

ECE Undergraduate Studies Committee
Minutes
February 19th, 2018

Present: Dean Aslam, Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies) Prem Chahal, Lixin Dong, Sean Fochtman, Erik Goodman, Andrew Mason (Chair), Abby McQuade, Ed Rothwell, Greg Wierzba

The meeting was called to order at 11:00 a.m.

1. The agenda was approved.
2. The minutes from the February 12th meeting were approved.
3. Discussion on peer institutions EE requirements. It was observed that other programs allowed for more flexibility in the selection of upper level classes than our current program allows.
4. Proposal to change Electrical Engineering major elective requirements. It was proposed that students would select a minimum of 18 credits, at least two out of three areas, one course must include a lab and that 12 credits must be in ECE courses. The remaining six credits could come from other 400 level engineering courses, mathematics or science courses. There was a motion to vote and seconded. The motion passed unanimously.

The meeting was adjourned at 12:05 p.m.

Respectfully submitted,
Sean Fochtman

ECE Undergraduate Studies Committee

Draft Minutes

Feb. 12, 2018

Present (all): Dean Aslam, Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies), Virginia Ayres, Prem Chahal, Lixin Dong, Sean Fochtman, Erik Goodman, Andrew Mason (Chair), Abby McQuade (Student Representative), Edward Rothwell (Representative to College UGSC), Gregory Wierzba.

The meeting was called to order at 11:00 a.m. by Andrew Mason.

1. Minutes from 1/29/18 and 2/5/18 meetings were approved.
2. Andrew Mason reported the flexibility of MSU definition of “concentrations”.
3. Andrew Mason reported last week’s action items
 - (1) Prem has been tasked with working with other faculty to consider proposing a new ECE474
 - (2) A proposed CpE curriculum has been sent to CSE for feedback; aiming at opening a communication path with CSE and requesting to add ECE prerequisites.
 - (3) Mason met with Papapolymerou on Thr Feb 8 to discuss issue of ECE students taking CSE courses.
 - (4) Mason has asked several CPE-group faculty to consider issue of ECE410 and ECE374 and moving ECE410 out of the CPE ‘core’ electives.
4. Philosophy on EE Curriculum:
 - (1) EE breadth: Committee discussed if 300-level courses (8 courses) are sufficient for EE breadth
 - (2) Committee members were assigned to investigate a peer university each to determine how many non-elective (semester) credits are in the EE BS program and how many required & scripted 400-level credits.
5. EE major electives:
 - (1) New proposal:
 - 1) Motivations: minimize any additional requirements and focus on allowing more student choice
 - 2) Two options of discipline areas: 8 or 3 areas
 - 3) Updated Concentrations
 - (2) The committee discussed the new proposal on motivations to make changes, number and division of areas, and concentrations and who should drive this.

The meeting was adjourned at 12:00 p.m.

Respectfully submitted,
Lixin Dong

ECE Undergraduate Studies Committee
Draft Minutes
Feb. 02, 2018

Present: Dean Aslam, Prem Chahal, Lixin Dong, Sean Fochtman, Andrew Mason (Chair), Abby McQuade (Student Representative), Ed Rothwell, Greg Wierzba.

The Meeting was convened by Andrew Mason at 11:00 a.m.

1. The minutes from the previous meeting (1/29/18) will be approved at the next meeting (2/12/2018).
2. ECE 474:
 - a) Prem to discuss a potential new ECE474 with Tim Hogan, Nelson Sepulveda, and Virginia Ayres.
 - b) Need a temporary solution for students planning to take ECE474 during the transition period.
3. Electives:
 - a) Current elective requirement: 18 credits (6 courses) from 4 (of 7) areas.
 - b) Possible course re-organization was discussed (ME course organization was used as an example)
 - Goal: Align the courses such that students can explore subjects more deeply and increase their technical skills.
 - o Potentially arrange electives in concentrations (e.g., Wireless, Electronics and Instrumentations, Security).
4. Andrew to talk to John Papapolymerou about challenges associated with ECE students trying to enroll in CSE courses.

The meeting was adjourned at 12:10 p.m.

Respectfully submitted,

Prem Chahal

ECE Undergraduate Studies Committee
Minutes of Meeting on 01/29/18

Members: Dean Aslam, Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies), Virginia Ayres, Prem Chahal, Lixin Dong, Sean Fochtman, Erik Goodman, Andrew Mason (Chair), Abby McQuade (Student Representative), Ed Rothwell, Greg Wierzba (*all present*).

1. The Meeting was convened by Andrew Mason at 11:04 a.m.
2. The minutes from the previous meeting (1/22/18) were approved with amendments.
3. ***ECE374 and CPE Degree:*** Andrew Mason initiated the discussion on the changes in CPE degree program. It was pointed out that too many prerequisites for ECE 374 may cause a problem.
4. ***EE Major Electives:*** Different ideas were discussed using the ME UG courses as an example. ECE477 was discussed briefly without reaching any conclusion.
5. A letter to UGSC by Elias Strangas, distributed at the meeting, appreciated the UGSC's efforts to make changes in the offering of 400 level courses on one hand but expressed concerns on the other. This letter was mentioned in the meeting without any discussion.
6. The meeting was adjourned at 12:06 p.m.
7. The next meeting will be on February 5, 2018.

