
Proposal to the Senate Educational Policy Committee

PROPOSAL TITLE: Establish an online program code for the Master in Engineering in Electrical and Computer Engineering Degree in the College of Engineering

SPONSOR: Wen-Mei Hwu, Acting Department Head of Electrical and Computer Engineering, 217-244-8270, w-hwu@illinois.edu.

COLLEGE CONTACT: Harry Dankowicz, Associate Dean for Graduate, Professional and Online Programs, 217-244-1231, danko@illinois.edu

BRIEF DESCRIPTION:

The Department of Electrical and Computer Engineering (ECE) seeks to establish an online program code for the Master in Engineering in Electrical and Computer Engineering degree program. There are no curriculum changes to the program. The same degree offered on campus will be offered online. The online program will offer a subset of on-campus courses that will allow online students to successfully complete the degree requirements. All core courses, as well as a sufficient selection of elective courses, will be offered online. Each academic year, ECE will publish the complete list of online courses on the MEng Program website for students to reference. In addition, students are able to complete other non-ECE engineering online courses, which can be used toward fulfilling elective requirements. These courses are listed on the College of Engineering Online Programs website. Students who are enrolled in the online program code for this degree will not be required to come to campus, as all requirements can be completed online.

JUSTIFICATION:

The decision to offer the Master of Engineering in Electrical and Computer Engineering (ECE) in an online delivery format has been considered and approved by the ECE Faculty in order to provide broader access for students interested in this degree. The online delivery format will allow working professionals to complete this degree entirely online on a part-time basis without having to leave their current job or community. The department's goal is to have an initial enrollment of 15 to 25 students in the first two years and grow it to a steady state of 75 students over the next five years.

Students who are admitted into this program will receive support from ECE's designated Academic Advisor, who is already working with MEng in ECE on-campus students. Additional support for students and faculty will be provided by the staff in the existing College of Engineering Center for Professional and Executive Training and Education and the College of Engineering Office of Online and Professional Engineering Programs, both overseen by the Associate Dean for Graduate, Professional and Online Programs.

Such support includes help with the different components of the online program, e.g., course registration, the tuition payment process, how to access online course materials, course examination and proctoring, and how to connect with the faculty and TA assigned to each course. In addition to general program advising, the advisor will also reach out to the students throughout the semester to answer questions and concerns as they arise. The Center for Professional and Executive Training and Education will provide additional support by facilitating professional development initiatives, which will be available online, and communicating upcoming deadlines and opportunities.

ECE administrators will work with faculty to develop a schedule of the courses to be offered online on a consistent basis within existing capacity. The faculty member teaching the on-campus section will also teach the online section. Each online section will be assigned at least one Teaching Assistant.

The Office of Online and Professional Engineering Programs provides all departments in the college the support needed to offer online degree programs. Services include help with setting up online course sections, coordination of student exams and exam proctors, and students' access to view the lectures on the Echo 360 or Kaltura system. This office works with faculty to provide training in instructional technology for online courses and to capture their lectures either live or through individual studio capture. The Office also coordinates and funds upgrades of existing classrooms to be equipped with the technologies needed for lecture capture, including necessary investments in recording equipment, wireless services, tablets, and other relevant technologies, e.g., 360 cameras to be used in labs, learning management systems, web conferencing tools for live discussions, and other high-end camera equipment.

BUDGETARY AND STAFF IMPLICATIONS:

1) Resources

- a. How does the unit intend to financially support this proposal?

No new resources needed.

- b. How will the unit create capacity or surplus to appropriately resource this program? If applicable, what functions or programs will the unit no longer support to create capacity?

Sufficient capacity exists for faculty to do this teaching, including discussion and answering questions from students.

- c. Will the unit need to seek campus or other external resources? If so, please provide a summary of the sources and an indication of the approved support.

No, the unit will not seek campus or other external resources as no new resources are needed.

- d. Please provide a letter of acknowledgment from the college that outlines the financial arrangements for the proposed program.

None needed.

2) Resource Implications

- a. Please address the impact on faculty resources including the changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.

