prerequisites: EGN 3343 and EML 3126.

EML 4930 Special Topics/Projects (1-3). Individual conferences, assigned readings, and reports on independent investigations selected by the students and professor with approval of advisor.

EML 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.

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EML 5082 Advanced Nondestructive Testing and Mechanical Health Monitoring (3). Theory and application of Nondestructive Testing (NDT) and Mechanical Health Monitoring (MHM) techniques will be discussed. Automated interpretation of signals and advanced methods will be presented. Prerequisite: Permission of the instructor.

EML 5103 Intermediate Thermo Dynamics (3). Thermodynamic approach to processes and engines; alternative formulations and legendre transformations; maxwell relations, first and second order phase transitions. Prerequisite: EML 3101.

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

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

CONTACT: Sabri Tosunoglu

418 College of Engineering Undergraduate Catalog

EML 5104 Classical Thermodynamics (3). Mathematical analysis of the laws of classical reversible and irreversible thermodynamics. Applications to mechanical, electromagnetic, and chemical systems. Prerequisite: EML 3101.

EML 5125 Classical Dynamics (3). Kinematics of rigid body motion, Eulerian angles, lagrangian equations of motion, inertia tensor, momental ellipsoid. Rigid-body equations of motion, Euler's equations, force-free motion, polhade and herpolhade, theory of tops and gyroscopes. Variational principles. Hamiltonian equations of motion. Poinsote representation. Prerequisites: MAP 2302 or EGM 3311, and EGN 3321.

EML 5152 Intermediate Heat Transfer (3). Multidimensional heat conduction under steady and transient conditions. Heat, mass and momentum transfer. Radiation heat transfer. Gas radiation. Free and forced convection. Prerequisite: EML 4140.

EML 5385 Identification Techniques of Mechanical Systems (3). FFT, 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.

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

EML 5509 Mechanical Design Optimization (3). Finite element analysis and sensitivity analysis combined with numerical optimization techniques to optimize design. Prerequisites: EGM 5354 or permission of the instructor.

EML 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: EML 4312 or consent of the instructor.

EML 5514 Aerodynamics and Flight Mechanics (3). Fundamentals of aerodynamics, definition of aerodynamic shapes, analysis of aerodynamic forces, airplane performance, and flight stability and control. Prerequisites: EGN 3321, EML 3126, EGN 3343.

EML 5519 Fault-Tolerant System Design (3). Fault tolerance in mechanical, manufacturing, computer, and aerospace systems. Basic stages of fault isolation. Fault tolerance measures, architectures, and mechanical system design methodologies. Prerequisite: EML 3500.

EML 5528 Digital Control of Mechanical Systems (3). Discrete modeling of mechanical systems. Digital feedback systems. Computer interface with mechanical systems. Controller design with emphasis on hydraulic, pneumatic and electro-mechanical devices. Prerequisite: Permission of the instructor.

EML 5530 Intermediate Computer-Aided Design/ Computer-Aided Engineering (3). Computer-aided geometrical modeling of spatial mechanical systems. Design criteria and analytical approaches for planer kinematic systems will be emphasized. Prerequisites: EML 4535 or permission of the instructor.

EML 5562 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: EML 4561 or permission of the instructor.

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. Prerequisites: EML 3101 and EML 4140.

EML 5606C Advanced Refrigeration and Air Conditioning Systems (3). The various methods used in the thermal 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.

EML 5615C Computer-Aided Design in Air Conditioning (3). Software will be used to demonstrate heating, ventilating and air conditioning design concepts and sizing equipment & determining performance parameters. Project design is required. Prerequisites: EML 2032 and EML 4601.

EML 5708 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 4706.

EML 5709 Intermediate Fluid Mechanics (3). Basic concepts and scope of fluid dynamics; non-inertial reference frames. Two-dimensional potential theory. Applications to airfoils. The Navier-Stokes equations; selected exact and approximate equations. Prerequisite: EML 3126.

