

# **B.S. in Electrical Engineering**

## **Annual Assessment Report 2014-15**

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# 1. Introduction

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The School of Electrical Engineering and Computer Science (EECS) at Washington State University offers the Bachelor of Science (B.S.) in Electrical Engineering degree program, accredited by ABET. The most recent accreditation visit took place in the fall of 2013, and resulted in the program being accredited through 2019.

In order to lay a foundation for the successful accreditation of these degree programs, and in order to continuously improve these degree programs, the School of EECS engages in a continuous assessment process. This process, which is thoroughly documented in the “School of EECS B.S. in Electrical Engineering Program Assessment Manual,” systematically collects seven different forms of assessment data:

- Student coursework
- Professional skills discussions
- Senior exit surveys
- Junior writing portfolio
- Teaching excellence reports
- Executive Council discussions
- Faculty Retreat discussions

Using systematic and principled processes documented in the Assessment Manual, we assess these data according to a regular schedule, and document the results in this annual report. The results reported here are for the 2014-15 academic year, and are organized around the seven data sources listed above. Note that all of the assessment data upon which this report is based are archived on the Assessment Committee’s Google Drive, which is associated with the account [wsu.eecs.assessment@gmail.com](mailto:wsu.eecs.assessment@gmail.com). Direct links to specific supporting materials referenced in this report are provided. To gain access to the entire archive, please contact Chris Hundhausen or any member of the CS, EE, or CE Assessment Committees.

## 2. Assessment of Student coursework

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Per the schedule set forth in our Assessment Manual (Table 3), each academic year we select a subset of student work in targeted courses for assessment relative to a set of targeted student outcomes. Table 1 presents the courses and student outcomes targeted in the 2014-15 academic year.

Course	Instructor	Enrollment	Targeted Outcomes
EE 234 “Microprocessor systems” (Spring 15)	Andy O’Fallon Jacob Murray	66 7	G
EE 415 “Senior Design I” (Fall 14)	Pat Pedrow	40	D, F, G, I, J
EE 416 “Senior Design II” (Spring 15)	Pat Pedrow	40	D, F, G, I, J

Table 1. Courses and outcomes targeted for assessment during 2014-15 academic year

## 2.1. Methodology

Figure 5 (p. 7) in the Assessment Manual presents the general process by which we assess student work samples.

The School of EECS started offering the BSEE program at Everett. The offering at Everett follows the same program requirements and course syllabi as that in Pullman. The programs in Everett and Pullman are accredited together. Since this is the first academic year of our Everett program, we assessed the performance of students at Everett separately from those in Pullman. This was primarily to determine whether there was any specific difference regarding achievement of student learning outcomes between the two campuses.

In addition, we performed course assessment for EE 214 (Design of Logic Circuits) for students in Everett. We compared this with our EE 214 assessment for Pullman students (performed in 2013-14 academic year).

We provide further details in our Course Assessment Report.

<insert link to Course assessment report>

## 2.2. Results

Detailed results are included in our Course Assessment Report.

<insert link to Course assessment report>

Average course assessment scores for Pullman were:

	Outcome				
	D	F	G	I	J
Average	<b>3.15</b>	<b>2.99</b>	<b>3.0</b>	<b>2.95</b>	<b>3.01</b>

If one assigns equal weight to each outcomes and averages over these scores, the overall result is 3.02, i.e., slightly above “capable.” Indeed, all the outcomes assessed, except for outcome I, are achieved at or above the “capable” level. Compared to the course assessment in the last two academic years, the scores are comparable and there is no major concern about any particular outcome.

Average course assessment scores for Everett were:

	Outcome					
	A	B	C	E	G	K
Average	<b>3.24</b>	<b>3.15</b>	<b>3.42</b>	<b>3.26</b>	<b>3.5</b>	<b>3.4</b>

If one assigns equal weight to each outcomes and averages over these scores, the overall result is 3.29, i.e., above “capable.” Indeed, all the outcomes assessed, are achieved at or above the “capable” level. For comparison, the latest assessment scores for Pullman for the corresponding outcomes (based on the 2013-2014 report) are:

	Outcome					
	A	B	C	E	G	K
Average	3.28	3.45	3.04	3.35	3.0	3.34

We do not observe any significant difference between the Pullman and Everett students in terms of achievement of student outcomes.

