College of Engineering Committee on Academic Affairs  
Meeting Minutes 13 January 2014

Attendance:
Aero – Carl Hartsfield  
AVN – Not present (Seth Young)  
BME – Derek Hansford  
CHE – Jeff Chalmers - Chair  
CIV – Not present (Frank Croft)  
CSE – Ken Supowit  
ECE – George Valco  
ENG PHY – Not present (Richard Hughes)  
ENV – John Lenhart  
FAB – Ann Christy  
ISE – Carolyn Sommerich  
MSE – Mike Sumption  
ME – Blaine Lilly: ASAP Rep  
WLD – Dave Farson  
Graduate Student – not present (Sadie Nasrin & Aveek Mukhopadhyay)  
Undergraduate Student – Kareem Rasul (Not present Rachel Warren)

Non Voting:
Associate Dean for Undergraduate Education – Dave Tomasko  
KSA – Holly Murphy (for Jane Murphy)  
Committee Secretary – Ed McCaul

Guests – Robert Gustafson, Bob Mick, Nikki Strader, Justin Troyer (ODEE), Kevin Jones (ODEE)

1. The minutes from the 5 December 2013 meeting were approved as corrected.

2. Blaine Lilly made a motion that the ECE Graduate Curriculum Proposal be approved. Ann Christy seconded the motion. The floor was opened for discussion. (The proposal is attached.)
   2.1. The committee was informed that although it has been awhile since the committee has seen the proposal ECE did make the changes required by the committee.
   2.2. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.

3. Carolyn Sommerich presented the Course Proposal Subcommittee’s recommendations.
   3.1. Carolyn made a motion that the new course request for CSE 5042, Systems I: Introduction to Low-Level Programming and Computer Organization, be approved. George Valco seconded the motion. The floor was opened for discussion.
   3.1.1. The committee was informed that this is an introductory programming course.
   3.1.2. Ken Supowit and Nikki Strader commented that they were not sure if the prerequisites were correct. Ken made a friendly amendment that the course be
approved contingent upon clarification of the prerequisites. The friendly was accepted.

3.1.3. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion with the amendment passed.

3.2. Carolyn made a motion that the new course requests for ECE 5070, Neuroengineering and Neuroprosthetics, and ECE 7032, Physical Electronics of Advanced Semiconductor Devices, be approved. George Valco seconded the motion. The floor was opened for discussion.

3.2.1. The committee was informed that 5070 is cross listed with NEUROSC 5070 and has concurrence from BME.

3.2.2. The committee was informed that 7032 is very much within ECE’s area of interest.

3.2.3. The comment was made that Chemical Engineering would also be interested in this course and may consider asking to cross list it sometime in the future.

3.2.4. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.

3.3. Carolyn made a motion that the course change request for CSE 2221, Software I: Software Components, be approved. George Valco seconded the motion. The floor was opened for discussion.

3.3.1. The committee was informed that CSE was correcting the prerequisites for the course and adding two courses to the exclusions.

3.3.2. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.

3.4. Carolyn made a motion that the course change requests for ECE 4900, Capstone Design, 5531, Fundamentals of Semiconductor Devices, 5532, Nanofabrication and Nanoscale Devices, 6102, Wireless Networks, 7832, Advanced Photovoltaics, and 7833, Organic Conducting Devices, be approved. George Valco seconded the motion. The floor was opened for discussion.

3.4.1. The committee was informed that 4900 is adding ENGR 4903 as an exclusion and that ECE was correcting the prerequisites for 6102.

3.4.2. The committee was informed that ECE wants to change 5531 to 6531, 5532 to 6532 to better reflect the level the courses are being taught at and change 7832 to 5832, and 7833 to 5833 so that undergraduates can take the courses.

3.4.3. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.

3.5. Carolyn made a motion that the course change requests for MSE 2010, 2241, 2251, 2321, 2331, 6999, and 8999 be approved. Blaine Lilly seconded the request. The floor was opened for discussion.

3.5.1. The committee was informed that MSE wants to clarify the prerequisites for 2010 and 2251.

3.5.2. The committee was informed that MSE wants to update the prerequisites for 2241, 2321, and 2331.

3.5.3. The committee was informed that MSE wants to increase the maximum number of hours for 6999 and 8999 to be consistent with graduate school maximums.

3.5.4. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.
3.6. Carolyn made a motion that the course change request for ME 7751 be approved. Blaine Lilly seconded the motion. The floor was opened for discussion.
3.6.1. The committee was informed that Mechanical wants to reduce the number of credit hours in this course from four to three and add “or graduate standing” to the prerequisites. 7751 is an elective course.
3.6.2. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.
3.7. Carolyn made a motion that the course change requests for WE 4012, 4101, 6999, 7012, and 8999 be approved. Dave Farson seconded the motion. The floor was opened for discussion.
3.7.1. The committee was informed that Welding wants to increase the credit hours to 4012 and 7012, which are electives, by one credit hour by adding a lab to each course.
3.7.2. The committee was informed that Welding wants to update the prerequisites for 4101 and increase the maximum number of hours for 6999 and 8999 to be consistent with graduate school maximums.
3.7.3. There being no further discussion a vote was taken: 11 approved, 0 opposed, and 0 abstentions. The motion passed.
3.8. Carolyn made a motion that the course withdrawal request for MSE 4193 be approved. Ann Christy seconded the motion. The floor was opened for discussion.
3.8.1. The committee was informed that 4193 needs to be withdrawn at the request of the Registrar's Office so that 4193.01 and 4193.02 can offered in its place.

4. Carolyn Sommerich made a motion that the proposed change to the college’s faculty rules allowing CCAA to delegate approval of minor changes to an existing course that do not reduce student access to the course to the Secretary of the Committee and requiring the committee secretary to provide a monthly report of all such requests and approvals to CCAA be approved. (Proposal is attached.) Ann Christy seconded the motion. The floor was opened for discussion.
4.1. The comment was made that such a policy will allow the Course Proposal Subcommittee and CCAA to spend its time on more substantial course requests rather than ones with minor changes.
4.2. The comment was made that such a policy will allow course requests with minor changes to be approved quickly.
4.3. The comment was made that the committee has allowed the committee secretary to do this before when we were switching to semesters and that this change would formalize things.
4.4. The comment was made that if the committee approves this change that it will still need to be approved at a college faculty meeting as it involves a change to the college faculty rules.
4.5. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion passed.
4.6. The committee secretary stated that he would forward the request to Jennifer Evans-Cowley so that she can include it in the agenda at the next college faculty meeting.
5. Blaine Lilly made a motion that the proposed changes to ECE SAP policies be approved. (Policy is attached.) Ann Christy seconded the motion. The floor was opened for discussion.

5.1. The committee was informed that the proposal has been approved by the ASAP Subcommittee.

5.2. The committee was informed that the major changes are:
   
   5.2.1. Replacing references to notification letters sent by mail with use of email for sending official notification and adding a sentence about copies of letters being placed on Advising Connect.
   
   5.2.2. Closing a loophole in conditions for Continuing on SAP.
   
   5.2.3. Updating the notification section.
   
   5.2.4. Clarifying wording regarding reinstatement after a second dismissal in conjunction with the University’s Fresh Start Rule.

5.3. The question was asked as to whether e-mail notification could be trusted as much as a letter in the mail. The response was that e-mail is now considered formal communication by the university. In addition, our students frequently change addresses and often times will not get a letter sent to their previous address and the notification will be put on their Advising Connect.

5.4. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion passed.

6. The committee discussed the memorandum from Bob Gustafson concerning issues with the recently approved University minor policy. (Memorandum is attached.)

6.1. Bob informed the committee that the new policy raised some concerns in three areas: not counting 1000 level courses, the six hours at 3000 level or above, and no overlap with the student’s major. The policy, as written, will require us to modify some of our minors and will eliminate our student’s ability to double count their minor courses. The issue with double counting is that we have a philosophical difference with Arts & Science on how minors are viewed. In addition, as tagged degrees we do not have majors.

6.2. The question was asked as to what Bob wants the committee to do. The response was that he would like CCAA, in its official status, to send a memorandum to CAA expressing Engineering’s issues with the new policy.

6.3. The committee was informed that the new minor policy has come up at the last two CAA meetings, but no changes have been made to it.

6.4. The comment was made that Engineering students will have a hard time taking minors if they cannot double count the hours due to the 18 credit hour limit without paying extra.

6.5. It was decided to have Subcommittee A draft a memorandum to CAA expressing Engineering’s concerns and possible solutions.

6.6. The comment was made that we need to be proactive with this.

6.7. The comment was made that we may want to define what an Engineering minor consists of, possibly only those courses required by a program and offered by that program.
7. Justin Troyer and Kevin Jones from the Office of Distance Education & E Learning made a presentation to the committee.

7.1. The committee was informed that the Office of Distance Education & E Learning (ODEE) offers a wide range of video services to include web conferencing.

7.2. The question was asked as to what was the cost of their services. The response was that it is free.

7.3. The question was asked as to whether only OSU employees could use the service. The response was that quests of OSU employees can participate but their participation needs to be limited.

7.4. The committee was informed that ODEE will distribute audio visuals files for faculty as long as the information is not copyrighted and involves OSU business. This service is on a first come, first serviced bases and, again, no cost is involved. ODEE can also provide podcasting.