EML 5748 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 3126.

EML 5808 Control Technology for Robotic Systems (3). State-space equations of robots. Controller design based on linearization, nonlinearity cancellation, optimal control, adaptive control, and other methods. Stability analysis, performance comparison. Prerequisites: EGN 3321, EML 4312, or equivalent.

EML 5825 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.

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COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

CHANGES IN THE BS IN ENVIRONMENTAL ENGINEERING

CONTACT: Berrin Tansel

05/06 : 21

Existing (page 385*)	Proposed
Electives for Environmental Engineering Option ENV 4101 Elements of Atmospheric Pollution 3 ENV 4330 Hazardous Waste Assessment and Remediation 3 ENV 4351 Solid Waste Management 3 ENV 4401 Water Supply Engineering 4 ENV 4551 Sewerage and Wastewater Treatment 4 ENV 4560 Reactor Design 3 ENV 4513 Reactions in Environmental Engineering Systems 3 ENV 4024 Bioremediation 3 ENV 4930 Special Topics in Environmental Engineering 1-4 **Electives for Construction Engineering Option** CCE 4001 Heavy Construction 3 CCE 5035 Construction Engineering Management 3 CCE 5505 Computer integrated Construction Engineering 3 CGN 4321 GIS Applications in Civil & Environmental Engineering 3 Note: Required credits towards graduation are 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.	**Electives for Construction Engineering Option** CCE 4001 Heavy Construction 3 CCE 5035 Construction Engineering Management 3 CCE 5505 Computer integrated Construction Engineering 3 CGN 4321 GIS Applications in Civil & Environmental Engineering 3 Note: Required credits towards graduation are 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.

