

Document Type:	MINUTES		
Date of Meeting:	April 10, 2015	Time:	10:00 AM
Meeting Facilitator:	Dr. Roger Dougal	Location:	Swearingen Center room 3A75

IAB member Attendees			
Name	Company	E-mail	Phone
Tom Abrams	Santee Cooper	Tom.abrams@santeecooper.com	(843) 761-8000 ext 5200 (W)
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Marty Wilson	Flextronics	marty.wilson@flextronics.com	803-413-2517 (M)
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Lee Xanthakos	South Carolina Electric and Gas	pxanthakos@scana.com	803-217-1821 (M)

IAB members Absent			
Name	Company	E-mail	Phone
Tracey Blackmon	Duke Energy	tracy.blackmon@duke-energy.com	704-607-1079 (M)
Jeff Cain		Jeffcain727@gmail.com	
Harry Weatherford ,Jr.	Nucor	Harry.WeatherfordJr@Nucor.com	843-3442497 (M)

Faculty and Staff Attendees		
Name	Title	E-mail
Dr. Roger Dougal	Professor and Chair	dougal@cec.sc.edu
Dr. Mohammad Ali	Professor	alimo@cec.sc.edu
Dr. Andrea Benigni	Assistant Professor	benignia@cec.sc.edu
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Approval of Fall 2014 Meeting Minutes

The minutes were approved.

Announcements

- **The search for a new Dean of College of Engineering and Computing** – Underway
- **EE new faculty for Fall 2015**– Dr. Seongtae Bae from College of Medicine at Seoul National University
- **The 2015 Governor’s Award for Excellence in Scientific Research** – Dr. Asif Khan for his research in the area of Gallium Nitride (GaN) Light-Emitting Diodes (LEDs) and Power Electronics Devices.

Follow up on Recommendations from Last Meeting

- **Action items completed**
 - **Capstone Project Evaluation** – rubric was developed and ready for the members to use during the presentations to assess students’ performance.
 - **Advisement** –
 - **A group advising session** -- held on March 16, 2015 by the Undergraduate Director, Dr. Grigory Simin to provide more information regarding the curriculum and the program to students prior to their one-on-one advisement with the academic advisors.
- **Action items pending**
 - **Vice Chair Recommendation** –
 - Dr. Dougal recommended Mr. Marty Wilson from Flextronics as a new Vice Chair for the board.
 - Mr. Wilson accepted the nomination
 - The voted was conducted and all in favor of Mr. Wilson as a Vice Chair. He will take on the responsibility in August 2015. In Fall 2017 he will proceed to take on the role of IAB chair.

Undergraduate Program Review --

I. Situational Overview

- **Student body** – the number of enrollment has exceeded national trend up to 60% in the past 5 years
- **Quality of Incoming Students** –
 - Freshmen admits include many below desired quality (low AT score)
 - Scholarship funding is necessary in attracting higher quality freshmen to actually attend.
 - Increase our exposure to high school students starting from 8th graders to increase their interest in Electrical Engineering.
- **Faculty Trend** –
 - Number of faculty insufficient with respect to critical mass in some specializations.
 - Historic and anticipated loss of one-per-year is not being met with authorizations for new hires.
 - The target of 20 faculty has been mentioned in the EE strategic plan since XXXX.

- **Financial Outlook** –
 - Budget is very tight, but currently adequate to sustain operations.
- **Accreditation review** –
 - The next ABET visit is in 2 years.
 - Revising assessment and evaluation processes to be more comprehensive and more frequent.

II. Proposed Change to Program Educational Objectives (PEOs)

The department proposed one small change in the fourth PEO.

Change from: use their technical competence to creatively solve **electrical engineering** problems for the betterment of society.

Change to: use their technical competence in **electrical engineering** to creatively solve problems for the betterment of society.