Meeting Agenda

1. Assign minutes taker (last: Ayres);
2. Approval of minutes from 12/22/17
3. new ECE374 and CpE degree;
4. EE major electives (see proposal below)
5. define semester of offering for new 400-levels (417, 426, 430, 431, 433)
6. New business?
7. Next meeting
 - a. review/approve ECE374 new course form (Chahal please email final to everyone)
 - b. review/approve ECE431 new course form (Mason please email draft to everyone)
 - c. proposed new CPE curriculum
8. Adjourn

Submitted by,

Dean Aslam

ECE Undergraduate Studies Committee
Minutes of Meeting Held on 01/22/18

Present (in bold): Dean Aslam, **Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies)**, **Virginia Ayres**, **Prem Chahal**, **Lixin Dong**, **Sean Fochtman**, Erik Goodman, **Andrew Mason (Chair)**, **Abby McQuade (Student Representative)**, **Edward Rothwell (Representative to College UGSC)**, **Gregory Wierzba**.

1. The meeting was convened at 10:02 a.m. by Andrew Mason.
2. Minutes from the meeting on December 7th were unanimously approved with no amendments.
3. A recap of completed actions from Fall2017 was given by Andrew Mason, Chair:
 - a. ECE 366 as a requirement for CPE majors was approved
 - b. Changes (additions and deletions) to ECE 466 course content were approved
 - c. Approval was given to remove ME 201 Thermo and CE 221 Statics from the required program for EE majors.
 - d. Approval was given to suspend ECE 411 and ECE 412 starting in F18-S19 (not taught or listed but number remains available)
 - e. ECE 491: Embedded Cyber-physical Systems and ECE 491: Smart Sensor Systems will be added to the F18-S19 course offerings, respectively
4. Further discussion of revisions to ECE 474: Principles of Electronic Devices to restructure it as a 300-level course was given by Prem Chahal.
5. New business: the re-structuring of EE and CPE major course requirements into Technology Area tracks was initiated by Andrew Mason, Chair. Each track will be designated as a concentration, which is an officially recognized College of Engineering designation recorded on the student's transcript.
6. With participation by all committee members, an initial draft was produced that grouped all 400 level course offerings into the following Areas, with minimal overlap:
 - a. Biomedical Engineering (present status as a concentration)
 - b. Energy Systems
 - c. Cyber Physical Systems: a. Hardware and b. Software
 - d. Internet of Things
 - e. Instrumentation
 - f. Micro and Nano Engineering
 - g. Robotics and Intelligent Manufacturing
 - h. Wireless Communications

7. The meeting was adjourned at 12:00 pm.

Submitted by,
Virginia Ayres

ECE Undergraduate Studies Committee
Draft Minutes
December 7, 2017

Present: Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies), Prem Chahal, Sean Fochtman, Andrew Mason (Chair), Abby McQuade (student representative), Ed Rothwell, Greg Wierzba

The meeting was called to order at 10:05 a.m.

1. The agenda was approved.
2. The minutes of the November 30th meeting were approved.
3. New CPE courses, ECE 430 and 431, will be added as ECE 491s for Fall 2018 and Spring 2019, respectively. Eventually, ECE 430 will be co-listed with ECE 830 and offered every Fall.
4. An ECE 489 proposal from a CPE senior student was evaluated and approved.
5. Updates on undergraduate course changes and additions
 - a. New energy systems courses were discussed.
 - b. Changes to ECE 466 were approved with amendments.
 - c. A discussion on revising the structure of the major electives for EE majors was held.

The meeting was adjourned at 11:00 a.m.

Respectfully submitted,
Selin Aviyente

ECE Undergraduate Studies Committee
Minutes
30 November 2017

Present: Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies), Abby McQuade (Student Representative), Sean Fochtman, Andrew Mason (Chair), Ed Rothwell, Greg Wierzba

The meeting was called to order at 10:00 a.m.

1. The minutes of the 9 November 2017 meeting was approved.
2. The Committee discussed possible prerequisites for the proposed 300-level solid state course. Committee members agreed that ECE 202 would be an appropriate prerequisite for reasons of both technical background and maturity.
3. The Committee decided that offerings of ECE 411 will be suspended for the academic year 2018-2019 in preparation for its eventual elimination.
4. A. Mason informed the Committee that a new embedded systems course will be taught under ECE 491 in Fall 2018, and a new course in smart sensors will be taught under ECE 491 in Spring 2019.
5. A course change for ECE 446 was presented by S. Aviyente. The only change is the removal of ECE 466 as an associated course (which prevents students from taking both ECE 446 and ECE 466). The course change was approved.
6. A course change for ECE 466 was presented by S. Aviyente. Changes are threefold. First, ECE 446 is removed as an associated course. Second, the title is changed slightly to remove mention of filters. Third, the course description and associated topics are changed to better reflect what is currently taught in the class. The course change was approved.
7. A. Mason described updates to the CSE curriculum. One change that impacts the CpE program is the renumbering of CSE 410 (required for CpE majors) to the 300-level. The impact should be slight, depending on associated changes to prerequisites which are yet to be decided.
8. The Committee began to discuss the structure of the senior elective requirement in the EE program. Discussion will continue in future meetings.