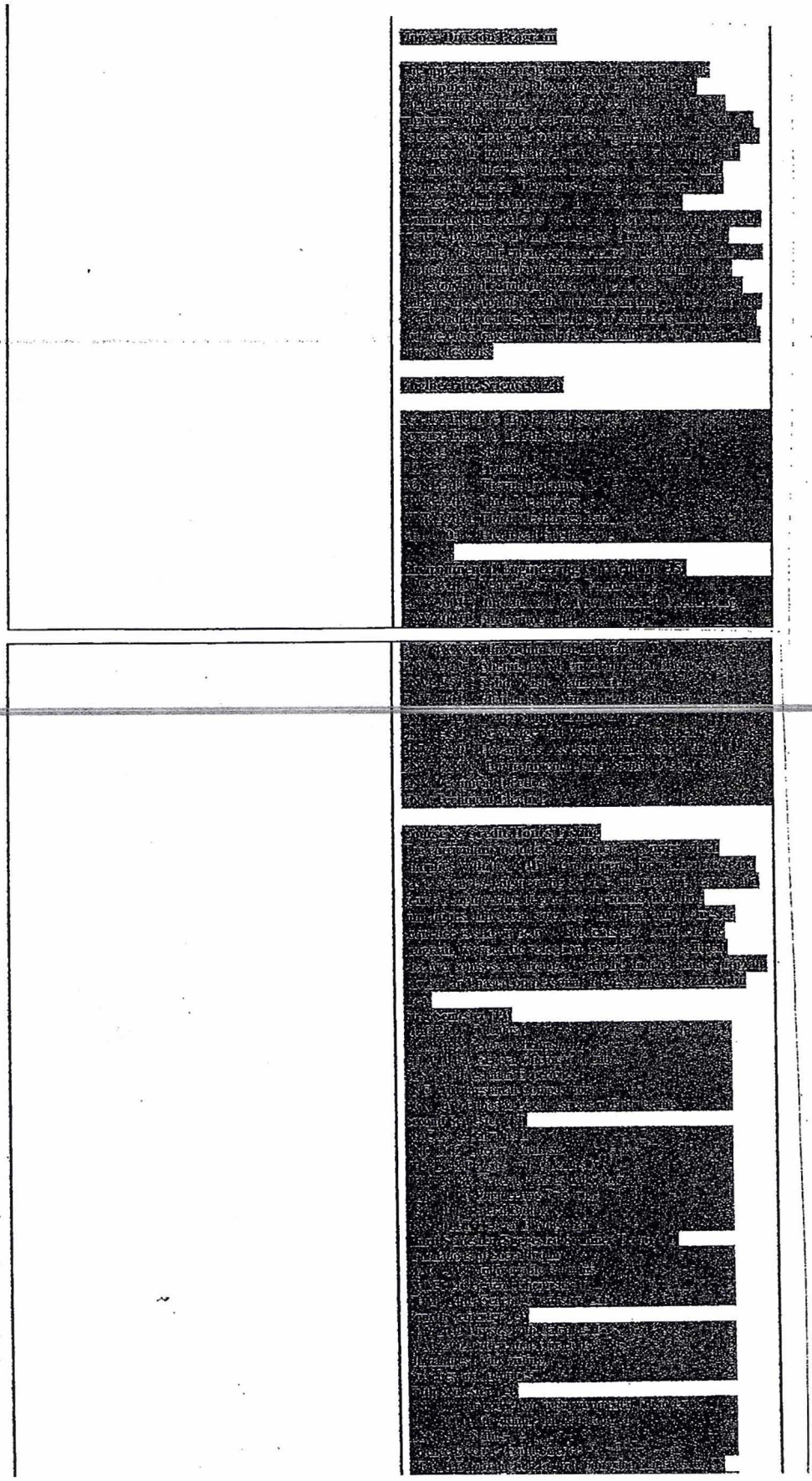
Course Descriptions

Definition of Prefixes

CCE-Civil Construction Engineering; CEG-Engineering, General; CES-Civil Engineering Structures; CGN-Civil Engineering; CWR-Civil Water Resources; EGM-Engineering, Mechanics; EGN-Engineering, General; ENV- Environmental; SUR-Surveying and Related Areas; TTE-Transportation and Traffic Engineering.

COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

CHANGES IN THE BS IN ENVIRONMENTAL ENGINEERING. Continued:
CONTACT: Berrin Tansel



COLLEGE OF ENGINEERING AND COMPUTING
UNDERGRADUATE PROGRAM CHANGES

CHANGES IN THE BS IN ENVIRONMENTAL ENGINEERING, Continued:
CONTACT: Berrin Tansel

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Course Descriptions

Definition of Prefixes

CCE-Civil Construction Engineering; CEG-Engineering, General; CES-Civil Engineering Structures; CGN-Civil Engineering; CWR-Civil Water Resources; EGM-Engineering, Mechanics; EGN-Engineering, General; ENV- Environmental; SUR-Surveying and Related Areas; TTE-Transportation and Traffic Engineering.

SCHOOL OF HOSPITALITY AND TOURISM MANAGEMENT
UNDERGRADUATE PROGRAM CHANGES

RESTAURANT/FOODSERVICE MANAGEMENT CERTIFICATE:

CONTACT: Diann Newman

change to Professional Certificates

05/06:26

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[1]	3
HFT 3503	Hospitality Marketing Strategy	3
HFT 4293	Hotel/Foodservice Operations Management	3
HFT 4323	Hospitality Facilities Management[1]	3
HFT 4413	Lodging Systems and Procedures[1]	3
HFT 4464	Financial Analysis in the Hospitality Industry[1]	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[1]	3
HFT 3XXX	Interpersonal Skills for the Hospitality Industry	3
HFT 4274	Timeshare Management[1]	3
HFT 4470	Resort Development[1]	3
HFT 4504	Hospitality and Tourism on the Internet[1]	3
HFT 4545	Leadership Training for Team Building[1]	3
HFT 4785	Casino Operations Management[1]	3
HFT 4802	Catering Management[1]	3