### 2.3. Discussion and Recommendations

Section 2A of our Assessment Manual (p. 6) specifies that the average ratings of student work with respect to each targeted outcome should be at our above 3.0. Based on the data from the student coursework, we can draw the following conclusions:

1. All the assessed outcomes were achieved at (or marginally below) our target level of 3.0 or “capable”.
2. There is no significant difference between the Pullman and Everett students in terms of achievement of student outcomes.
3. For EE 214 projects, it is recommended that the assessment committee assess achievement of student outcomes in “real-time.” This activity must be coordinated with the course instructor/TA.

## 3. Assessment of Professional Skills Discussion

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### 3.1. Methodology

In order to assess student achievement of these outcomes, we employ a “direct” method in which we have student teams work together to address a real-world problem specifically designed to prompt for discussion related to various aspects of professional practice. In order to foster collaboration and discussion, we deliberately construct the problem to be open-ended, with no clear solution.

The Professional Skills Discussion prompt given to the students as an assignment in the spring, 2015 offering of EE 416 (“Senior Design II”), a required senior-level course. Prof. Chris Hundhausen's Online Studio-Based Learning Environment (OSBLE) was used for this activity. The following instructions were posted in OSBLE for the students.

“The following online discussion activity is designed to prompt for expression of your knowledge of and ability to apply engineering professional skills. Its purpose is to determine how well your engineering program has taught you these skills. In this activity, you will be

working on a team of 3-6 students. As part of this team, you will engage in an online discussion to capture your thoughts, perspectives, ideas, and revisions as you consider an engineering scenario. Through this online discussion, you will engage in a collaborative exchange and critique of each other’s ideas and work. The goal is to challenge and support one another as a team, so that, as a team, you can (a) tap your collective resources and experiences, and (b) dig more deeply into the issue(s) raised by the engineering scenario.”

The OSBLE site then presented six specific prompts to the students followed by a one page scenario consisting of a short IEEE Spectrum online article entitled “FCC Votes 'Yes' on Net Neutrality.” As an aside this committee would like to point out that the OSBLE is extremely valuable to EECS for evaluating the professional skills of our graduating seniors and we thank Chris Hundhausen for hosting these scenario-based student discussions.

The EE 416 course instructor provided the EE Assessment Committee with online transcripts of the discussions of all teams that participated in the assignment. The assessment committee randomly selected the discussions of four teams for assessment. These transcripts were made available to three members of the Assessment Committee (Jose Delgado, Krishnamoorthy Sivakumar, and Pat Pedrow) through an OSBLE course set up for ABET assessment activities.

Each committee member was tasked with independently assessing each of the transcripts with respect to the four “professional skills” outcomes (D, F, I, and J) and discussion their ratings and justifications by email. For each outcome, committee members scored each discussion on our standard four-point scale: 1) Unsatisfactory, 2) Needs Improvement, 3) Capable, and 4) Exemplary. For each outcome, the target score was an average of 3.0.

In mid-May of 2015, committee members were given one week to perform their initial assessments and send their initial ratings and justifications by email. Through further discussion of the rationale for discrepant ratings, committee members were given the opportunity to adjust discrepant ratings in order to bring them into better agreement.

### 3.2. Results

The following table presents assessment committee scores on the Professional Skills Discussion transcripts for each of the outcomes (performance indicators).

	Outcome (performance indicator)							
	D.3	D.5	F.1	F.4	I.1	I.2	J.1	J.2
Sivakumar	3.3	3.4	3.5	3.2	2.9	3.0	3.1	2.9
Delgado	3.4	3.3	3.13	3.13	3.06	3.2	3.25	3.25
Pedrow	2.75	2.75	2.5	2.5	2.75	2.75	2.5	2.5
Average	<b>3.15</b>	<b>3.15</b>	<b>3.04</b>	<b>2.94</b>	<b>2.9</b>	<b>2.98</b>	<b>2.95</b>	<b>2.88</b>

The average scores for performance indicators D.3, D.5, and F.1 are above the “capable” level of 3.0. The average scores for performance indicators F.4, I.1, I.2, J.1, and J.2 are very close to 3.0 (from 2.88 to 2.98); the committee considers this level as “capable” as well. Some general comments on the part of the committee regarding the Professional Skills Discussion are noted here.