The anticipated class size of the online section will be between 10 and 25 students. This is the typical online class size in the College of Engineering. The online course is the same course that is being taught on campus for the semester. Both on campus and online students will complete the same homework, quizzes, and exams for the course. The learning outcomes are the same in both the on campus and online sections, as students are completing the same requirements for the course.

An on-campus student may complete the Graduate College petition to change to the online program code and finish their master's degree remotely, pending department approval. Students will have the option to either apply to the online or on campus program code when they complete their admission application.

- b. Please address the impact on course enrollment in other units and provide an explanation of discussions with representatives of those units.

No impact on enrollment in other units.

- c. Please address the impact on the University Library.

Please see attached letter from the Library when the degree program was originally established, as there are no changes being requested to the curriculum. In addition, online students do not utilize the library in the same fashion as on-campus students, and therefore, do not pay the same library fees as on-campus students.

- d. Please address the impact on technology and space (e.g. computer use, laboratory use, equipment, etc.)

There is no impact on technology and space.

For new degree programs only:

- 3) Briefly describe how this program will support the University's mission, focus, and/or current priorities. Include specific objectives and measurable outcomes that demonstrate the program's consistency with and centrality to that mission.

Please note that this is not a new degree program; it is a new delivery mode of an existing degree program. That said, the learning outcomes will be assessed for each required course and compared with the face-to-face course sections.

- 4) Please provide an analysis of the market demand for this degree program. What market indicators are driving this proposal? What type of employment outlook should these graduates expect? What resources will be provided to assist students with job

placement?

Please note that this is not a new degree program; therefore, this information is not required.

- 5) If this is a proposed graduate program, please discuss the programs intended use of waivers. If the program is dependent on waivers, how will the unit compensate for lost tuition revenue?

This is not applicable because 1) this question is required for new degree programs only and this is not a new degree program but rather a new delivery mode of an existing degree program and 2) as is the case with all MEng programs, the online delivery mode of the MEng in ECE is self-supporting and not waiver eligible.

DESIRED EFFECTIVE DATE: Fall 2019

STATEMENT FOR PROGRAMS OF STUDY CATALOG:

The current Program of Study, which is outlined below, will not have changes other than the addition of a note that the program is available online, as indicated using track changes.

In addition, an “Online” tab will be added to the ECE Catalog page. The text on this tab will state “The degree requirements are the same as the on-campus MEng” (with hyperlink taking users back to the MEng requirements – the page that is referenced below.)

Also, this program will be added to the Catalog’s listing of Online and Site-Based Graduate Programs, <http://catalog.illinois.edu/graduate/online-programs/>.

<http://ece.illinois.edu>

Head of the Department: Wen-mei Hwu (Acting Head)

Director of Graduate Studies: Michael Oelze

Graduate Programs

2120 Electrical and Computer Engineering Building

306 N. Wright St.

Urbana, IL 61801

(217) 300-2414

Email: ece-grad-apps@illinois.edu

Major: Electrical and Computer Engineering

Degrees Offered: M.Eng., M.S., Ph.D.

[Online Program: Electrical and Computer Engineering, M.Eng.](#)

Graduate Degree Programs

The department offers graduate study and research in electrical and computer engineering leading to the degrees of Master of Engineering, Master of Science, and Doctor of Philosophy. Virtually every specialty within electrical and computer engineering is represented. Courses and research opportunities exist in the following areas:

- applied computation theory
- bioengineering, acoustics, and magnetic resonance engineering
- communications
- computer-aided design and test

- computer systems
- computer vision and robotics
- decision and control
- electromagnetic fields
- electrooptics, lasers, and plasmas
- integrated circuits
- microelectro-mechanical systems
- mobile computing and communication
- optoelectronics
- power and energy systems
- power electronics
- remote sensing and propagation
- semiconductor materials and devices
- semiconductor physics and computational electronics
- signal, image, and speech processing

The Master of Engineering degree in ECE is designed for students having a B.S. degree in ECE or a related field and offers an opportunity to broaden knowledge of areas in ECE beyond what is possible in a four-year undergraduate curriculum. The M.Eng. is a professional degree and is not intended for students interested in obtaining research experience. Students interested in a research-oriented career and all students interested in obtaining a Ph.D. should instead apply to the traditional M.S. program.