[1]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[1]	3
HFT 3503	Hospitality Marketing Strategy	3
HFT 4293	Hotel/Foodservice Operations Management	3
HFT 4323	Hospitality Facilities Management[1]	3
HFT 4413	Lodging Systems and Procedures[1]	3
HFT 4464	Financial Analysis in the Hospitality Industry[1]	3

Electives (9) (Any HFT or FSS course is acceptable for electives)

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[1]	3
HFT 4224	Human Relations	3
HFT 4274	Timeshare Management[1]	3
HFT 4470	Resort Development[1]	3
HFT 4504	Hospitality and Tourism on the Internet[1]	3
HFT 4545	Leadership Training for Team Building[1]	3
HFT 4785	Casino Operations Management[1]	3
HFT 4802	Catering Management[1]	3

[1]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.

SCHOOL OF HOSPITALITY AND TOURISM MANAGEMENT
UNDERGRADUATE PROGRAM CHANGES

CHANGES TO THE TRAVEL AND TOURISM ADMINISTRATION CERTIFICATE

CONTACT: Diann Newman

Change to professional certificate 05/06:26

OLD		NEW	
Core Requirements (9)		**Core Requirements (9)**	
HFT 3000 Intro. To Hosp./Tours. Mgt.	3	HFT 3xxx Travel and Tourism Systems	3
HFT 3503 Hospitality Mkt. Strategies	3	HFT 3735 Destinations and Cultures	3
HFT 3713 International Tvl. & Tour.	3	HFT 4xxx Travel Information Tech.	3
			9
Electives (6)		**Electives (6)**	
HFT 3403 Accounting for Hosp. Ind.	3	HFT 3403 Accounting for Hosp. Ind.	3
HFT 3423 Hosp. Info. Tech.	3	*HFT 3509 Tourism Destination Mkt.*	3
HFT 3735 Destinations and Cultures	3	*HFT 3701 Sustainable Tourism Practices*	3
HFT 3753 Convention & Trade Show Mgt	3	*HFT 3741 Planning Meetings*	3
HFT 3760 Tourist Transport Systems	3	HFT 3770 Cruise Line Ops. & Mgt:	3
HFT 3770 Cruise Line Ops & Mgt.	3	HFT 4221 Human Resources	3
HFT 3793 Sociology of Leisure	3	HFT 4224 Human Relations	3
HFT 4221 Human Resources	3	*HFT 4708 Coastal & Marine Tourism*	3
HFT 4224 Human Relations	3	*HFT 4727 Travel Law*	3
HFT 4701 Sustainable Tourism Practices	3	*HFT 4762 Airline Management*	3
HFT 4802 Catering Mgt	3		6

Core Requirements are new; electives in *italics* are new.

CHANGES TO THE TRAVEL AND TOURISM MANAGEMENT CERTIFICATE

CONTACT: Diann Newman

Change to professional certificate 05/06:26

OLD	NEW
Core Requirements: (27)	**Core Requirements: (27)**
HFT 3xxx Travel Info. Technology 3	*HFT 3xxx Travel Info Technology 3*
HFT 3210 Fundamentals of Management 3	HFT 3210 Fundamentals of Mgmt 3
HFT 3423 Hospitality Information Systems 3	*HFT 3509 Tourism Destination Mktg 3*
HFT 3503 Hospitality Marketing Strategy 3	*HFT 3701 Sustainable Tourism Practices 3*
HFT 3735 Destinations and Cultures 3	~~HFT 3735 Destinations & Cultures 3~~ Intl. Trav. & Tour.
HFT 3753 Convention & Trade Show Mgmt 3	HFT 3770 Cruise Line Ops. & Mgmt. 3
HFT 3770 Cruise Line Mgmt 3	OR
HFT 4733 Tour Production and Distribution 3	HFT 4762 Airline Management 3
HFT 4762 Airline Management 3	*HFT 3991 Travel & Tourism Systems 3*
HFT 4763 Airline Computer System 3	*HFT 4xxx Managing Tourism Systems 3*
	HFT 4733 Tour Production & Distribution 3
	27
	Electives: (9)
	HFT 3403 Accounting for the Hosp. Ind. 3
	HFT 3509 Tourism Destination Mktg 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 4274 Timeshare Management 3
	HFT 4470 Resort Development 3
	HFT 4545 Leadership Training for Team Building 3
	HFT 4727 Travel Law 3
	HFT 4802C Catering Management 3