7.5. ODEE has just launched a new lecture capture and hosting site. The equipment needed for this service is being place in the larger lecture halls.

7.6. The question was asked as to how information on ODEE’s services can be found. The response was that a search for ODEE could be done on OSU’s website or keywords such as streaming or podcast could be used. ODEE is now part of the Office of Academic Affairs and is now longer part of the CIO.

7.7. The question was asked as to whether their services would work on Carmen connect with an I-pad. The response was yes but that there would be some limitations.

7.8. The question was asked as to how many rooms have video conferencing and where were they located. The response was that there are currently seven dedicated rooms with more coming. All of the rooms are located around the oval.

7.9. The question was asked as to whether any future rooms will be on north campus. The response was that they are trying to locate some there.

8. The meeting was adjourned at 11:05.
Graduate Course Requirement Proposal:

Electrical and Computer Engineering

Academic Unit Responsible for Course:

Dept. Electrical and Computer Engineering (ECE)

Contact Person:

Prof. Kevin M. Passino, Dept. Electrical and Computer Engineering, 2015 Neil Ave., passino@ece.osu.edu

Course Proposal:

It is proposed that a 1 credit, S/U (mastery) course be required of all graduate students in Electrical and Computer Engineering with a course title of

ECE 7080 Ethics and Professionalism

In other words, the course would be required in order to get the Master of Science in ECE or Doctor of Philosophy in ECE degree. It would be recommended that students take the course near the beginning of their program.

Motivation / Rationale:

There are several reasons for not only offering, but requiring this course:

1. The Accreditation Board for Engineering and Technology (ABET) requires treatment of similar material for all students in all U.S. undergraduate engineering programs that are accredited by ABET.
2. The National Science Foundation (NSF) now requires all students (undergraduate, graduate, and post-doc) funded by NSF to be trained in the “responsible conduct of research” (RCR, as dictated by the American COMPETES Act). The course proposed here meets the RCR content requirements by NSF. NIH has similar requirements for some of the students that they fund.
3. Engineers in industry, especially managers, often say that engineering ethics and professionalism is a critically important subject for the practice of engineering.
4. Most of our graduate students (60%) come from other countries where there are no requirements to take a course in ethics and professionalism. Moreover, almost all of our graduate students take jobs in the U.S. in industry, government labs, or academia. A course in ethics and professionalism helps foreign nationals to learn about our culture and what is acceptable and unacceptable in engineering practice (e.g., safety/risk-cost tradeoffs, how to treat women engineers, engineering and environmental standards).
5. The proposed course will also cover professionalism and its central issue of competence. This is done via treatment of strategies to be a good graduate student (e.g., strategies to approach research problems, the mentoring relationship with the advisor). Moreover, the course will cover “research integrity” including issues in publishing (e.g., plagiarism, authorship, citations, academic misconduct) and research (e.g., fraud, conflicts of interest). The course will also cover strategies for good professional communications (e.g., writing, presentations). If we have all our graduate students in ECE understand these topics, they will be more effective as graduate students and later as employees.

6. There is a general need to set the standards for ethical and professional behavior and make those expectations clear to all students. While it is not clear that every student will behave ethically and professionally after taking such a course, we at least need to define our expectations.

Course: ECE 7080 Ethics and Professionalism

Lectures, 55 min. each (1 credit hour course, 1 semester long)

1. Introduction
   • Engineering as a profession
   • Professional expectations of graduate students and strategies for success
   • Overview of course objectives

2. Ethical Dilemmas, Choices, and Codes of Ethics
   • Ethical decision-making strategies
   • Critique codes of ethics

3. Moral Frameworks for Engineering Ethics
   • Moral frameworks, connections to engineering
   • Personal commitments and professional life (e.g., engineering volunteerism)

4. Engineering as Social Experimentation
   • Engineering as social experimentation
   • Involving the public in the design process
• Case studies for engineering as social experimentation

5. Safety and Risk

• Assessment of safety and risk
• Design considerations, uncertainty
• Risk-benefit analysis, safe-exit and fail safe systems

6. Case Studies for the Design Process

• Case studies in impact of safety/risk on design

7. Engineer's Responsibilities and Rights

• Employee/employer rights and responsibilities
• Confidentiality and conflict of interest
• Whistle-blowing

8. Case Studies for the Workplace

• Case studies on professional behavior/policies on the job (e.g., on gender issues)

9. Honesty

• Academic misconduct (students and instructors)
• Consulting engineers
• Expert witnesses and advisors

10. Research Integrity

• Honesty in research, cooking results, fraud, conflicts of interest
• Publishing (e.g., plagiarism, citations, review process)

11. Professional Communications
• How to write a good paper
• How to give a good presentation

12. Environmental Ethics

• Engineering, ecology, economics
• Sustainable development
• Ethical frameworks

13. Global Issues

• Multinational corporations, globalization of engineering
• Technology transfer, appropriate technology
• Computer ethics, weapons development

14. Cautious Optimism and Moral Leadership

• Cautious optimism as a technology development attitude
• Moral leadership in engineering

Course Pedagogy and Grading:

1. Case-Study Based Approach to Teaching: The well-accepted strategy of teaching via case studies will be used for the core topics.
2. Mastery: The course will be taught/graded as a mastery course. All homeworks or projects that are substandard will be returned to the student and they will be required to improve them until they get an acceptable grade. Turning in high quality solutions to all homeworks and projects will result in a grade of “satisfactory” (S).

Transition Policy:
The course will be offered as an elective at the graduate level until the proposal for it being required is accepted. Then, only new students will be required to take the course as part of their program.

**Graduate Course Listing:**

Please see Attachment 1 for a listing of graduate courses in ECE, with the proposed course ECE 7080 Ethics and Professionalism included.

**Advising Sheets:**

Attachment 2: Current MS Advising Sheet
Attachment 3: Proposed MS Advising Sheet (changes given in red font)
Attachment 4: Current PhD Advising Sheet
Attachment 5: Proposed PhD Advising Sheet (changes given in red font)
### Attachment #1: ECE Graduate Courses

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<th>Course Title</th>
<th>Credit Hours</th>
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<td>Introduction to Analog and Digital Communications</td>
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<td>5010</td>
<td>Wireless Propagation and Radar</td>
<td>3.0</td>
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<tr>
<td>5011</td>
<td>Antennas</td>
<td>3.0</td>
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<td>5012</td>
<td>Integrated Optics</td>
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<td>5017</td>
<td>Microwave Engineering</td>
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<td>5020</td>
<td>Mixed Signal VLSI</td>
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<td>Analog Integrated Circuits</td>
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<td>5022</td>
<td>Radio frequency integrated circuits</td>
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<td>Power Electronics Devices, Circuits, and Applications</td>
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<td>Microwave Electronics</td>
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<td>Semiconductor Process Technology</td>
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<td>Surfaces and Interfaces of Electronic Materials</td>
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<td>Solid State Microelectronics Laboratory</td>
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<td>Electric Machines</td>
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<td>Power Systems</td>
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<td>High Voltage Engineering and Laboratory</td>
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<td>Introduction to Wireless Networking</td>
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<td>Introduction to Integrated Circuits Test and Measurement</td>
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<td>Introduction to Digital Signal Processing</td>
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<td>Computer architecture and design</td>
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<td>Fundamentals of Semiconductors for Microelectronics and Photonics</td>
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<td>Nanofabrication and Nanoscale Devices</td>
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<td>Research for Thesis</td>
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Attachment #2: Current MS Advising Sheet

THE MASTER OF SCIENCE PROGRAM

The M.S. degree is offered in Electrical and Computer Engineering with two options: thesis and non-thesis. A minimum of 30 Graduate credit hours is required to earn a master’s degree. A student must be registered for at least three (3) graduate credit hours the semester in which graduation is expected.

Time Limit
The M.S. program (thesis and non-thesis) has a six (6) year time limit for completion.

Satisfactory Performance
The minimum grade point average required by the Graduate School and the ECE department is 3.0 GPA.

Requirement of Advanced ECE Courses for M.S. Degree
Six (6) course credits of letter-graded advanced ECE courses are required for the M.S. degree. Advanced courses in semesters are defined as ECE 6000 level and above.

During the transition from the quarter to the semester system, two (2) advanced level quarter system courses, one quarter and one semester advanced course, or two (2) semester advanced courses satisfy this requirement.

Thesis Option
The thesis option requires at least 30 hours of graduate credit with an average grade of 3.0 or better. Requirements include:

1. No more than 6 hours of graduate credit transferred from another institution.

2. A satisfactory thesis represented by at least 10 hours of ECE 6999 thesis research credits.

3. At least 20 hours of graduate course work exclusive of thesis research credits (ECE 6999). Of these 20 hours:
   - At least 18 must be letter-graded (no S/U), of which
   - At least 9 must be ECE courses, of which
   - At least 6 must be ECE 6000 level and above completed at OSU. For the purpose of this requirement, the following courses count as 6000 level courses: ECE 5541 and ECE 5047.
The thesis option also requires satisfactory performance on a one-hour final oral examination (Master's Examination) with emphasis on the thesis research. The thesis approval and the oral examination are conducted by the student's M.S. committee, consisting of the faculty advisor and at least one other faculty member.