Teams were able to identify the major issues in the scenario presented (issues such as big government, too much regulation, ...). A couple of teams provided a good summary of the team’s discussion towards the end of the transcript. It was noticed that team skills have been developed, students acknowledge and respect the opinion of others and they added to the conversation. For the most part, students were aware of contemporary issues. They also draw some analogies with electricity and past controversial regulations such AT&T breakout and clean water act. Student in general were aware that they need to know much more to provide a meaningful solution; learning on topics such the FCC, how commissions are appointed, ...

A couple of teams had a well formatted discussion that was broken into small paragraphs with targeted issues. It seems that students did not look for other references; they went to the discussion with what was provided; a student mentioned that what was provided was biased to one side of the issue; however, he/she did not provide another reference. There were some grammar, spelling, and sentence errors; these might be due to: i) this was a discussion and ii) the majority of students in a team had English as their second language. A student posted (only once) text from what appears to be a play; none of the other members of the team paid any attention to that. This in turn shows that the large majority of the students have matured to take the assignment as a professional responsibility.

### **3.3. Discussion and Recommendations**

The EE Assessment Committee has established 3.0 as the target rating for each outcome. As observed earlier, the committee’s mean ratings of the professional skills discussions was 2.9 or above for all outcomes--- the committee considers this as “capable”.

## **4. Assessment of Senior Exit Surveys**

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Each year, the Electrical Engineering (EE) program administers a mandatory online survey to all graduating seniors. The online survey serves not only to furnish data on the demographics of our graduating seniors, but also to provide indirect assessment data relevant to the EE program’s progress toward meeting all ABET outcomes (A through K).

### **4.1. Methodology**

Given WSU’s recent purchase of a Qualtrics license, the online survey was moved from surveymonkey.com to WSU’s Qualtrics server (surveys.wsu.edu) for the Spring, 2015 administration of the survey. However, the Summer, 2014 and Fall, 2014 surveys were administered via surveymonkey.com. The raw survey data for 2014-15 assessment cycle can be accessed through this link:

<insert link>

Approximately two weeks prior to the end of the summer, fall, and spring semesters, we opened up the survey, and notified graduating seniors that they were required to take the survey as a requirement for their graduation. The survey, which required approximately 30 to 45 minutes to complete, remained open until approximately two weeks after the conclusion of each semester.

After the Spring, 2015 survey closed, the Assessment Committee Chair compiled summary results and recommendations, and shared them with the Assessment Committee in a draft report. The Assessment Committee had two weeks to provide input, which was then incorporated into the final version.

The survey included questions designed specifically to provide the Assessment Committee with indirect measures of ABET Outcomes A through K. However, data in four other general areas were also of interest to the Assessment Committee:

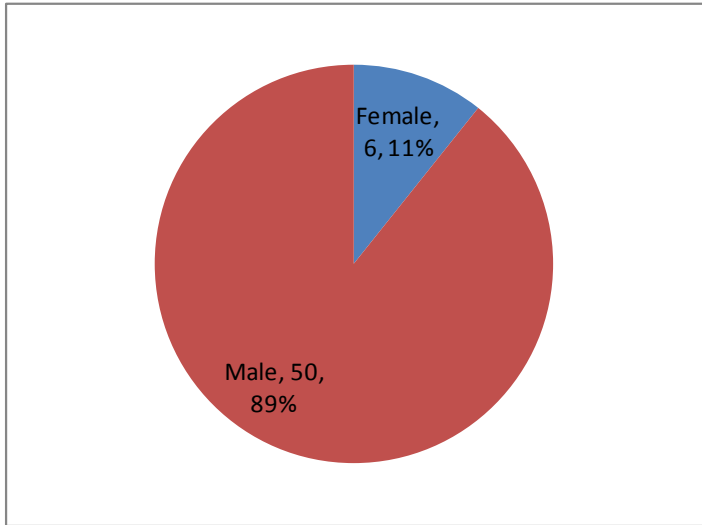
1. *Basic demographics*: How many students are graduating? What is the gender and ethnic composition of the graduating class? How did graduates come into the program (straight from high school, or as transfer students), and how long did it take them to graduate?
2. *Interdisciplinary, international, research, and internship experiences*: To what degree did graduates participate in interdisciplinary activities, international exchange programs, research activities, and internships?
3. *Job and graduate school success*: How many graduates sought employment, or applied to graduate school? How successful were they? What are their starting salaries, and who is hiring them?
4. *Level of preparedness/training*: How prepared do graduates perceive themselves to be for careers in the profession, and to what extent do students perceive themselves to have achieved the ABET outcomes?