Core Requirements in *italics* are new.

NEW COURSES AND COURSE CHANGES –LISTED BY SCHOOL/COLLEGE/DEPARMENT

#05/06:21

SCHOOL OF ARCHITECTURE

ARCHITECTURE

NEW COURSE REQUESTS

ARC 5XXX History of Design Antiquity to Middle-Ages 3 credits
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.

ARC 5XXX Introduction to Design Theories 3 credits
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.

ARC 5XXX Materials and Methods of Construction 3 credits
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.

ARC 5XXX History of Design Renaissance to XIX Century 3 credits
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.

ARC 5XXX Structures and Systems 1 3 credits
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.

ARC 5XXX Structural Design 3 credits
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.

ARC 5XXX History of Design from the XIX Century to Present 3 credits
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 lecture.

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

LAA 3XXX GIS Applications in Landscape Modeling 3 credits
Introduction to modeling capabilities of GIS in the planning process addressing the natural and cultural characteristics of the landscape. Prerequisite: Program Approval.

LAA 3XXX Computer Practices in Landscape Architecture 1 3 credits
Computer application of drafting and design technologies used in landscape architecture. Prerequisite: Program Approval.

LAA 3XXX Theory of Planting Design 3 credits
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.

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

ARH 4XXX Spanish Art 3 credits
Explores the Art of Spain from 1492 through the early 20th century. Includes painting, sculpture and architecture.

ARH 5XXX Graduate Spanish Art 3 credits
Explores the Art of Spain from 1492 through the early 20th century. Painting, sculpture and architecture covered in slide lectures.

ASIAN STUDIES

NEW COURSE REQUESTS

ASN 4XXX Chinese Studies Pedagogy 3 credits
Introduction to Chinese language pedagody, providing knowledge and tools for teaching Chinese language and culture in a classroom, in a variety of pedagogical settings. Prerequisites: Permission of the instructor.

ASN 4XXX Zen and the Art of the Tea Ceremony II 3 credits
Theory, practice, aesthetics and cultural history of Chado, the Tea Ceremony of Zen Buddhism.

ASN 5XXX Zen and the Arts
Theory, practice, aesthetics and cultural history of Chado, the Tea Ceremony of Zen Buddhism.

BIOLOGICAL SCIENCES

COURSE CHANGE REQUESTS

MCB 3020 Credit hours change from 2 to 1

PCB 4023 Credit hours change from 4 to 3

CHEMISTRY AND BIOCHEMISTRY

NEW COURSE REQUESTS

CHM 4XXXL Biological Chemistry Lab II 1 credit
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.

EARTH SCIENCES

NEW COURSE REQUESTS

GLY 3XXX Earth through time 3 credits
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.

GLY 5XXX Planet Earth: Dynamic Earth 1 credit
Essentials of metamorphism, rock rheology, seismology, plate tectonics, plate boundaries, plate movement, continental rifting and evolution of mountain belts.

GLY 5XXX Planet Earth: Evolving Earth 1 credit
Essentials of lithostatigraphy, biostratigraphy, geologic time scale, modern sedimentological processes, sedimentary rocks, evolution extinction events, paleoenvironments and paleoclimates.

GLY 5XXX Planet Earth: Solid Earth 1 credit
Essentials of the formation and evolution of the crust mantle and core of the earth. Composition and physical properties. Generation of magmas, their geochemistry.