**MS (Thesis Option): Min. 30 Credits***

- **Letter-Graded Graduate Courses (Min. 18 Credits)**
  - **ECE Graduate Courses (Min. 9 Credits)**
  - **Advanced ECE Graduate Courses (Min. 6 Credits)**
  - **Courses in a Related Field (9 Credits)**
    - Related Fields: Other Engineering; Biological Sciences; Physics; Math; Chemistry; Business; Economics; ACCAD
- **Individual Studies (Max. 2 Credits)**

*Up to 6 hours of graduate credit can be transferred from another institution subject to approval of Graduate Studies Committee.*
**Non-thesis Option**

The Non-thesis option requires at least 30 hours of graduate credit with an average grade point average of 3.0 or better. Requirements include:

1. Not more than 6 hours of graduate credit transferred from another institution.

2. At least 30 hours of courses and of these 30 hours:
   - At least 21 must be letter-graded (no S/U), of which
   - At least 12 must be ECE courses, of which
   - At least 6 must be ECE 6000 level and above completed at OSU. For the purpose of this requirement, the following courses count as 6000 level courses: ECE 5541 and ECE 5047.
   - A limit of 9 hours of Individual Studies credit (ECE 6193) is permitted.

The non-thesis option also requires satisfactory performance on the M.S. Non-thesis exam, which consists of a **take home** written exam (structured technical report) followed by a discussion review.

The M.S. non-thesis program is structured to allow its completion within one year.
MS (Non-Thesis Option): Min. 30 Credits*

Letter-Graded Graduate Courses (Min. 21 Credits)

- ECE Graduate Courses (Min. 12 Credits)
- Advanced ECE Graduate Courses (Min. 6 Credits)
- Courses in a Related Field (9 Credits)

Related Fields: Other Engineering; Biological Sciences; Physics; Math; Chemistry; Business; Economics; ACCAD

Individual Studies (Max. 9 Credits)

*Up to 6 hours of graduate credit can be transferred from another institution subject to approval of Graduate Studies Committee.
**Dual Master’s Degree Program**

Graduate students in Electrical and Computer Engineering may wish to pursue a dual M.S. degree in conjunction with another department. The Graduate School provides a mechanism for such a plan of study, The Dual Degree Program Plan. [http://www.gradsch.ohio-state.edu/forms-library.html](http://www.gradsch.ohio-state.edu/forms-library.html)

The requirements established by the Electrical and Computer Engineering Department in addition to those of the Graduate School are as follows:

1. Two advisors, one from each department, must assist in the formulation and approval of the student’s dual degree plan, and the student-prepared dual degree proposal. At the time the plan is submitted for approval, no more than 50 percent of the total graduate hours included in the plan for either degree may have been completed.

2. If the two degrees are to be taken with thesis, a single thesis will suffice, but its topic must be interdisciplinary in nature and must have the approval and require the expertise of both advisors. In the Non-thesis option, the ECE Non-thesis M.S. Exam must be passed. The dual degree *cannot* be taken with thesis in one program and without thesis in the other; that would not constitute an integrated program.

3. Two faculty members, one from each program, are required for the exam committee.

4. At least 20 hours of credit toward the dual degree must be exclusive to the ECE degree. This number must include at least 12 hours of letter-graded ECE courses. At least 6 of these 12 hours must be advanced ECE courses.
The Master of Science Program

The M.S. degree is offered in Electrical and Computer Engineering with two options: thesis and non-thesis. A minimum of 30 Graduate credit hours is required to earn a master’s degree. A student must be registered for at least three (3) graduate credit hours the semester in which graduation is expected.

Time Limit
The M.S. program (thesis and non-thesis) has a six (6) year time limit for completion.

Satisfactory Performance
The minimum grade point average required by the Graduate School and the ECE department is 3.0 GPA.

Requirement of Advanced ECE Courses for M.S. Degree
Six (6) course credits of letter-graded advanced ECE courses are required for the M.S. degree. Advanced courses in semesters are defined as ECE 6000 level and above.

During the transition from the quarter to the semester system, two (2) advanced level quarter system courses, one quarter and one semester advanced course, or two (2) semester advanced courses satisfy this requirement.

Thesis Option
The thesis option requires at least 30 hours of graduate credit with an average grade of 3.0 or better. Requirements include:

1. No more than 6 hours of graduate credit transferred from another institution.
2. A satisfactory thesis represented by at least 10 hours of ECE 6999 thesis research credits.

3. At least 20 hours of graduate course work exclusive of thesis research credits (ECE 6999). Of these 20 hours:
   - The 1 credit hour course ECE 7080 is required,
   - At least 18 must be letter-graded (no S/U), of which
   - At least 9 must be ECE courses, of which
   - At least 6 must be ECE 6000 level and above completed at OSU. For the purpose of this requirement, the following courses count as 6000 level courses: ECE 5541 and ECE 5047.
The thesis option also requires satisfactory performance on a one-hour final oral examination (Master's Examination) with emphasis on the thesis research. The thesis approval and the oral examination are conducted by the student's M.S. committee, consisting of the faculty advisor and at least one other faculty member.

MS (Thesis Option):
Min. 30 Credits*

Letter-Graded Graduate Courses
(Min. 18 Credits)

ECE Graduate Courses
(Min. 9 Credits)

Courses in a Related Field
(9 Credits)

Related Fields:
Other Engineering;
Biological Sciences;
Physics; Math; Chemistry;
Business; Economics;
ACCAD

Advanced ECE Graduate Courses
(Min. 6 Credits)

ECE 7080 Ethics and Professionalism

Individual Studies
(Max. 1 Credit)

*Up to 6 hours of graduate credit can be transferred from another institution subject to approval of Graduate Studies Committee
**Non-thesis Option**

The Non-thesis option requires at least 30 hours of graduate credit with an average grade point average of 3.0 or better. Requirements include:

1. Not more than 6 hours of graduate credit transferred from another institution.

2. At least 30 hours of courses and of these 30 hours:
   - The 1 credit hour course ECE 7080 is required,
   - At least 21 must be letter-graded (no S/U), of which
   - At least 12 must be ECE courses, of which
   - At least 6 must be ECE 6000 level and above completed at OSU. For the purpose of this requirement, the following courses count as 6000 level courses: ECE 5541 and ECE 5047.
   - A limit of 8 hours of Individual Studies credit (ECE 6193) is permitted.

The non-thesis option also requires satisfactory performance on the M.S. Non-thesis exam, which consists of a take home written exam (structured technical report) followed by a discussion review.

The M.S. non-thesis program is structured to allow its completion within one year.
MS (Non-Thesis Option): Min. 30 Credits*

Letter-Graded Graduate Courses (Min. 21 Credits)

ECE Graduate Courses (Min. 12 Credits)

Advanced ECE Graduate Courses (Min. 6 Credits)

Courses in a Related Field (9 Credits)

Related Fields: Other Engineering; Biological Sciences; Physics; Math; Chemistry; Business; Economics; ACCAD

ECE 7080 Ethics and Professionalism

Individual Studies (Max. 8 Credits)

*Up to 6 hours of graduate credit can be transferred from another institution subject to approval of Graduate Studies Committee.
Dual Master’s Degree Program
Graduate students in Electrical and Computer Engineering may wish to pursue a dual M.S. degree in conjunction with another department. The Graduate School provides a mechanism for such a plan of study, The Dual Degree Program Plan. http://www.gradsch.ohio-state.edu/forms-library.html

The requirements established by the Electrical and Computer Engineering Department in addition to those of the Graduate School are as follows:

5. Two advisors, one from each department, must assist in the formulation and approval of the student’s dual degree plan, and the student-prepared dual degree proposal. At the time the plan is submitted for approval, no more than 50 percent of the total graduate hours included in the plan for either degree may have been completed.

6. If the two degrees are to be taken with thesis, a single thesis will suffice, but its topic must be interdisciplinary in nature and must have the approval and require the expertise of both advisors. In the Non-thesis option, the ECE Non-thesis M.S. Exam must be passed. The dual degree cannot be taken with thesis in one program and without thesis in the other; that would not constitute an integrated program.

7. Two faculty members, one from each program, are required for the exam committee.

8. At least 21 hours of credit toward the dual degree must be exclusive to the ECE degree. This number must include at least 12 hours of letter-graded ECE courses. At least 6 of these 12 hours must be advanced ECE courses. Also, within the 21 hrs., the 1 credit hour course ECE 7080 is required.
Attachment #4: Current PhD Advising Sheet

**THE DOCTOR OF PHILOSOPHY PROGRAM**

The ECE department offers two different tracks to pursue a Ph.D. degree:

- Direct Ph.D. from B.S. degree
- Ph.D. after the M.S. degree

**Summary Requirements for the Ph.D. Degree**

**Direct Ph.D. from B.S. requirements:**

1. Course requirements include:
   - At least 30 graduate credit hours of coursework beyond the bachelor’s degree of which at least 21 credits must be ECE courses and up to 9 credits can be graduate courses in a related field.
   - Of the 21 ECE graded course credits, 6 must be associated with an area of concentration outside the student’s primary area of study (does not have to match the traditional curriculum areas in department).
   - Of the 30 credits of coursework, at least 28 must be letter-graded courses and 2 can be individual studies.
   - Up to 24 coursework credits and up to 24 dissertation credits (for a maximum total of 48 credits) from another institution can be transferred into the direct Ph.D. program, subject to the approval of the Graduate Studies Committee.