The programs are very flexible to encourage interdisciplinary studies and research. Opportunity also exists for specializing in:

1. computational science and engineering via the [Computational Science and Engineering \(CSE\)](#) transcriptable Concentration
2. energy and sustainability engineering via the [Energy and Sustainability Engineering \(EaSE\) Option](#).

Admission

Applicants must have completed an electrical engineering curriculum or a computer engineering curriculum substantially equivalent to those of the University of Illinois at Urbana-Champaign. A minimum grade point average of 3.00 (A = 4.00) for the last two years of undergraduate study is required. However, because of space limitations, applicants with GPAs below 3.50 are rarely admitted. All applicants must submit scores from the general test of the [Graduate Record Examination \(GRE\)](#).

A master's degree is required for admission to the PhD program. Applicants with master's degrees are admitted only if a faculty member is willing to serve as the Ph.D. thesis advisor. Accordingly, such applicants should write, call, or e-mail prospective Ph.D. advisors and discuss their research interests and potential Ph.D. thesis topics well in advance of application deadlines. Admission for the spring semester is possible, in addition to the usual fall semester admissions.

Graduates of curricula in the physical sciences, mathematics, and computer science may be admitted if they are judged to have the necessary background to profit from graduate work in electrical and computer engineering.

All applicants whose native language is not English must submit a minimum [TOEFL](#) score of 96 (iBT), 243 (CBT), or 590 (PBT); or minimum [International English Language Testing System \(IELTS\)](#) academic exam scores of 6.5 overall and 6.0 in all subsections. Applicants may be exempt from the TOEFL if [certain criteria](#) are met. For those taking the TOEFL or IELTS, [full admission status](#) is granted for scores greater than 102 (TOEFL iBT), 253 (TOEFL CBT), 610 (TOEFL PBT), or 6.5 (IELTS). [Limited status](#) is granted for lesser scores and requires enrollment in [English as a Second Language \(ESL\) courses](#) based on an ESL Placement Test (EPT) taken upon arrival to campus.

Faculty Research Interests

Research interests of the Electrical and Computer Engineering faculty include the broad areas of study described in the graduate programs section and more. Many faculty members hold affiliate status with other departments, and a number of faculty members from other departments hold affiliate status with the department. In addition,

some faculty hold appointments in the Beckman Institute for Advanced Science and Technology, the Coordinated Science Laboratory, the Materials Research Laboratory, and the Micro and Nanotechnology Laboratory. All these affiliations provide opportunities for graduate student appointments to conduct research. For a detailed list of current research interests of the faculty, visit the department's [research Web site](#).

Centers, Programs, and Institutes

There are numerous interdisciplinary programs, laboratories, and centers for research within the department. These are described at the department's [research Web site](#).

Financial Aid

Fellowships, research assistantships, and teaching assistantships (all of which include tuition and partial fee waivers) are available for the majority of students who are admitted to the M.S. and Ph.D. programs. International applicants generally are not awarded teaching assistantships but are eligible for the other forms of financial aid. All applicants, regardless of U.S. citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate [spoken English language proficiency](#) by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT or 8 on the speaking subsection of the IELTS. For students who are unable to take the iBT or IELTS, a minimum score of 5 is required on the [EPI test](#), offered on campus. All new teaching assistants are required to participate in the [Graduate Academy for College Teaching](#) conducted prior to the start of the semester.

[For tuition information and external funding resources, please visit the department's graduate program website. Students in the ECE major for the M.Eng. degree are not eligible for BOT tuition waivers.](#)

Online Tab Content

[The degree requirements are the same as for the on-campus M.Eng. \(hperlink to <http://catalog.illinois.edu/graduate/graduate-majors/ece/me-ece/>\).](#)

Electrical and Computer Engineering, M.Eng.