Rationale –our graduates might apply their EE competence while working in another field

Discussions/Concerns –

- What is the definition of “the betterment of society”? It might be too narrow and might not cover industry interests. Should the wording be broadened to “..of society and industry”? Or should “betterment of society” be moved elsewhere in the PEOs? There was some sentiment that “betterment of society” is attractive to those prospective students who want to improve the world.

Recommendations – IAB voted to accept the proposed change and recommended to study whether an additional change is needed in the last five words.

III. Revision of Assessment Process –

- Dept is driving towards a more holistic assessment process that assesses performance in every semester instead of on a two-year cycle.
- record keeping is moving from the individual instructor to Blackboard, as a centralized and secure system for protecting student information and to provide an audit trail to confirm that program and course outcomes are being achieved.
- Use system engineering approach that uses trusted processes and traceable audit trails so that high-level reviews do not require deep dives into the minutia (but deep dives can be done.)

IV. Capstone Design Project Presentations (8 teams) - Each team gave a brief (5 min) presentation of their project to the IAB members who then used the Project Evaluation Rubric to assess each project (see the rubric in Appendix A). The IAB’s rating is a part of the program assessment process.

V. Discussion with Student Advisory Board –The IAB met with the SAB in 3A75 and compiled the following list of discussion topics:

Discussion with Student Advisory Board

Topics	Positive Experience	Negative Experience
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Discussion with Student Advisory Board		
Registration		<ul style="list-style-type: none"> No waiting list system in place for course registrations. Students do not know if they will be able to get into required classes. This adds unnecessary stress.
Courses	<ul style="list-style-type: none"> Online courses shared with other universities (as a part of FEEDER) are very useful for career plan. Students appreciate being able to take courses outside ELCT for their career plan electives. The Virtual Simin class is working well. Some students preferred an earlier version of the 101 course where students got to interact with ELCT 302 students. 	<ul style="list-style-type: none"> Need more programming courses like C++, Python, and HTML Need a 300-level course in embedded systems. The process to get a major restriction override to be able to add non-ELCT course(s) is very difficult. Students have to deal directly with the department which the course(s) belong to. The department has no control over the decision. Loss of mentoring relationship between ELCT 101 students and upper division students. Lack of outside speakers in classes to talk about research and career opportunities.
Advisement	<ul style="list-style-type: none"> Not many of the SAB students attended the 1st group advising session. For many, it seemed not necessary because they had a good faculty advisor. However the SAB received second hand feedback from others that it was well received by those who did attend. 	
Internship	<ul style="list-style-type: none"> Satisfied with the assistance from the career center on internship opportunities. 	
Tutoring	<ul style="list-style-type: none"> Tutoring was beneficial for both tutors and those who are tutored. 	
Instructors	<ul style="list-style-type: none"> Mr. Metts is very dedicated and much appreciated by the students. He always helps everyone understand the materials. 	
Program	<ul style="list-style-type: none"> Faculty seem to be expecting high standards of performance. 	<ul style="list-style-type: none"> Students changing major simply because this program is very tough.

Recommendations by IAB from the discussion points:

- Develop an automatic system to put students on registration waiting list and informed of status (this may be difficult since the registration process is owned by the administration, not by the department).
- ELCT 101 – This course is very important and should always be taught by an outstanding professor
 - Should Mr. Metts to be assigned to teach ELCT 101?
 - Bring back a mentoring element (e.g. 302 students) to ELCT 101.
- Develop a process to help students get any necessary approval to enroll in non ELCT courses with less complication. For example, a management course has a restriction only to allow

students from management major to enroll. Our students have to request a waiver to be able to add that course to their schedule. Often the management department staff doesn't know if they should give the waiver to non-major students, so there is a delay in getting the waiver.

- IAB members are open for an invitation or would recommendation someone to speak in classes (from 100 to 500 level) or at IEEE meetings.