The next meeting of the Committee is on December 7, 2017, at 10:00 am.

The meeting adjourned at 11:10 a.m.

Respectfully submitted,
Ed Rothwell

ECE Undergraduate Studies Committee
Minutes
November 9th, 2017

Present: Virginia Ayres, Prem Chahal, Andrew Mason (Chair), Abby McQuade (student representative), Joydeep Mitra (Guest), Ed Rothwell

The meeting was called to order at 10:00 a.m.

1. The agenda was approved.
2. The minutes of the October 26th meeting were approved as amended.
3. Updates on undergraduate course changes and additions
 - a. J. Mitra presented ideas on energy related UG courses
 - i. There is interest from power group to offer 400-level energy related courses (potentially two courses)
 - ii. “Overlapping” these courses with 800-level is a viable option. In particular, with 800-level courses currently being offered by J. Mitra
 - iii. Tabulate all courses being offered across campus and decide if a minor in energy can be offered from ECE
 - b. P. Chahal presented outline of the proposed 300-level semiconductor device course. Also discussed its impact on existing 300- and 400-level courses, and starting of a new 400-level course in the area of renewables
 - i. Course material from ECE 474 to be moved to the proposed 300-level course
 - ii. Make it a required course for Electrical Engineering students
 - iii. Prerequisites: PHY 183 & 184
 - iv. Prerequisite to 477 and renewable energy course (see vii)
 - v. Restrictions: Open only to juniors or seniors or graduate students in the ECE or CmpE.
 - vi. To be offered twice a year (Fall and Spring)
 - vii. Discussed option to start a 400-level renewable energy course (covering solar cells, thermoelectric devices, etc.) in place of ECE474. Needs further discussion.

The meeting was adjourned at 11:00 a.m.

Respectfully submitted,
Prem Chahal

ECE Undergraduate Studies Committee
Minutes
October 26th, 2017

Present: Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies), Erik Goodman, Andrew Mason (Chair), Abby McQuade (student representative), Ed Rothwell, Greg Wierzba

The meeting was called to order at 10:00 a.m.

1. The agenda was approved.
2. The minutes of the October 12th meeting were approved as amended.
3. The next two meeting dates for Fall semester were set as November 9th and November 30th.
4. A request by two EE major senior students to count BE 475 International Studies in Biosystems Engineering as a major elective was discussed and approved.
5. Updates on undergraduate course changes and additions
 - a. Discussion on changes to and merging of ECE 410 and ECE 412 were discussed. It was suggested that ECE 412 be offered as a joint undergraduate/graduate class with ECE 832. ECE 410 content will be changed to emphasize analog circuit design and to make it a core course in Computer Engineering.
 - b. J. Mitra is working on a new energy based course and will be invited to come to the next meeting.
 - c. V. Srivastava and X. Tan are working on an undergraduate robotics course.
 - d. The motion to remove associations between ECE 446 and ECE 466 was approved.

The meeting was adjourned at 11:00 a.m.

Respectfully submitted,
Selin Aviyente

ECE Undergraduate Studies Committee
Minutes
October 12th, 2017

Present: Dean Aslam, Selin Aviyente (ex officio, Associate Chair for Undergraduate Studies) Virginia Ayres, Sean Fochtman, Andrew Mason (Chair), Abby McQuade (student representative), Ed Rothwell, Greg Wierzba

The meeting was called to order at 10:00 a.m.

1. The agenda was approved.
2. The minutes of the September 28th meeting were approved as amended.
3. Undergraduate course changes and additions
 - a. Discussion on structure of ECE 466 to lab based course with primary focus on Digital Signal Processing. Also discussion on definition of associated courses as pertains to ECE 446 and 466. Mason to assess associated course definition.
 - b. Mason plans to discuss with Srivastava about robotics course and Mitra on his course and how it approaches energy topics.
 - c. Discussion on ECE 410 and ECE 412 merge and possible removal of ECE 410 or ECE 412.
 - d. Mason proposes non-mandatory senior electives in cyber physical systems and smart sensors, possibly offered as graduate/undergraduate courses.
 - e. Discussion on number of 300 level courses to include in curriculum. Also discussion on feasibility of course additions as pertains to faculty and resources.
4. New 300 level semiconductor class
 - a. Chahal asked to present next time on what the potential prerequisites would be and how to fit the course in to the curriculum. Previously discussed eliminating the CE 221/ME 201 requirement.

The meeting was adjourned at 11:00 a.m.

Respectfully submitted,
Abby McQuade