GLY 5XXX Planet Earth: South Florida 1 credit
Geology, water resources and geologic environments of South Florida.

MET 3XXX Meteorological Dynamics I 3 credits
A first course in the motions of the Earth's atmosphere. Topics include meteorological coordinates, atmospheric equestions of motion, circulation and vorticity, balanced flows, boundary-layers and friction, and atmospheric waves. Prerequisites: MAC 2312, PHY 2048.

ECOMONICS

NEW COURSE REQUESTS

ECO 3XXX Women, Men and Work in the USA 3 credits
Analyzes the performance of women in comparison to men in the US labor market.

ENVIRONMENTAL

NEW COURSE REQUESTS

EVR 4XXXL Restoration Ecology Laboratory 1 credit
Field analysis of topics and concepts covered in Restoration Ecology. Prerequisites: EVR 3013 or PCB 3043 or PERMISSION. Corequisite: EVR 4323.

EVR 6XXX GIS in water resources 3 credits
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.

EVS 4XXX Agroecology 3 credits
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.

EVS 4XXX Sustainable Agriculture 3 credits
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.

HISTORY

NEW COURSE REQUESTS

AFH 6XXX Research Seminar in African History-I 3 credits
Semester one of a two-semester research seminar investigating topics if African history. Topics may vary.

AFH 6XXX Research Seminar in African History-II 3 credits
Semester two of a two-semester research seminar investigating topics in African history. Topics may vary. Prerequisites: Research seminar in African History I.

AMH 6XXX 3 credits
Semester one of a two-year semester research seminar investigating topics in American history. Topics may vary.

AMH 6XXX Research Seminar in American History-II 3 credits
Semester two of a two-semester research seminar investigating topics in American history. Topics may vary. Prerequisites: Research Seminar in American History-I.

EUH 6XXX Research Seminar in European History-I 3 credits
Semester one a two-semester research seminar investigating topics in European history. Topics may vary.

EUH 6XXX Research Seminar in European History-II 3 credits
Semester two of a two-semester research seminar investigation topics in European history. Topics may vary. Prerequisites: Research Seminar in European History-I.

HIS 4XXX Archaeological Field Work 3-6 credits
Archaeological field work and hands-on instruction in modern excavation practices. Post-finds in the laboratory. Prerequisite: Permission of instructor.

LAH 6XXX Research Seminar in Latin American History-I 3 credits
Semester one a two-semester research seminar investigating topics in Latin American history. Topics may vary.

LAH 6XXX Research Seminar in European History-II 3 credits
Semester two of a two-semester research seminar investigation topics in Latin American history. Topics may vary. Prerequisites: Research Seminar in Latin American History-I.

WOH 5935 Topics in World History 3 credits
An examination of specific themes in World History. Topics will vary. With a change in theme, the course may be repeated. Prerequistites: Permission of instructor or Graduate standing.

WOH 6XXX Research Seminar in World History-I 3 credits
Semester one of a two-year semester research seminar investigating topics in World history. Topics may vary.

WOH 6XXX Research Seminar in World History-II 3 credits
Semester two of a two-semester research seminar investigating topics in world history. Topics may vary. Prerequisites: Research Seminar in World History-I.

LATIN AMERICAN AND CARIBBEAN CENTER

NEW COURSE REQUESTS

LAS 4XXX Argentinean Culture and Society 3 credits
Withdrawn 05/06/26 Argentinean society, its national process, challenges and failures through an interdisciplinary approach. Prerequisites: Permission of instructor.

LAS 5XXX Culture and Society in the Rio de la Plata 3 credits
Argentinean and Uruguayan societies through an interdisciplinary approach and a series of relevant texts. Prerequisites: Permission of instructor.

