CGS Agenda Item: 11-48
Effective: Fall 2012

Master of Science in Sustainable Energy

Catalog Description

Center for Clean Energy Research and Education (CENCERE)
Eastern Illinois University

Degree: Master of Science

Major: Sustainable Energy

Peter Ping Liu, Ph D, PE, OCP, CQE and CSTM, Director
Phone: 217-581-6267
Email: pliu@eiu.edu
Web: www.eiu.edu/energy/graduate.php

Graduate Faculty:

Peter Ping Liu, Director, Center for Clean Energy Research and Education

Ashley, J.; Borzi, M.; Canam, T.; Cornebise, M.; Daniels, S. ; Fredrick, T. ; Gaines, K.; Ghent, L.; Hendrickson, R.; Hoerschelmann, O.; Janssen, C.; Laingen, C.; Liu, P.; McGuire, M.; Noll, C.; Periyannan, G.; Ringuette, D.; Sheeran, D.; Upadhyay, M.; Wang, Z.; Willems, J.

Contributing Departments/Schools:

- Department of Biological Sciences
- Department of Chemistry
- Department of Communication Studies
- Department of Economics
- Department of English
- Department of Geology/Geography
- Department of Physics
- Department of Political Science
- School of Business
- School of Technology

Program Vision:

The Master of Science in Sustainable Energy graduate degree program focuses on preparing leaders for the entire energy industry. The degree is science based and technology management focused.

Program Mission:

The purpose of the Master of Science in Sustainable Energy degree program is to empower and enable students to develop advanced knowledge and skills in order to become leaders and managers in the energy industry. Specifically,

- Students will have a solid understanding of the sciences and technology related to energy production, conversion, utilization and conservation.
- Students will understand the economic, environmental and policy impact of a sustainable energy practice for a sustainable society.
- Students will develop the research and communication abilities to be effective leaders in the energy industry.

Admission Requirements:

To be eligible for degree candidacy, applicants must meet all of the requirements for admission to the Graduate School (see "Admission to Degree and Certificate Programs"). In addition to the published university graduate degree status requirements, the Center for Clean Energy Research and Education (CENCERE) requires that applicants demonstrate the following:

- A bachelor's degree from an accredited institution
- A minimum undergraduate GPA of 2.75
- Submission of a GRE or GMAT score
- Relevant experience and desire to work in energy industry
- For international students, an acceptable English proficiency established by the university.

Provisionally admitted students may be required to complete course work in related fields to meet admission requirements established by the Program Advisory Board.

Degree Audit:

The graduate plan of study is the EIU Degree Audit, which is generated automatically in the Degree Audit Reporting System (DARS) at the time of degree candidacy. Modifications of the standard EIU Degree Audit are submitted by the director to the certification officer in the Graduate School at the time modifications are approved. The Degree Audit serves as an unofficial summary of requirements for the program. Degree candidates are advised to review the comprehensive summary of the Degree Audit process specified on the "Requirements for All Degree and Certificate Candidates" section of the *Graduate Catalog*. Individual programs may require candidates to submit plans of study in addition to the Degree Audit, candidates should consult with the program director.

Degree Requirements:

Degree requirements include those outlined for the master's degree by the Graduate School (see "Requirements for the Master's Degree").

Students are required to complete the followings courses, to be eligible for the degree:

Science Cluster		
1. BIO 5333 Bioenergy and Bioresources (option for BIO and CHM majors)	1. BIO 5??? Environmental Sustainability (option for non-BIO majors)	3 hours
2. CHM 5007 Energy Chemistry		3 hours
3. PHY 5233 Energy and the Environment		3 hours
4. TEC 5533 Biomass Gasification		3 hours
Technology Management Cluster		
5. TEC 5103 Science and Technology of Leadership	5. MBA 5680 Organizational Behavior and Group Dynamics	3 hours
6. TEC 5133 Total Quality Systems	6. MBA 5660 Operations Management	3 hours
7. MBA 5001 Business Operations in Sustainable Energy Facilities		3 hours
Policy and Economics		
8. PLS 5843 Seminar in Public Policy	8. ECN 5411 Seminar in Natural Resources and Environmental Economics	3 hours
Research Methods		

9. TEC 5143 Research in Technology	3 hours
Communication	
10. CMN/ENG 5260 Communication in Science and Technical Organizations	3 hours
Research and Experience	
11. CERE 5983 Sustainability Practicum	3 hours
12. CERE 5953 Sustainable Energy Research	3 hours
Total	36 hours

Certification of Comprehensive Knowledge: All students are required to successfully pass a written comprehensive examination prior to the completion of the graduate degree.

The following flexibilities may apply:

Students from a specific area may elect to take a more advanced course in the discipline in place of the above course(s). For example, a student with a bachelor degree in chemistry may elect to take a more advanced course from the department of chemistry to substitute the above "Energy Chemistry" course. Prior approval from the program director is required.

On the same level, students may elect to take either course. For example, a student may take "PLS 5843 Topical Seminar in Public Policy" or "ECN 5411 Seminar in Natural Resources and Environmental Economics," to meet the degree requirement.

TEC 5143 Research in Technology may be replaced by an equivalent research methods course from other participating departments/schools. Prior approval from the program director is required.

Dual Degree Credits:

To help students become more marketable and more valuable to their prospective employers, courses taken for the Master of Science in Sustainable Energy may serve as dual credits for

another degree from any participating department. This option offers an opportunity for a student to receive dual Master degrees at Eastern Illinois University.

Courses for the Master of Science in Sustainable Energy degree may be taken by students of participating departments, as elective or required courses. Applicability of those courses of Master of Science in Sustainable Energy to any graduate program of a participating department is determined by the participating department. Students are advised to seek approval from their home departments, prior to take the courses.

If a student has taken one of the above courses during his/her graduate study in a participating department, s/he has already fulfilled the partial requirement for the Master of Science in Sustainable Energy degree. For example, if a student from MBA program has taken the course of "MBA 5680 Organizational Behavior and Group Dynamics," s/he will be only required to complete remaining 33 hours to be eligible for the Master of Science in Sustainable Energy degree.

Graduated international students from a participating department will be allowed to come back to complete the Master of Science in Sustainable Energy degree.

The dual degree credits only apply to the above specific courses required by the degree of Master of Science in Sustainable Energy. Other courses are subject to further approvals by both the participating department and this Sustainable Energy program.

Transfer Credits:

Courses taken at other institutions will be reviewed by the director to determine if they can be transferred to the Master of Science in Sustainable Energy degree program, based upon the policies regarding Previously Earned Credit outlined in the *Graduate Catalog.* CERE 5983 Sustainability Practicum" and " CERE 5953 Sustainable Energy Research" will not be replaced by any transfer credits.

APPROVALS

Date approved by the Center for Clean Energy Research and Education: November 14, 2011

Date approved by the college curriculum committee: N/A

Date approved by the Honors Council *(if this is an honors course): N/A*

Date approved by CAA: **CGS:** Feb. 17, 2012