Agenda Item #14-32

Effective Fall 2015

EASTERN ILLINOIS UNIVERSITY

M e m o r a n d u m

COLLEGE OF SCIENCES
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TO: Dr. Michael Menze, Chair
FROM: Dr. W. Harold Ornes, Dean
DATE: October 17, 2014
RE: New Dual Degree MS Program approved at College of Sciences Curriculum Committee Meeting of October 3, 2014

The following proposal for a dual Master's Degree in Sustainable Energy and the Professional Science Master's in Geographic Information Sciences was approved (unanimous) by the College of Sciences Curriculum Committee at their last meeting.

The dual Master's Degree between the Professional Science Master's in Geographic Information Sciences (GISci) and the Master of Science (MS) in Sustainable Energy is an excellent blending of two programs because of their shared focus in preparing students in applied science and technology with a management focus. The GISci curriculum already has 9 of the 12 credits of shared semester hours in existing course work and would require the addition of one 3 credit course, CERE 5983, Sustainability Practicum, to the existing GISci curriculum. This would make it relatively easy for students to be able to fulfill the requirements of both degree programs. No new courses need be developed and no changes to the course offerings or faculty workloads are foreseen. In addition, it meets all the requirements and restrictions for a dual-degree program.

I therefore request that the Council on Graduate Studies add the attached proposal to their agenda for consideration.

Proposal for Dual Master's Degree between MS in Sustainable Energy and the Professional Science Master's in Geographic Information Sciences

Proposal submitted to: Dean Augustine
Proposal submitted by: Drs. Karen Gaines and Mike Cornebise, co-Directors of PSM in GISci
Cc: Dr. Peter Liu
Submission Date: 8/28/2014
Effective Date: Fall 2015
Date of PSM/GISci Approval: 9/8/2014
Date of Sustainable Energy Approval: 9/8/2014
Date of COSCC Approval: 10/3/14
Date of CGS Approval:

Academic units may seek approval to create a dual Master's Degree program by combining any of these degree programs enabling graduate candidates to earn two degrees concurrently leading to two different degree designations on the transcript and two separate diplomas. The mission of a dual master's degree program is to allow graduate candidates to pursue complementary programs of graduate study simultaneously. The curriculum in each approved program includes a minimum number of semester hours of study unique to each individual degree and a maximum number of semester hours that the two degree programs share. Dual master's degree programs are approved by the Council on Graduate Studies and are identified as graduate study options in each of the academic units that provides courses for the dual degree program. Individualized dual degree programs are not offered. Candidates who seek a dual degree program of study must be eligible for admission to each individual program and must retain an acceptable scholarly record in each program to successfully earn each degree.

We propose a dual Master's Degree between the Professional Science Master's in Geographic Information Sciences (GISci) and the Master of Science (MS) in Sustainable Energy because of their shared focus in preparing students in applied science and technology with a management focus. **Our curriculum already has the 12 credits of potential shared semester hours** in either existing course work (highlighted in yellow) or additions to the existing GISci curriculum (highlighted in green – that would have to be approved by the GISci curriculum committee) for students to be able to fulfill both requirements.

Requirements

- **Total Semester Hours**: A minimum of 48 semester hours of study is required for all dual-degree programs. A minimum of 18 semester hours of study is required in each of the two degree programs. A maximum of 12 semester hours may be shared between the two programs. This requirement may not be waived or appealed.

- **Residency Semester Hours**: A minimum of 36 semester hours of the 48 hours is required in residence. Residence is defined as credit for courses taught by Eastern Illinois University faculty at on-campus or off-campus sites. This requirement may not be waived or appealed.
- **5000 Level Semester Hours**: A minimum of 36 semester hours of the 48 semester hours must be in courses numbered 5000 or higher.

Restrictions

- **Research, Internship and Special Course Restrictions**: A minimum of 36 semester hours of the 48 hours must be completed in courses exclusive of independent study, research, thesis, internship, and special courses.
- **4750-4999 Hour Restrictions**: A maximum of 12 semester hours of courses numbered 4750 to 4999 may be applied to degree programs.
- **Research Hour Restrictions:** A maximum of six semester hours of independent study may be applied to each degree. A maximum of six semester hours of research may be applied to each degree. A maximum of six semester hours of thesis may be applied to each degree. A maximum of nine semester hours in a combination of independent study, research, or thesis may be applied to each degree.
- **Provisional and Non-degree Hour Restrictions**: A maximum of 12 semester hours earned as a provisional or non-degree student may be applied to a dual degree program. There is no guarantee that any credit earned as a provisional or non-degree student may later apply to a degree.