2. A dissertation embodying a significant original research contribution and counting 50 hours (ECE 8999) toward the 80 hour requirement.
Ph.D. after M.S. requirements:

1. M.S. degree counts for 30 credits.
2. 14 credits of graduate coursework of which 12 must be letter-graded coursework and 2 credits can be individual studies are required. Up to 9 coursework credits and up to 10 dissertation credits (for a maximum total of 19 credits) from another institution can be transferred past the M.S., subject to the approval of the Graduate Studies Committee.
3. A dissertation embodying a significant original research contribution and counting 36 hours (ECE 8999) toward the 80 hour degree is required.
4. The student must have taken at least 21 semester credits of letter graded ECE courses. These 21 credits can come from either the M.S. or Ph.D. program. The ECE courses from a non-OSU M.S. program must be approved by the Graduate Studies Chair as being equivalent to ECE courses at OSU. 6 of the 21 ECE credits must be associated with an area of concentration outside the student’s primary area of study (does not have to match the traditional curriculum areas in department).
5. Graduate courses taken at OSU in excess of the minimum required for the M.S. degree, can be counted toward the graduate credit hours required for the doctoral degree. The student must submit the form for approval by the ECE Graduate Studies Chair and the Graduate School.
Summary of Additional Requirements and Steps in the Ph.D. Program

(Both Direct and from M.S.)

1. The Ph.D. Plan of Study must be submitted by the end of the 2nd semester.
2. Ph.D. students are expected to maintain a GPA of 3.5 and above.
3. Ph.D. students must have a permanent advisor by the end of the 2nd semester.
4. The Ph.D. Qualifying Examination must be taken within one (1) year for M.S. to Ph. D. and within two (2) years for B.S. to Ph. D. students. Two attempts are allowed.
5. Graduate seminars (ECE 8891) of at least two credit hours are required. Credit for these seminars is not included in the 80 hour degree requirement.
6. The Ph.D. proposal is submitted at the time of the Candidacy Examination. Two attempts are allowed.
7. Submission of at least one substantial, original paper based on the dissertation research is required.
8. Successful completion of the Dissertation (Ph.D. thesis) and Final Oral Examination complete the degree requirements.

Ph.D. Plan of Study:
The Ph.D. Plan of Study will define an ECE primary area of emphasis, an ECE secondary area of emphasis and other graduate courses approved by the advisor. If you have an M.S. degree from another institution, a transcript must accompany the Plan of Study form.

Two faculty signatures are required on the Plan prior to submission: the advisor and a secondary area faculty. The secondary area faculty signing the Plan is also agreeing to serve as the secondary area examiner on the student's Candidacy Exam committee, and should be from outside the student’s primary area.

Ph.D. Qualifying Examination:
The Ph.D. Qualifying Examination (QE) serves as one of the key filters in allowing a student to pass from simple admission to the Ph.D. program to regular doctoral student status.

The QE is designed in accordance with the following principles:
The examination promotes breadth in the preparation for doctoral studies.

The examination establishes that the student is prepared for further advanced studies at the doctoral level.

Since there is some flexibility in the nature of the exam, the student must carefully discuss with his/her advisor details about the material that will be covered in the exam.

Other Requirements:

In addition to the qualifying exam, the doctoral student must have a minimum 3.5 GPA and obtain a commitment from a faculty advisor on the Ph.D. Plan of Study.

Ph.D. Candidacy Examination:

When you are planning your candidacy exam, please review and follow the process outlined below.

- Schedule the candidacy exam by the 4th week of the term you plan to take the candidacy exam. Submit the Request for Approval of Candidacy Examination Committee to the ECE Graduate Studies coordinator for Graduate Studies Chair approval. [http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/request_for_candidacy.pdf](http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/request_for_candidacy.pdf)
- After the committee is approved, submit your proposal to the candidacy committee for review. Obtain committee signatures on the PhD Research Proposal Approval form. [http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/phd_research_proposal.pdf](http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/phd_research_proposal.pdf) Submit signed approval form with copy of the proposal to the Graduate Studies coordinator at least one week before the written examination begins.
- Submit the Notification of Doctoral Candidacy form [http://www.gradsch.ohio-state.edu/Depo/PDF/Doc_Notify.pdf](http://www.gradsch.ohio-state.edu/Depo/PDF/Doc_Notify.pdf) to the ECE Graduate Studies coordinator for the ECE Graduate Studies Chair approval. After it is approved, submit Notification form to the Graduate School, at least two weeks before the oral examination.
  - There must be at least one week between the written and the oral examination.
- A description of the format of the candidacy exam, both oral and written, can be found in the Graduate School Handbook, p. 22-23. [http://www.gradsch.ohio-]
Submission of a paper based on the dissertation research:

Submission of at least one substantial, original paper based on the dissertation research to a refereed, archival journal is required before approval of the final defense of the dissertation is granted. A signed form from the advisor (form is online) stating the status of the paper along with a copy of the paper must be provided with the Application to Graduate at the beginning of the semester of graduation. If the paper has not yet been published, the student must also provide a copy of the letter or e-mail acknowledging the acceptance or submission of the paper to the journal. Typically, advisors expect two or more journal papers from their Ph.D. students.

THE DOCTOR OF PHILOSOPHY PROGRAM

The ECE department offers two different tracks to pursue a Ph.D. degree:

- Direct Ph.D. from B.S. degree
- Ph.D. after the M.S. degree

**Summary Requirements for the Ph.D. Degree**

**Direct Ph.D. from B.S. requirements:**

1. Course requirements include:
   - At least 30 graduate credit hours of coursework beyond the bachelor’s degree of which at least 21 credits must be ECE courses and up to 9 credits can be graduate courses in a related field.
   - Of the 21 ECE graded course credits, 6 must be associated with an area of concentration outside the student’s primary area of study (does not have to match the traditional curriculum areas in department).
   - Of the 30 credits of coursework, at least 28 must be letter-graded courses, and 2 can be individual studies.
   - Up to 24 coursework credits and up to 24 dissertation credits (for a maximum total of 48 credits) from another institution can be transferred into the direct Ph.D. program, subject to the approval of the Graduate Studies Committee.

2. A dissertation embodying a significant original research contribution and counting 49 hours (ECE 8999) toward the 80 hour requirement.
PhD after BS (Min. 80 credits)*

Letter-Graded Graduate Courses (Min. 30 credits)

ECE Graduate Courses (Min. 21 Credits)

- ECE Graduate Courses Outside Primary Area (6 credits)
- Individual Studies (Max. 2 credits)

Graduate Courses in a Related Field (Max. 9 credits)

Dissertation (Min. 49 credits)

*Up to 24 course credits and up to 24 dissertation credits (maximum of 48 sem. credits) can be transferred from another institution subject to Graduate studies committee approval.
PhD after BS (Min. 80 credits)*

Dissertation (Min. 50 credits)

Letter-Graded Graduate Courses (Min. 30 credits)

ECE Graduate Courses (Min. 21 Credits)

ECE Graduate Courses Outside Primary Area (6 credits)

Individual Studies (Max. 2 credits)

Graduate Courses in a Related Field (Max. 9 credits)

*Up to 24 course credits and up to 24 dissertation credits (maximum of 48 sem. credits) can be transferred from another institution subject to Graduate studies committee approval.
**Ph.D. after M.S requirements:**

1. M.S. degree counts for 30 credits.
2. 14 credits of graduate coursework are required of which 12 must be letter-graded coursework, and 2 credits can be individual studies. Up to 9 coursework credits and up to 10 dissertation credits (for a maximum total of 19 credits) from another institution can be transferred past the M.S., subject to the approval of the Graduate Studies Committee.
3. A dissertation embodying a significant original research contribution and counting 35 hours (ECE 8999) toward the 80 hour degree is required.
4. The student must have taken at least 21 semester credits of letter graded ECE courses. These 21 credits can come from either the M.S. or Ph.D. program. The ECE courses from a non-OSU M.S. program must be approved by the Graduate Studies Chair as being equivalent to ECE courses at OSU. 6 of the 21 ECE credits must be associated with an area of concentration outside the student’s primary area of study (does not have to match the traditional curriculum areas in department).
5. Graduate courses taken at OSU in excess of the minimum required for the M.S. degree, can be counted toward the graduate credit hours required for the doctoral degree. The student must submit the form for approval by the ECE Graduate Studies Chair and the Graduate School.
PhD after MS

44 Credits

- **Letter Graded Graduate Courses** (Min. 12 credits)
  - Individual Studies (Max. 2 credits)
  - MS degree (30 credits)
  - 14 credits total

- **ECE Graduate Courses (Min. 21 credits)**
  - ECE Graduate Courses Outside Primary Area (6 credits)

*Up to 9 course credits and up to 10 dissertation credits (max. of 19 sem. credits) can be transferred from another institution past the MS subject to Graduate Studies comm. approval.*
Summary of Additional Requirements and Steps in the Ph.D. Program
(Both Direct and from M.S.)