Required Courses:	Required Hours
ECE 500 -registration (0 hours) every term while in residence	0
500-level courses, including 8 hours of ECE 500 -level courses and up to 4 hours of non- ECE 500 -level courses (subject to Other Requirements and Conditions below)	12
Professional Development: ECE 596 Master's Project supervised by ECE (or affiliate) graduate faculty or course(s) in leadership, entrepreneurship, or other business-related topic approved by ECE Director of Graduate Studies	4
Elective courses (subject to Other Requirements and Conditions below)	16
Total credit hours for the degree	32
Grad Degree Requirements	

Footnotes

["In residence" for the online delivery mode refers to while enrolled in the program. The online delivery mode does not require any travel to/physical residence on campus.](#)

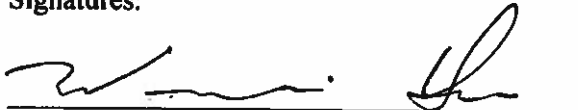
Other Requirements and Conditions (may overlap)¹

Requirement	Description
	A minimum of 12 credit hours of coursework at the 500-level must be applied toward the degree, including at least 8 hours of ECE coursework. Up to 4 hours of ECE 596 and/or ECE 597 (or other individual study) may be applied toward this degree requirement. Up to 4 hours of non- ECE 500 -level course(s) from approved list or


Requirement	Description
as approved by the ECE Director of Graduate Studies may be applied toward this degree requirement.	
Coursework must include at least 18 credit hours of ECE courses; 15 of these hours must be from no more than 3 different focus areas. The ECE Graduate Committee maintains the focus area course lists.	
Credit in ECE 415 , 445 , 590 , PHYS 404 , 405 , 435 , 436 , and STAT 400 do not count toward the degree.	
No course used to fulfill any degree requirement may be taken using the "Credit/No Credit" option.	
This degree option is non-thesis only.	
Minimum program GPA:	3.0
Grad Other Degree Requirements	
¹ <i>For additional details and requirements refer to the department's Graduate Study Manual and the Graduate College Handbook.</i>	
For tuition information and external funding resources, please visit the department's graduate program website . Students in the ECE major for the M.Eng. degree are not eligible for BOT tuition waivers.	

CLEARANCES: (Clearances should include signatures and dates of approval. These signatures must appear on a separate sheet. If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)

Signatures:


Unit Representative:

2/11/2019
Date:


Co

2/11/2019
Date:


Graduate College Representative:

2/22/19
Date:

Council on Teacher Education Representative:

Date:

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

University Library
Office of Dean of Libraries
and University Librarian
230 Main Library, MC-522
1408 West Gregory Drive
Urbana, IL 61801



March 24, 2014

William G. Buttlar
Associate Dean
Office of Graduate and Professional Programs
College of Engineering
306 Engineering Hall
M/C 704

Dear Dean Buttlar:

Thank you for providing the University Library with the opportunity to review the College of Engineering's proposals to the Senate Committee on Educational Policy to:

- Establish a combined Bachelor of Science - Master of Engineering Degree in the Department of Electrical and Computer Engineering
- Establish a Major in Electrical and Computer Engineering in the Department of Electrical and Computer Engineering for the Master of Engineering degree.

Based upon the two proposals that we reviewed, we do not believe that there will be any substantive impact on existing library offerings—either in terms of library materials or personnel.

The librarians in the Grainger Engineering Library have an excellent relationship with the College and if additional services or materials are required as the program develops, I have every confidence that we will be able to work together to meet the needs of the students.

Sincerely,

John Wilkin
Juanita J. and Robert E. Simpson
Dean of Libraries and University Librarian

c: Thomas Teper
William Mischo
Mary Schlembach
Elizabeth Stovall, Graduate Programs Director, CoE

UNIVERSITY OF ILLINOIS
AT URBANA - CHAMPAIGN

Office of the Provost and Vice Chancellor
for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820



February 22, 2019

Gay Miller, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a copy of a proposal from the College of Engineering to deliver the Master of Engineering in Electrical and Computer Engineering online.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kathryn A. Martensen'.