REQUIRED COURSES FOR PSM IN GISci:
GEG 5810 - Geographic Information Systems I (2-2-3)
GEG 5820 - Remote Sensing I (2-2-3)
GEG 5860 - Geographic Information Systems II (2-2-3)
MBA 5010 - Accounting from a Management Perspective. (3-0-3) **OR** MBA 5001 - Business Operations in Sustainable Energy Facilities (3-0-3)
MBA 5680 – Organizational Behavior and Group Dynamics. (3-0-3)

ELECTIVE SET 1: STATISTICS REQUIREMENT (minimum 3 credits)
BIO 4750 - Biometrics. (2-2-3)
BIO 4820 - Spatial Analysis for Environmental Sciences (3-3-4)
BIO 5381 - Advanced Biostatistics. (3-0-3)

ELECTIVE SET 2: CONCENTRATION REQUIREMENT (minimum 11 credits)
BIO 4820 - Spatial Analysis for Environmental Sciences (3-3-4)
BIO 4840 - Resource Management and Environmental Assessment (2-3-3)
BIO 5380 - Landscape Ecology. (2-3-3)
GEG 5830 - GIS: Building Geodatabases. (2-3-3)
GEG 5850 – GPS: Mapping the Modern Way (2-3-3)

GEG 5870 – Remote Sensing II. (2–3–3)
PLS 5843 – Seminar in Public Policy. (3–0–3)
OR
ECN 5411 – Seminar in Natural Resource and Environmental Economics. (3–0–3)

Required Experiential Component: INTERNSHIP (Up to 6 credits)
BIO 5980 – Graduate Internship in Biological Sciences. (Arr.–Arr.6) (Credit/No Credit)
ECN 5980 – Internship in Economics. (Arr.–Arr.–1 to 3) (Credit/No Credit)
GEG 5980 – Geography Internship. (Arr.–Arr.–1–6)
PLS 5980 – Administrative Internship. (Arr.–Arr.–1 or 2 or 3) (Credit/No Credit)
TEC 5980 – Industrial Internship in the Technologies. (Arr.–Arr.–1 to 10) (Credit/No Credit)
CERE 5983 – Sustainability Practicum (0–3–3)

CAPSTONE COMPONENT

The capstone component for the Professional Science Master's in GISci at Eastern Illinois University (EIU) integrates the practical application of scientific and professional knowledge. Our PSM capstone experience is a team–oriented, multidisciplinary research project addressing issues and opportunities in the workforce. Our curriculum is focused on hypothesis driven science with applied endpoints. Equipped with this foundation coursework and technical training, the student will be ready to enter the workforce and complete their capstone experience that will focus on the internship. The student, in consultation with their project committee (consisting of at least 3 EIU faculty and their workforce sponsor), takes between 3–6 credit hours of internship credit. The internship must identify a problem and be a project focused on an application or solution that integrates working in a team with individual deliverables. We believe that a Dual Degree student ***could*** use CERE 5983 – Sustainability Practicum as their capstone experience ***IF*** it included a GISci component. Such a component could be the examination of transportation infrastructure for fuel processing for the Renewable Energy Center, or the examination of piping and other utilities to the Renewable Energy Center. The student, would have to compile a study committee that would include at least 1 faculty who is a member of both the MS in Sustainable Energy's and the PSM in GISci graduate program.

FINAL PROPOSED DEGREE STRUCTURE:

A) Degree Requirements Potentially Shared Coursework: The following courses may be applied to each degree program: • MBA 5680 3cr (Organizational Behavior & Group Dynamics) • MBA 5010 3cr (Accounting from a Management Perspective) **or** MBA 5001 3cr (Business Operations in Sustainable Energy Facilities) • CERE 5983 3cr (as approved by PSM Coordinators) • PLS 5843 3cr (Seminar in Public Policy) **or** ECN 5411 3cr (Seminar in Natural Resource and Environmental Economics).

Total Shared: 12 allowable

B) Coursework unique to PSM in GISci: Please see above. Students must take all required courses in the PSM with 12 allowable to overlap as described in "A) Degree Requirements Potentially Shared Coursework" above. **Total Credits: 20** (9cr from Core Courses, 3cr from elective set 1, 8cr from elective set 2).

C) Coursework unique to MS in Sustainable Energy: Students must take all required courses in the MS in Sustainable Energy with 12 allowable to overlap as described in "A) Degree Requirements Potentially Shared Coursework" above. The following courses are required for the MS in Sustainable Energy that cannot count in the shared coursework category • BIO 5333 3cr (Bio-energy and Bio-resources) • CHM 5007 3cr (Energy Chemistry) • PHY 5233 3cr (Energy and the Environment) • TEC 5533 3cr (Biomass Gasification) • COM/ENG 5260 3cr (Communication/Writing) • CERE 5953 3cr (Research in Sustainable Energy). **Total Credits: 18**

Total hours required in the PSM/ MS in Sustainable Energy Dual Degree Program (50): Shared hours 12 • PSM in GISci hours 20 • MS in Sustainable Energy hours 18.