IAB Internal Discussion – Recommendations to the Department

- **Increased Enrollment vs. Space** – IAB has concern whether or not we can accommodate the upward trend in enrollment. How are we going to accommodate all the students?
 - Additional space will be gained when the department of Computer Science and Engineering moves to the new Horizon 2 building.
- **Faculty search** – IAB concurred that preemptive hiring is not a common practice even in the corporate environment. However the IAB would like to review the strategic plan to make it more plausible that the university will commit to a long-term hiring plan to reach a faculty size of 20.
- **Assessment Process** – Agreed with the process revision that is now under way. It provides more evidence that the program outcomes are being achieved. Some features such as student-by-student progress tracking could be value added element to the industry when they look to hire our graduates, if the plan delivers certificates or other indicators of student achievement.

Action Items		
Action	Assignee	Due Date
Send meeting requests to put the next two meetings on calendars	Dr. Dougal	4/20/2015
Send the copy of the approved October 2014 meeting minutes along with the draft April 2015 meeting minutes for approval	Dr. Dougal	4/20/2015
Consider additional suggested changes to the PEOs	Dr. Dougal	4/21/2015
Submit the vote on the proposed change of PEOs electronically	IAB	5/1/2015
Send a copy of the EE Strategic Plan, as it is developed, for IAB review	Dr. Dougal	10/30/2015
Send one page summary of the Capstone Design Projects one week prior to the Spring meeting	Dr. Dougal	4/15/2016

Next Meetings		
Term	Date	Confirmation status
Fall 2015	November 13, 2015	Confirmed
Spring 2016	April 22, 2016	Confirmed

Meeting adjourned at 3:40 PM.

APPENDIX A

Grading Rubric for Industry Advisory Board review of Capstone Design Projects
 Last update: 2015-03-31

	Unacceptable	Poor	Acceptable Meets Min Expectations	Excellent Exceeds Min Expectations	Outstanding Substantially exceeds Min expectations
The Need	Substantially fails to meet Min Expectations. The problem appears to have a trivial solution that could be developed by sophomores or juniors in an EE program.	Fails to meet Min Expectations in minor ways, for example because the problem can be readily decomposed into non-interacting subsystems of low complexity.	"The Need" represents an engineering challenge that I expect the vast majority of graduates of an EE program would be able to solve.	"The Need" contains several more-challenging aspects that go beyond what I expect most engineering graduates to know and requires some additional self-learning.	The Need defines a problem that substantially exceeds min expectations because of aspects such as complexity, depth of knowledge needed in specific disciplines, or hidden pitfalls not obvious to young engineers.
Accomplishment	Substantially fails to meet Min Expectations. After two semesters, there is little to show. Understanding conveyed in the presentation appears to lack sufficient depth to solve the problem. Little attention was paid to execution details.	Fails to meet Min Expectations in minor ways, for example because some part of the problem that seems do-able was not done.	The actual accomplishment (as opposed to the need), meets my expectations for what the majority of EE program graduates would be expected to accomplish in a two-semester senior design project.	Exceeds minimum expectations, for example because it tackled one or more particularly challenging problems or addressed a challenge in a novel way, or showed great attention to engineering details.	Substantially exceeds min expectations, for example by several of these: overcoming difficult challenges, creating especially original solutions, displaying great depth of understanding in the discipline, high-level of polish or attention to detail in the executed project.
Skills Demonstrated	Substantially fails to meet Min Expectations. This team did not exhibit skills that I think are essential to any engineering career. Hire them? No way.	Fails to meet Min Expectations in minor ways. For example, by lack of depth of skills even if a reasonable range of skills, or narrow range of skills. I would have to think twice before recommending these team members for a job at my company.	The team demonstrated a reasonable range of skills considering the number of team members, the range of skills required by the project, and the skills that I would expect a recent EE graduate to have. Most of these team members, based on quality (not necessarily specific skill set) would be hireable by my company.	Exceeds minimum expectations, for example because team members learned new skills in addition to those learned in formal classes or by demonstration of a wide range of skills even if not at great depth. I would especially like to hire some of these team members for my company.	Substantially exceeds min expectations, in terms of breadth and depth of engineering skills. I'd give my right arm to hire one or more of these team members.