1. The Ph.D. Plan of Study must be submitted by the end of the 2nd semester.
2. Ph.D. students are expected to maintain a GPA of 3.5 and above.
3. Ph.D. students must have a permanent advisor by the end of the 2nd semester.
4. The **Ph.D. Qualifying Examination** must be taken within one (1) year for M.S. to Ph. D. and within two (2) years for B.S. to Ph. D. students. Two attempts are allowed.
5. **The 1-credit hour course ECE 7080 Ethics and Professionalism is required.**
6. Graduate seminars (ECE 8891) of at least two credit hours are required. Credit for these seminars is not included in the 80 hour degree requirement.
7. The Ph.D. proposal is submitted at the time of the **Candidacy Examination**. Two attempts are allowed.
8. Submission of at least one substantial, original paper based on the dissertation research is required.
9. Successful completion of the Dissertation (Ph.D. thesis) and **Final Oral Examination** complete the degree requirements.

**Ph.D. Plan of Study:**
The Ph.D. Plan of Study will define an ECE primary area of emphasis, an ECE secondary area of emphasis and other graduate courses approved by the advisor. If you have an M.S. degree from another institution, a transcript must accompany the Plan of Study form.
Two faculty signatures are required on the Plan prior to submission: the advisor and a secondary area faculty. The secondary area faculty signing the Plan is also agreeing to serve as the secondary area examiner on the student's Candidacy Exam committee, and should be from outside the student’s primary area.

**Ph.D. Qualifying Examination:**

The Ph.D. Qualifying Examination (QE) serves as one of the key filters in allowing a student to pass from simple admission to the Ph.D. program to regular doctoral student status.

The QE is designed in accordance with the following principles:

- The examination promotes breadth in the preparation for doctoral studies.
- The examination establishes that the student is prepared for further advanced studies at the doctoral level.
- Since there is some flexibility in the nature of the exam, the student must carefully discuss with his/her advisor details about the material that will be covered in the exam.

**Other Requirements:**

In addition to the qualifying exam, the doctoral student must have a minimum 3.5 GPA and obtain a commitment from a faculty advisor on the Ph.D. Plan of Study.

**Ph.D. Candidacy Examination:**

When you are planning your candidacy exam, please review and follow the process outlined below.

- Schedule the candidacy exam by the 4th week of the term you plan to take the candidacy exam. Submit the Request for Approval of Candidacy Examination Committee to the ECE Graduate Studies coordinator for Graduate Studies Chair approval. [http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/request_for_candidacy.pdf](http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/request_for_candidacy.pdf)
- After the committee is approved, submit your proposal to the candidacy committee for review. Obtain committee signatures on the PhD Research Proposal Approval form. [http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/phd_research_proposal.pdf](http://ece.osu.edu/sites/ece.web.engadmin.ohio-state.edu/files/uploads/grads/phd_research_proposal.pdf) Submit signed
approval form with copy of the proposal to the Graduate Studies coordinator at least one week before the written examination begins.

- Submit the Notification of Doctoral Candidacy form [http://www.gradsch.ohio-state.edu/Depo/PDF/Doc_Notify.pdf](http://www.gradsch.ohio-state.edu/Depo/PDF/Doc_Notify.pdf) to the ECE Graduate Studies coordinator for the ECE Graduate Studies Chair approval. After it is approved, submit Notification form to the Graduate School, at least two weeks before the oral examination.
  - There must be at least one week between the written and the oral examination.


Submission of a paper based on the dissertation research:

Submission of at least one substantial, original paper based on the dissertation research to a refereed, archival journal is required before approval of the final defense of the dissertation is granted. A signed form from the advisor (form is online) stating the status of the paper along with a copy of the paper must be provided with the Application to Graduate at the beginning of the semester of graduation. If the paper has not yet been published, the student must also provide a copy of the letter or e-mail acknowledging the acceptance or submission of the paper to the journal. Typically, advisors expect two or more journal papers from their Ph.D. students.

Proposal for an expedited review process for requests for approval of minor course changes that come before CCAA and the CCAA Course sub-committee

Current situation: Each course request (all course modifications, withdrawals, and proposals for new courses) are reviewed by the full Course Subcommittee and then are presented individually to the full assembly of CCAA, which then votes on each request. The subcommittee and CCAA meet monthly during the 9 month academic year and do not meet during the summer.

The value of the course review process comes in having many eyes and perspectives review new proposals and requests to substantially modify existing courses (such as modifications that may limit or change students’ access to a course, modifying course objectives or content, identifying potential overlap between departments, etc.).

The Course Subcommittee would like to propose that an expedited review and approval process be instituted for processing minor changes to existing courses. This will reduce lag time between request submission and approval, particularly for requests submitted in summer. It also allows CCAA and the Course Subcommittee to focus their efforts on proposals for more substantial changes and new courses.

The proposed modification to the CCAA Handbook and the College Pattern of Administration is written in bold italics, below.

Current CCAA Handbook (31 May 2012) wording about the process, which comes from the College’s Pattern of Administration:

6. COMMITTEE ON ACADEMIC AFFAIRS

...  

6.6 Powers Delegated: Subject to the separate powers of the Austin E. Knowlton School of Architecture, the Committee shall (a) Certify at the end of each term lists of students who have fulfilled the requirements for a degree or for whom special recommendation is made and recommend to the Faculty membership of the University Senate and the Board of Trustees, candidates for degrees. The Committee may delegate this task or any portion of it to the Secretary of the Committee. (b) Review and approve or disapprove proposals for new courses and proposals for changes in courses and curricula which are recommended by departments or College Centers approved for such purposes, reporting its decisions directly to the departments or centers concerned and, subject to appeal as described in paragraph 6.10 of this POA, to the University Council on Academic Affairs. The Committee may delegate approval of minor changes to an existing course that do not reduce student access to the course, to the Secretary of the Committee. The Secretary will provide a monthly report of all such requests and approvals to CCAA.
Summary of Proposed Changes to ECE Standards of Academic Performance policy
For ASAP meeting of 19 December, 2013

1. Replace references to notification letters sent by mail with use of email for sending official notification. Pages 3, 4, 6, 7, 9

2. Add sentence about copies of letters being placed on Advising Connect. Page 3.

3. Close a loophole in conditions for Continuing on SAP.
   a. As currently written, a student placed on SAP for MGPA < 2.0 could technically meet terms by raising their MGPA even if their CPHR simultaneously fell below 2.0. Similar loopholes also existed for the converse situations, and with respect to EGPA for premajors.
   b. Add wording to require that any of the point hour ratios already above 2.0 must be maintained above 2.0.
      i. For majors: Pages 4 and 6
      ii. For pre-majors: Pages 7, 8, and 9

4. Updated the notification section on Page 10
   a. Updated to be consistent with no longer sending paper copies with paper letters.
   b. Removal of a quarter-to-semesters paragraph that was only relevant through spring quarter 2012. (Other Q2S language on page 2 is still necessary and has been retained.)

5. Clarified wording regarding reinstatement after a second dismissal in conjunction with the University’s Fresh Start Rule. Page 11
Standards of Academic Performance
For Undergraduate Electrical and Computer Engineering Students

The following point-hour ratios are used to monitor the academic standing of Electrical and Computer Engineering (ECE) majors and pre-majors.

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPHR</td>
<td>A cumulative point-hour ratio over all courses taken at The Ohio State University.</td>
</tr>
<tr>
<td>EGPA</td>
<td>An eligibility grade-point average over all pre-major courses taken at The Ohio State University.*</td>
</tr>
<tr>
<td>MGPA</td>
<td>A major grade-point average over all major courses taken at The Ohio State University.†</td>
</tr>
<tr>
<td>SGPA</td>
<td>A semester/summer grade-point average over all courses taken during a semester or during summer term at The Ohio State University.</td>
</tr>
</tbody>
</table>

* Electrical and Computer Engineering EGPA courses: Engineering 1181 and 1182; Math 1151 and 1172; Chemistry 1250; Physics 1250 and 1251; CSE 1222 (or equivalents#,§). The EGPA is based on the best grade earned in a given course. Therefore if a course is taken multiple times, only the highest grade earned will be used in the EGPA calculation. Note that in some cases different courses may be counted as equivalent for meeting a particular curricular requirement, but a better grade in one of those courses does not replace a worse grade in a different one of those courses.

# If a student has credit for Chemistry 1210, which excludes them from taking Chemistry 1250, Chemistry 1220 will be required to complete the ECE chemistry requirement. Chemistry 1210 is not included in the EGPA calculation. If both Chemistry 1220 and 1250 are taken, both are included in the EGPA calculation.

§ If a student has credit for Math 1152 and is excluded from taking Math 1172, then Math 2153 will also be required to complete the calculus requirement prior to admission to major. Math 1152, 1172 and 2153 are all included in the EGPA calculation.

† Prior to summer term 2012, the MGPA was based on all grades earned in a given course. Beginning summer term 2012 the MGPA will be based on the best grade earned in a given semester catalog course. Therefore if a semester catalog course is taken multiple times, only the highest grade earned will be used in the MGPA calculation.

• For students in the Electrical Engineering program of study, major courses are all Electrical and Computer Engineering courses, excluding 2300.
• For students in the Computer Engineering program of study, major courses are the same as above plus these Computer Science and Engineering courses: CSE 2221, 2231, 2321, 2431, 2451, 3241, 3461, 5242, 5361, and 5441.