COURSE CHANGE REQUEST

LAS 6017 Delete

MATHEMATICS

NEW COURSE REQUEST

MHF 4XXX Topics in the history of Modern Mathematics 3 credits
Riemannian Geometry, Relativity, and other topics at discretion of instructor. Prerequisites: MAC 2313, MAS 3105.

MODERN LANGUAGES

NEW COURSE REQUEST

CHI 3XXX Intermediate Chinese II 3 credits
To improve student's speaking, writing, listening, reading skills in Chinese. Students learn how to use useful expressions of experience and thought. Prerequisites: CHI 3210-Intermediate Chinese I.

COURSE CHANGE REQUEST

CHI 3440 No prerequisites

PHYSICS

NEW COURSE REQUEST

PHY 1XXX First year Physics Seminar 1 credit
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.

PHY 3XXX Methods in Theoretical Physics 3 credits
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.

POLITICAL SCIENCE

NEW COURSE REQUEST

POS 4XXX Analytic Writing 3 credits
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.

POS 4XXX Florida Politics 3 credits
Provides analysis of the state and county politics of Florida. Special emphasis is placed on the regionalism inherent to politics in the state.

POS 4XXX Politics of Voting Rights 3 credits
Analyzes the development of the right to vote in the United States. Major emphasis is on Supreme Court decisions and federal laws.

POS 5XXX Writing Professionally in Political Science 3 credits
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.

PSYCHOLOGY

NEW COURSE REQUEST

EAB 6XXX Applications of Verbal Behavior for Autism and Asperger Syndrome 3 credits
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.

EAB 6XXX Behavioral Technologies 3 credits
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.

EAB 6XXX Ethical Code in Behavior Analysis 3 credits
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.

COURSE 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 3 credits
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.

REL 4XXX Jews of Arab Lands in the Middle Ages 3 credits
An examination of Jewish culture from the rise of Islam in the 7th century to the end of the Middle Ages.

REL 4XXX Jewish Sephardic Thought 3 credits
The main Sephardic and Oriental thinkers. Includes philosophers rabbinics.

REL 4XXX Latinas & Religion in the Americas 3 credits
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.

REL 4XXX Peace, War and Kabbalah 3 credits
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.

REL 4XXX Voice of the Prophet 3 credits
Familiarizes students with the position and history of prophetic traditions (Hadith) in Islam.

REL 5XXX Jews and Muslims in the Middle Ages 3 credits

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.

REL 5XXX Jewish Thought and Thinkers 3 credits
The main Sephardic and oriental thinkers since the Middle Ages. Includes philosophers, rabbinics.

REL 5XXX Latinas & Religion in the Americas 3 credits
Review the practices, beliefs, social and political activism, and theological and biblical reflections of Latinas in the Americas from a historical perspective to modern day.

REL 5XXX Voice of the Prophet 3 credits
Familiarizes students with the position and history of prophetic traditions (Hadith) in Islam.

Withdrawn 05/06.26

REL 6XXX Mysticism in World Religions 3 credits
Surveys mystical traditions in world religions, both descriptions of practices and mystical texts held sacred by religious communities. Prerequisites: Graduate standing.

REL 6XXX Religion, Sex and Sex Education 3 credits
A survey of current biological scientific data on sex, the historical laws and teachings of religion on sexuality, and discussion of what is and what should be. Included in elementary sex ed courses according to both scientists and religious experts. Prerequisites: Graduate standing.

REL 6XXX Sciences, Religion and Education 3 credits
Examines a variety of current controversies over science from religious perspectives from evolution to genetic intervention in humanity. Prerequisites: Graduate standing.

SCHOOL OF MUSIC

NEW COURSE REQUEST

MUL 4XXX Keyboard Literature II 3 credits
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.

MUL 5XXX Graduate Keyboard Literature II 3 credits
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.

COURSE CHANGE REQUESTS

MUL 4400 New title: Keyboard Literature I
New course number: MUL 4XXX
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.