Kathryn A. Martensen
Assistant Provost

Enclosures

c: A. McKinney
J. Hart
R. McElroy
H. Dankowicz
W. Hwu
A. Edwards
E. Stuby

Graduate College

110 Coble Hall
801 South Wright Street
Champaign, IL 61820-6210



Executive Committee

2018-2019 Members

Wojtek Chodzko-Zajko
Dean & Chair
Graduate College

Members

Conrad Bakker
Art & Design

Zachary Berent
Graduate Student, Mechanical
Science & Engineering

Xiaoling Chen
Accountancy

Lee DeVille
Mathematics

Lilya Kaganovsky
Comparative & World
Literature

Becky Fuller
Animal Biology

Justine Murison
English

Denice Hood
Education

Tania Ionin
Linguistics

Brian Bailey
Computer Science

Lori Raetzman
Molecular & Integrative
Physiology

Katie Ranard
Graduate Student, Nutritional
Sciences

Sandra Rodriguez-Zas
Animal Sciences

Sela Sar
Advertising

Mark Steinberg
History

Terri Weissman
Art & Design

February 21, 2019

Kathy Martensen
Office of the Provost

Dear Kathy,

Included is a proposal from the College of Engineering to **“Establish an Online Program for the Master in Engineering in Electrical and Computer Engineering”**

The proposal was received on February 12, 2019 and reviewed at the Graduate College Executive Committee meeting on February 19, 2019. The committee approved the proposal without revision.

We find that this proposal meets the standards of Graduate Education at Illinois and we now forward for your review.

Sincerely,

John C. Hart
Executive Associate Dean
Graduate College

c: W. Hwu
H. Dankowicz

**Senate Educational Policy Committee
Proposal Check Sheet**

PROPOSAL TITLE (Same as on proposal): Establish an online program code for the Master of Engineering in Electrical and Computer Engineering Degree in the College of Engineering

PROPOSAL TYPE (select all that apply below):

A. Proposal for a NEW or REVISED degree program. Please consult the Programs of Study Catalog for official titles of existing degree programs.

1. Degree program level:

Graduate Professional Undergraduate

2. Proposal for a new **degree** (e.g. B.S., M.A. or Ph.D.):

 Degree name, “e.g., *Bachelor of Arts or Master of Science*”: _____

3. Proposal for a new or revised **major, concentration, or minor**:

New or Revised **Major** in (name of existing or proposed major): _____

New or Revised **Concentration** in (name of existing or proposed concentration): _____

New or Revised **Minor** in (name of existing or proposed minor): _____

4. Proposal to rename an existing major, concentration, or minor:

Major Concentration Minor

 Current name: _____

 Proposed new name: _____

5. Proposal to terminate an existing degree, major, concentration, or minor:

Degree Major Concentration Minor

 Name of existing degree, major, or concentration: _____

6. Proposal involving a multi-institutional degree:

New Revision Termination

 Name of existing Illinois (UIUC) degree: _____

Name of non-Illinois partnering institution: _____

Location of non-Illinois partnering institution:

State of Illinois US State: _____ Foreign country: _____

- B. Proposal to create a new academic unit (college, school, department, program or other academic unit):

Name of proposed new unit: _____

- C. Proposal to rename an existing academic unit (college, school, department, or other academic unit):

Current name of unit: _____

Proposed new name of unit: _____

- D. Proposal to reorganize existing units (colleges, schools, departments, or program):

1. Proposal to change the status of an existing and approved unit (e.g. change from a program to department)

Name of current unit including status: _____

2. Proposal to transfer an existing unit:

Current unit's name and home: _____

Proposed new home for the unit: _____

3. Proposal to merge two or more existing units (e.g., merge department A with department B):

Name and college of unit one to be merged: _____

Name and college of unit two to be merged: _____

Proposed name and college of new (merged) unit: _____

4. Proposal to terminate an existing unit:

Current unit's name and status: _____

- E. **Other educational policy proposals** (e.g., academic calendar, grading policies, etc.)

Nature of the proposal: Electrical and Computer Engineering request is to establish a online program code for the existing Master of Engineering in Engineering in Electrical and Computer Engineering

Revised 10/2012