In order to graduate from one of the BSECE degree programs, a student must have:
1. a CPHR of 2.0 or above in all courses taken at The Ohio State University, and;
2. a MGPA of 2.0 or above in all major courses taken at The Ohio State University.

The following conditions must be met to be considered in good academic standing in the Electrical Engineering program of study or the Computer Engineering program of study.
1. A CPHR of 2.0 or above in all courses taken at The Ohio State University.
2. An EGPA of 2.0 or above in all EGPA courses taken at The Ohio State University.
3. A MGPA of 2.0 or above in all major courses taken at The Ohio State University.

This document also describes the ECE Quarters-to-Semesters (Q2S) transition academic standards and progress policies for students who started at the Ohio State University spring quarter 2012 or earlier, but are graduating summer 2012 or later.

Student who started prior to summer term 2012
For ECE major and pre-major students who started at the Ohio State University prior to summer term 2012 (referred to as transition students in this document), their academic standing at the end of spring quarter 2012 will be evaluated according to the quarter policies, however the letters describing the conditions of probation for their next
semester, session or term of enrollment will be written so that they may be met under this policy.

For these students, if a course from the quarter catalog was taken multiple times, all grades earned in that course are included in the EGPA or MGPA. If a course from the semester catalog is taken multiple times, only the highest grade earned will be used in the MGPA calculation. The new policy on using best grade earned applies only to courses from the semester catalog.

These transition students are being given a choice of graduating meeting quarter-curriculum requirements or semester-curriculum requirements. The list of EGPA and MGPA courses differs depending on the requirements being met and the student’s program of study.

- For transition students in either program of study meeting quarter-curriculum requirements the EGPA courses are: Engineering 181 (1181) and 183 (1182); Math 151, 152, 153 and 254 (1151 and 1172); Chemistry 121 (1250); Physics 131, 132 and 133 (1250 and 1251); and EnGraph 167 (CSE 1222). CSE 221 is included in the EGPA only if EnGraph 167 or any of its equivalents are not taken. All courses equivalent to said courses and any quarter-to-semester transition courses used to complete these sequences will also be included.

- For transition students in either program of study meeting semester-curriculum requirements the EGPA courses are: Engineering 1181 (181) and 1182 (183); Math 1151 and 1172 (151, 152, 153 and 254); Chemistry 1250 (121); Physics 1250 and 1251 (131, 132 and 133); and CSE 1222 (EnGraph 167). All courses equivalent to said courses and any quarter-to-semester transition courses used to complete these sequences will also be included.

- For transition students in the Electrical Engineering program of study meeting either quarter-curriculum or semester-curriculum requirements the MGPA courses are: all Electrical and Computer Engineering courses, excluding 300, 309, 320, 2300, 2300.01 and 2300.02.

- For transition students in the Computer Engineering program of study meeting either quarter-curriculum or semester-curriculum requirements the MGPA course are: all Electrical and Computer Engineering courses, excluding 300, 309, 320, 2300, 2300.01 and 2300.02; plus these Computer Science and Engineering courses: CSE 222, 321, all other 500-level and above courses from the quarter catalog (excluding 548, 675.01, 675.02, and 676), CSE 2221, 2231, 2321, 2431, 2451, 3241, 3461, 5242, 5361, and 5441. Any quarter-to-semester transition courses used to complete the CSE 2221-2231 sequence will also be included.
Academic Sanctions

The University has established two forms of academic sanctions for students not performing to minimum academic standards or who are not making progress toward their degree.

1. **Academic probation.** Any student who has accumulated fifteen or more deficiency points shall be placed on academic probation (see University Rule 3335-9-25A). If the student’s college or school considers a student’s progress as unsatisfactory in meeting the conditions placed on his or her probation, the college or school shall be empowered to dismiss him or her from the University (see University Rule 3335-9-26).

2. **Probation by Special Action.** If at any time the preparation, progress or success of a student in his or her academic program is determined to be unsatisfactory, the college or school in which the student is registered shall be empowered to place him or her on academic probation (see University Rule 3335-9-25B). A student on special action probation is subject to dismissal from the department or college if he or she fails to meet the conditions placed on his or her probation.

Status for Special Action Probation (SAP) is determined at the end of each semester and at the end of summer term. The evaluation conducted at the end of each semester will consider the student’s performance in both sessions of that semester, as well as the full semester. The evaluation conducted at the end of summer term will consider the student’s performance in May term, summer session and summer term.

After being placed on SAP, the satisfaction of SAP terms, return to good academic standing, continuation of SAP, and departmental or college dismissals are determined at the end of the student’s next semester or summer term of enrollment. All exceptions to the SAP policies below and any SAP for Lack of Progress cases are brought before the Academic Standards and Progress subcommittee of the College of Engineering’s College Committee on Academic Affairs (CCAA).

At the end of each semester or summer term all students being placed on SAP, continued on SAP being taken off SAP, or being dismissed from the department will be sent a letter by email to their official OSU email address indicating the student’s academic status at that point and any terms of probation. Should this email not be received by the student before the first day of classes of the subsequent semester or summer term, it is the student’s responsibility to contact his or her academic advisor to learn of their academic standing. A copy of this letter will also be placed in the student’s record on Advising Connect.

Electrical and Computer Engineering has three forms of SAP: 1) SAP for Grades; 2) SAP for Lack of Progress; and 3) SAP After Reinstatement.

The remainder of the Special Action Probation policy for the Electrical and Computer Engineering undergraduate programs is described in three sections. The first section is the SAP policy for students in the ECE major, the second section is the SAP policy for pre-ECE students, and the third section covers additional points common to the major and pre-major policies.
Special Action Probation (SAP) for Majors

SAP FOR GRADES Students can be placed on SAP for failure to meet the conditions to be considered in good academic standing.

Conditions for going on SAP for Grades (for major students):
1. An ECE major student with CPHR < 2.0 is placed on SAP for Grades. This student will also be on University Academic Probation by Special Action, (see University Rule 3335-9-25B).
2. An ECE major student who has more than 4 hours in major classes on his or her transcript is placed on SAP for Grades if his or her MGPA is less than 2.0. ECE transfer credit is included in the sum for the 4 hour threshold, but only courses taken at OSU are included in the MGPA calculation.
3. An ECE major student with a CPHR of 2.0 or better but a MGPA below 2.0, and who has 4 or fewer hours in major classes on his or her transcript, will be issued a letter of warning, sent by email to the students official OSU email address.

Conditions for Returning to Good Standing (for major students): If the student achieves CPHR ≥ 2.0 and MGPA ≥ 2.0, without withdrawing from or receiving an incomplete for any course (no “W” or “I” marks), he or she will be returned to good standing.

If a student achieved CPHR ≥ 2.0 and MGPA ≥ 2.0 but also earned “W” or “I” marks, even with the permission of his or her academic advisor, he or she will be issued a letter of warning about the potential for future SAP for lack of progress, sent by email to the students official OSU email address.

Conditions of Continuing on SAP for Grades (for major students): Students placed on SAP for Grades will be given terms of probation. For major students the terms are typically:
1. If CPHR < 2.0, cumulative deficiency points must be reduced by 5 if the student is full time, and by 0.4 for each credit hour of letter graded courses taken if less than full time. If CPHR ≥ 2.0, must earn grades to keep it 2.0 or greater.
2. If MGPA < 2.0
   • The student must take at least one major course and improve the MGPA (change in MGPA must be positive).
   • If a student’s next enrollment is during summer term and a major course appropriate to the student’s program is not available, the student may be exempted from this requirement for that term, with permission of his or her academic advisor. In such a case the student must earn a SGPA ≥ 2.0.
   If MGPA ≥ 2.0, must earn grades to keep it 2.0 or greater.
3. Must not withdraw from or receive an incomplete for a course (“W” or “I” marks) without permission of his or her ECE academic advisor.
4. Meet with his or her academic advisor by the end of the first week of classes and as additionally specified.

If the student has met the terms of probation but has not met the conditions for leaving SAP and returning to good standing, he or she will be continued on SAP.

Conditions for Department Dismissal: Students who do not meet the terms of probation will be dismissed from the Department of Electrical and Computer Engineering.

Conditions for College Dismissal: Major students who are dismissed from the Department of Electrical and Computer Engineering with a CPHR of less than 2.0 are also subject to dismissal from the College of Engineering.

SAP FOR LACK OF PROGRESS (for major students) Students can be put on SAP for failure to make progress towards a degree in Electrical and Computer Engineering.

Conditions for going on SAP for Lack of Progress (for major students):
1. Multiple “W” or “I” marks that prevent the student from making progress in the Electrical Engineering curriculum or Computer Engineering curriculum.
2. Not taking courses in his or her Electrical Engineering curriculum or Computer Engineering curriculum for
two consecutive semesters or summer terms of enrollment.
3. Not having completed English 1110.
4. Remaining in a class for which they are not eligible due to earning a mark of “E”, “EN”, “W” or “I” in a prerequisite course.

Students placed on SAP for Lack of Progress will be given terms of probation. For major students the terms are typically:
1. Address specific problems cited, e.g. if not completed English 1110, must due so.
2. Enroll in and complete at least one course in their Electrical Engineering or Computer Engineering curriculum.
3. Earn grades to maintain CPHR and MGPA at 2.0 or better.
4. Must not withdraw from or receive an incomplete for a course (“W” or “I” marks).
5. Meet with their academic advisor by the end of the first week of classes and as additionally specified.