MUL 5405 New title: Keyboard Literature I
New course number: MUL 5XXX
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.

SOCIOLOGY/ANTHROPOLOGY

NEW COURSE REQUEST

ANG 6XXX Diasporas, Migration & Globalization 3 credits
Examines a variety of theories of "Biaspora" that have proliferated during the last few decades, as the concept relates to processes of transnational migration and globalization.

SYG 4XXX Depiction of Jews in Films 3 credits
A comparison of films about Jewish communities from different parts of the world to analyze how Jewish communities interact with different societies.

THEATRE AND DANCE

NEW COURSE REQUEST

DAN 2XXX Sound and accompaniment for Dance 3 credits
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.

DAN 3XXX Methods in Teaching Dance 3 credits
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.

TPA 3XXX Scene Painting 3 credits
A hands-on study of the basic techniques and processes used by scenic artists.

TPP 3XXX Introduction to Acting for Film/TV 3 credits
An introduction to the fundamentals of acting/ directing for TV/film. Through practical exercises and creative assignments.

COURSE CHANGE REQUESTS

TPP 4XXX Delete

COLLEGE OF BUSINESS

MARKETING

COURSE CHANGE REQUESTS

MAR 4503 Change of prerequisites: NO PRE-REQUISITE

COLLEGE OF EDUCATION

CURRICULUM & INSTRUCTION

NEW COURSE REQUESTS

EEC 3XXX Special Needs of Children and their Families 3 credits
Focus on understanding family problems, children's behavior and intervention methods.

EME 5XXX Digital Video in the Classroom 3 credits
Hands-on digital video techniques and practices for integration into classroom applications. Designed for teachers who wish to use digital video in classroom settings.

SSE 5385 Special Teaching Laboratory: Social Studies 3 credits
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

SPS 7XXX Psychopathology: Assessment & Intervention in the Schools 3 credits
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 I 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

SPS 7XXX Neuropsychological Issues in School Psychology 3 credits
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

PET 4XXX Clinical Education I 3 credits
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.

PET 4XXX Therapeutic Modalities 4 credits
Introduction to basic principles of theory and application of various modalities encountered in athletic raining practice and to apply the basic principles in the laboratory setting. Co-requisites: PET 4XXX- Clinical Education I.

PET 4XXX Orthopedic Assessment I- Lower Extremity **4 credits**
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

BME 7XXX Doctoral Biomedical Engineering Seminar 0 credits
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 ENVIREMENTAL ENGINEERING

NEW COURSE REQUESTS

ENV 4XXX Environmental Engineering Senior Design Project 3 credits
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 4551, CWR 3103.

ENV 4XXXL Environmental Laboratory II 1 credit
Laboratory experiments on applications of environmental engineering concepts related with air, water, land, and environmental health date collection, analysis and interpretation. Prerequisites: ENV 3001L, CWR 3201L, and permission of the instructor.

TTE 5XXX 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. Prorequisites: 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 intrapraneuring 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

COMMUNICATONS 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 5403 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 Argumentative 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 6565 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, ect. 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 PUR4100 (Supplies fee assessed)

COLLEGE OF ARTS AND SCIENCES – DEPARTMENT OF CHEMISTRY
PREREQUISITE CHANGES

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 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: CHM 2211, CHM 3120, BSC 1011 or permission of the instructor. Corequisites: A semester of physical chemistry. Lecture is corequisite for lab.	**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, CHM 2211L, CHM 3410, and CHM 3411L.	**CHM 4320L Research Techniques in Organic Chemistry (2).** Prerequisites: CHM 3120, CHM 2211, 2211L, CHM 3410, and CHM 3410L.
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 3510C Forensic Evidence (3).** Cannot be used as an elective for chemistry major.
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 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: CHM 3120, 3120L, CHM 2211, 2211L, 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: None	**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) Prerequisites: 16 semester hours of science	**ISC 4041 Scientific Literature (1)** [None]