Conditions for Returning to Good Standing (for major students): Students will be removed from SAP for Lack of Progress and be in good academic standing if they:
• complete a semester or summer session that includes courses in their Electrical Engineering or Computer Engineering curriculum without receiving any “W” or “I” marks, and
• have at least a 2.0 CPHR and MGPA, and
• meet any specific terms cited in their letter of probation.

Conditions for Continuing on SAP, for Grades (for major students): Students on SAP for Lack of Progress will be continued on SAP, for Grades, if they complete a semester or summer session that includes courses in their Electrical Engineering or Computer Engineering curriculum without receiving any W or I marks, but do not have at least a 2.0 CPHR and MGPA.

Conditions for Department Dismissal: Students on SAP for Lack of Progress will be dismissed from the Department of Electrical and Computer Engineering if they do not meet the terms required to continue on SAP, for Grades, or to return to good standing.

Conditions for College Dismissal: Major students on SAP for Lack of Progress who are dismissed from the Department of Electrical and Computer Engineering are also subject to dismissal from the College of Engineering if their CPHR is less than 2.0 or if they did not take technical courses applicable to other engineering majors.

SAP FOR REINSTATED STUDENTS (for major students) All students who are reinstated to the Department of Electrical and Computer Engineering are automatically placed on SAP for their next semester or summer term of enrollment.

Conditions for Returning to Good Standing (for major students): If the student achieves CPHR ≥ 2.0 and MGPA ≥ 2.0, without withdrawing from or receiving an incomplete for any course (no “W” or “I” marks), he or she will be returned to good standing.

If a student achieved CPHR ≥ 2.0 and MGPA ≥ 2.0 but also earned “W” or “I” marks, even with the permission of his or her academic advisor, he or she will be issued a letter of warning about the potential for future SAP for lack of progress, sent by email to the students official OSU email address.

Conditions for Continuing on SAP for Grades (for major students): Students placed on SAP after reinstatement will be given terms of probation. For major students the terms are typically:
1. A prescribed schedule of courses, and possibly restrictions on work hours.
2. If CPHR < 2.0, cumulative deficiency points must be reduced by 5 if the student is full time, and by 0.4 for each credit hour of letter graded course taken if less than full time. If CPHR ≥ 2.0, must earn grades to keep it ≥ 2.0 or greater.
3. If MGPA < 2.0
   • The student must take at least one major course and improve the MGPA (change in MGPA must be
positive).

- If a student’s next enrollment is during summer term and a major course appropriate to the student’s program is not available, the student may be exempted from this requirement for that term, with permission of his or her academic advisor. In such a case the student must earn a SGPA ≥ 2.0. If MGPA ≥ 2.0, must earn grades to keep it 2.0 or greater.

4. Must not withdraw from or receive an incomplete for a course (“W” or “I” marks) without permission of his or her ECE academic advisor.

5. Meet with his or her academic advisor by the end of the first week of classes and as additionally specified. If the student has met the terms of probation but has not met the conditions for leaving SAP and returning to good standing, he or she will be continued on SAP for Grades.

**Conditions for Department Dismissal:** If the student does not meet the terms of probation he or she will be dismissed from the Department of Electrical and Computer Engineering.

**Conditions for College Dismissal:** Major students who are dismissed from the Department of Electrical and Computer Engineering with a CPHR of less than 2.0 are also subject to dismissal from the College of Engineering.
Special Action Probation for Pre-Majors (PRE-ECE SAP)

SAP FOR GRADES Students can be placed on SAP for failure to meet the conditions to be considered in good academic standing.

Conditions for going on SAP for Grades (for pre-major students):
1. ECE pre-major students are placed on SAP for Grades if either of their CPHR or EGPA is less than 2.0. A student with CPHR less than 2.0 will also be on University Academic Probation by Special Action. (see University Rule 3335-9-25B)
2. An ECE pre-major student who has more than 4 hours in major classes on his or her transcript is placed on SAP for Grades if his or her MGPA is less than 2.0.
   - New first semester freshmen with CPHR and EGPA 2.0 or better will not be placed on SAP due to MGPA less than 2.0 until they have completed two semesters or a semester and a summer term at OSU. They will be issued a letter of warning instead, sent by email to the students official OSU email address.
   - New transfer students may be placed on SAP due to MGPA less than 2.0 at the end of their first semester or summer term at OSU. ECE transfer credit is included in the sum for the 4 hour threshold, but only courses taken at OSU are included in the MGPA calculation.
3. If CPHR ≥ 2.0 and EGPA ≥ 2.0, an ECE pre-major student with a MGPA below 2.0 who has 4 or fewer hours in major classes on his or her transcript will be issued a letter of warning, sent by email to the students official OSU email address.

Conditions for Returning to Good Standing (for pre-major students): If the student achieves CPHR ≥ 2.0, EGPA ≥ 2.0, and MGPA ≥ 2.0, without withdrawing from or receiving an incomplete for any course (no “W” or “I” marks), he or she will be returned to good standing. If a student achieved CPHR ≥ 2.0, EGPA ≥ 2.0, and MGPA ≥ 2.0 but also earned “W” or “I” marks, even with the permission of his or her academic advisor, he or she will be issued a letter of warning about the potential for future SAP for lack of progress, sent by email to the students official OSU email address.

Conditions of Continuing on SAP for Grades (for pre-major students): Students placed on SAP for Grades will be given terms of probation. For pre-major students the terms are typically:
1. If CPHR < 2.0, cumulative deficiency points must be reduced by 5 if the student is full time, and by 0.4 for each credit hour taken if less than full time. If CPHR ≥ 2.0, must earn grades to keep it 2.0 or greater.
2. If EGPA < 2.0
   - Take at least one EGPA course and improve the EGPA (change in EGPA must be non-zero and positive).
   - If a student’s next enrollment is during summer term and an EGPA course appropriate to the student’s program is not available, the student may be exempted from this requirement for that term, with permission of his or her academic advisor. In such a case the student must earn a SGPA ≥ 2.0. If EGPA ≥ 2.0, must earn grades to keep it 2.0 or greater.
3. If MGPA < 2.0
   - If the student has fewer than 4 hours in major classes on his or her transcript and takes additional major classes, he or she should strive to improve his or her MGPA, but it is not yet a term of probation.
   - If the students has more than 4 hours in major classes on his or her transcript, any change in MGPA must be positive. If MGPA ≥ 2.0, must earn grades to keep it 2.0 or greater.
4. Must not withdraw from or receive an incomplete for a course (“W” or “I” marks) without permission of his or her ECE academic advisor.
5. Meet with his or her academic advisor by the end of the first week of classes and as additionally specified. If the student has met the terms of probation but has not met the conditions for leaving SAP and returning to good standing, he or she will be continued on SAP.

Conditions for Department Dismissal: If the student does not meet the terms of probation he or she will be dismissed from the Department of Electrical and Computer Engineering.
SAP FOR LACK OF PROGRESS (for pre-major students) Pre-major students can be put on SAP for failure to make progress towards entry into the Electrical and Computer Engineering major.

Conditions for going on SAP for Lack of Progress (for pre-major students):
1. Multiple “W” or “I” marks that prevent the student from making progress toward entering the ECE major.
2. Not taking any EGPA courses for two consecutive semesters or summer terms of enrollment.
3. Taking the same class more than three times or repeating too many classes.
4. Remaining in a class for which they are not eligible due to earning a mark of “E”, “EN”, “W” or “I” in a prerequisite course.

Students placed on SAP for Lack of Progress will be given terms of probation. For pre-major students the terms are typically:
1. Address specific problems cited.
2. Enroll in and complete at least one EGPA course.
3. Earn grades to maintain CPHR, SGPA and MGPA at 2.0 or better.
4. Must not withdraw from or receive an incomplete for a course (“W” or “I” marks).
5. Meet with their academic advisor by the end of the first week of classes and as additionally specified.

Conditions for Returning to Good Standing (for pre-major students): Students will be removed from SAP for Lack of Progress and be in good academic standing if they:
• complete a semester or summer session that includes EGPA courses without receiving any W or I marks, and
• have at least a 2.0 CPHR, EGPA and MGPA, and
• meet any specific terms cited in their letter of probation.

Conditions for continuing on SAP, for Grades (for pre-major students): Students on SAP for Lack of Progress will be continued on SAP, for Grades, if they complete a semester or summer session that includes an EGPA course without receiving any “W” or “I” marks, but do not have at least a 2.0 CPHR and EGPA. If MGPA is less than 2.0 they may be either continued on SAP for Grades or issued a letter of warning, as described in the pre-major SAP for grades section.

Conditions for Department Dismissal: Students on SAP for Lack of Progress will be dismissed from the Department of Electrical and Computer Engineering if they do not meet the terms to continue on SAP, for Grades, or to return to good standing.

Conditions for College Dismissal: Pre-major students on SAP for Lack of Progress who are dismissed from the Department of Electrical and Computer Engineering are also subject to dismissal from the College of Engineering if they did not take technical courses applicable to entry into other engineering majors.

SAP FOR REINSTATED STUDENTS (for pre-major students) All students who are reinstated to the Department of Electrical and Computer Engineering are automatically placed on SAP for their next semester or summer term of enrollment.

Conditions for Returning to Good Standing (for pre-major students): If the student achieves CPHR ≥ 2.0, EGPA ≥ 2.0, and MGPA ≥ 2.0, without withdrawing from or receiving an incomplete for any course (no “W” or “I” marks), he or she will be returned to good standing

If a student achieved CPHR ≥ 2.0, EGPA ≥ 2.0, and MGPA ≥ 2.0 but also earned “W” or “I” marks, even with the permission of his or her academic advisor, he or she will be issued a letter of warning about the potential for future SAP for lack of progress, sent by email to the students official OSU email address.

Conditions for Continuing on SAP for Grades (for pre-major students): Students placed on SAP after reinstatement will be given terms of probation. For pre-major students the terms are typically:
1. A prescribed schedule of courses, and possibly restrictions on work hours.

2. If CPHR < 2.0, cumulative deficiency points must be reduced by 5 if the student is full time, and by 0.4 for each credit hour taken if less than full time. If CPHR ≥ 2.0, must earn grades to keep it 2.0 or greater.

3. If EGPA < 2.0
   - Take at least one EGPA course and improve the EGPA (change in EGPA must be non-zero and positive).
   - If a student’s next enrollment is during summer term and an EGPA course appropriate to the student’s program is not available, the student may be exempted from this requirement for that term, with permission of his or her academic advisor. In such a case the student must earn a SGPA ≥ 2.0.
   - If EGPA ≥ 2.0, must earn grades to keep it 2.0 or greater.

4. If MGPA < 2.0
   - If the student has fewer than 4 hours in major classes on his or her transcript and takes additional major classes, he or she should strive to improve his or her MGPA, but it is not yet a term of probation.
   - If the student has more than 4 hours in major classes on his or her transcript, any change in MGPA must be positive.
   - If MGPA ≥ 2.0, must earn grades to keep it 2.0 or greater.

5. Must not withdraw from or receive an incomplete for a course (“W” or “I” marks) without permission of his or her ECE academic advisor.

6. Meet with his or her academic advisor by the end of the first week of classes and as additionally specified.

If the student has met the terms of probation but has not met the conditions for leaving SAP and returning to good standing, he or she will be continued on SAP for Grades.

**Conditions for Department Dismissal:** If the student does not meet the terms of probation he or she will be dismissed from the Department of Electrical and Computer Engineering.

**Issues Common to both Major and Pre-major SAP Policies**

**Appeal of ASAP Subcommittee Actions**

Students should first consult with their academic advisor to discuss the detailed basis for the ASAP Subcommittee’s action. The academic advisor in consultation with the chair of the ECE Undergraduate Studies Committee will determine if new information is available that would change the Department’s recommendation to the ASAP Subcommittee. If this is the case, the Undergraduate Studies Committee chair will make a new recommendation to the chair of the ASAP subcommittee. The chair of the ASAP subcommittee will then make a decision on behalf of the ASAP Subcommittee based on Article 8.13 of the ASAP Subcommittee’s Operating Procedures.

If the student finds this review unsatisfactory, the student may prepare a petition asking the ASAP Subcommittee to reconsider its decision. The petition should be submitted to the chair of the ASAP Subcommittee and should include at least the following:

a) A restatement of the part of the ECE ASAP policy on which the ASAP Subcommittee’s action was based.

b) If the student believes that the data or the interpretation of the available data is in error, the student should so indicate.

c) If the student believes the information originally supplied to the ASAP Subcommittee was substantially correct but that there are extenuating circumstances that the committee should consider, these circumstances should be explained.

d) The student should indicate what has changed in his or her circumstances to enable him or her to be successful in his or her program, should a favorable decision be made by the ASAP subcommittee

The appeal will be evaluated according to the policies of the ASAP Subcommittee.

**Notification of Departmental Policy for Academic Standards to Students:**
The academic standards policy is published on the ECE web site. All incoming freshman and transfer students are instructed on the policy in the ECE introduction to engineering survey class. A link to the policy is included in all admission to major letters and all probation letters.

**Reinstatement to the Major or Pre-major**

A student dismissed once from the ECE programs may petition to be reinstated, typically after two semesters or one semester and a summer term have elapsed.

A reinstated student dismissed a second time from the ECE programs is not eligible to apply for reinstatement to the ECE programs, except under the University Fresh Start Rule, which requires a five year absence from the university.

Petitions for reinstatement must be submitted early in the semester or summer term preceding the semester or summer term you are eligible for reinstatement (e.g. early in autumn semester to be eligible for reinstatement in spring semester). Students intending to apply for reinstatement are advised to check with the College of Engineering at the beginning of the semester or summer term your petition is due for specific dates of deadlines.
11 December 2013

TO:  CCAA

FR:  Bob Gustafson, Director EEIC

RE:  Proposed Guidelines for Undergraduate Minors

I have reviewed the “Report on Review of Undergraduate Minors” done by Subcommittee B, CAA November 27, 2013 DRAFT and would like to make a few observations regarding the “Proposed Guidelines for Undergraduate Minors at OSU”. Let me first say that I am very much in favor of Recommendations for the Future in the Report. However, I have some reservations about some specific items within the proposed Guidelines. I will try to highlight those below.

1) under Credit hours required:
   • 1000-level courses shall not be counted toward the minimum.

For reference, I am including the Faculty Rule on course numbering.

3335-8-05 University classification and course numbering system.
(A) Courses numbered 1000-1099 are undergraduate non-credit courses for orientation, remedial, or other non-college-level experiences. These courses are in addition to a program’s graduation requirements.
(B) Courses numbered 1100-1999 are introductory level courses providing undergraduate credit, but shall not be counted on a major or field of specialization in any department. Courses at this level are beginning courses, required or elective courses that may be prerequisite to other courses.
(C) Courses numbered 2000-2999 are intermediate level courses providing undergraduate credit and may be counted for a major or field of specialization.
(D) Courses numbered 3000-3999 are upper-level courses providing undergraduate credit that may be counted toward a major or field of specialization.

Within the Engineering Sciences minor we currently have two requirements for which 1000 level courses are required and count towards the minimum credits and that I think are appropriate. These are 1) Core requiring ENGR 1181.xx and 1182.xx or alternatively 1281.xxH and 1282.xxH and 2) Computation Technology Options which include a number of CSE 1XXX courses and ENGR 1221. When the Engineering Sciences minor was approved, including by Arts and Sciences, these courses were approved for use as part of the minor. They are rigorous courses that I think are still very appropriate to count as credits towards minor. Higher level programming courses would have these courses as prerequisites and would therefore inadvertently increase the number of hours in the minor if the requirement was raised to a higher level.

I would concur that 1000-1099 courses in the semester number system should not be allowed. I do not think all 1000-level courses should be categorically removed in this way. I would see that our alternatives here would be:
   a) Ask for special case deviations for this minor to use courses >1099 to count towards minimum credits for the minor. This would be consistent with our current practice.
   b) Renumber all of Introduction to Engineering course sequences and 1XXX programming courses to the 2XXX.xx level.
c) Recommend that this Guideline be changed to 1000 to 1099-level courses shall not be counted toward the minimum.

2) under Upper-level/3000+ level credit hours
   • Minor must include at least 6 hours at the 3000-level and above.

Within the engineering sciences minor, students could currently complete the minor with a minimum of 3 credits in the category. This would be through the Capstone Experience category which has a minimum of 3 credits.

I would recommend that we have a minimum of 3 credit hours 3000-level and above for this minor or the Engineering Sciences Minor be exempted from this guideline.

3) under Overlap with the major
   • The minor must be in a different subject than the major

In Engineering we work exclusively with individual tagged degrees and, therefore, do not have multiple majors within a single degree. If it is interpreted that all engineering degrees are “the same major”, engineering, this would limit engineering students from taking the newly proposed Humanitarian Engineering minor or existing minors such as Environmental Engineering and Nuclear Engineering.

If each engineering degree program is considered an independent “major”, this should not be an issue.

   • No overlap with Majors permitted

Again, in Engineering we work exclusively with individual tagged degrees and therefore do not have multiple majors within a single degree. I would interpret this, in our case, to mean no overlap with courses beyond those meeting General Education and Core Engineering requirements. This would be very limiting to our engineering students. It would, in a number of minors offered both by engineering and outside of engineering, require students to take additional credits and likely detract from use of minors. It would eliminate use of a multi-disciplinary capstone design experience that would be excellent for both the degree program and a minor, as may be the case in the humanitarian engineering minor. It would also eliminate double counting of what might be appropriate technical electives for the degree and courses for a minor requirement. Our current College Policy statement says:

6. There is no College of Engineering rule barring double counting of courses taken as part of a Major and Minor, including GE courses. Any double counting must be approved by the student’s Major Program as it may have rules affecting this practice.

This is based on a philosophy that a minor represents a coherent learning experience in a specific domain, but this domain may have overlap or natural synergies with the degree program/major.

I would suggest that if the University guideline was changed to state the following, it would meet our needs:

   • Any overlap beyond General Education requirements must be approved by the students degree program/major

I realize that this leads to a more complicated system with less uniformity of requirements across the University. I suggest that the College of Engineering maintain its current policy in this regard.