## **4.2. Results**

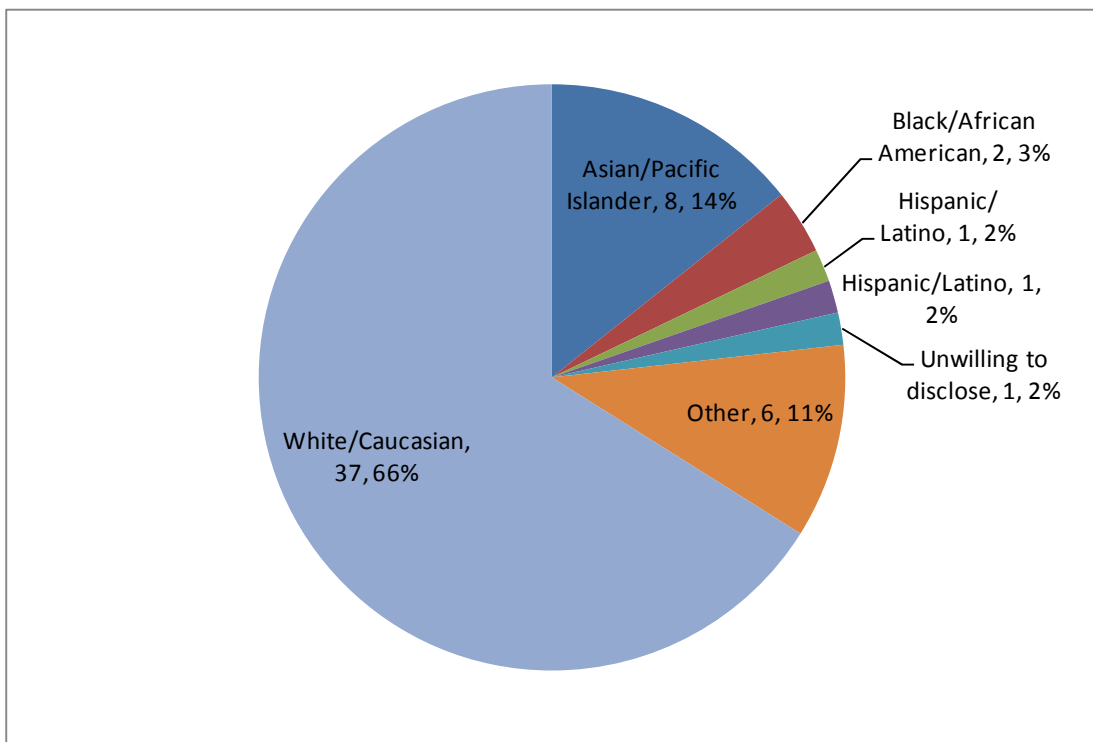
In this assessment cycle, a total of 56 students completed the survey. Of these, we received 21 responses from the Fall, 2014 graduating class and 35 responses from Spring, 2015 graduating class. No responses were recorded for the Summer, 2014 graduating class. Below, we present survey results relevant to the four areas described above.

### **4.2.1. Basic Demographics**

Figures 1 and 2 present breakdowns of graduating seniors with respect to gender and ethnicity.



**Figure 1. Breakdown of survey respondents by gender**



**Figure 2. Breakdown of survey respondents by ethnicity**

On average, it took students 8.5 semesters (SD = 2.4 semesters) to obtain their EE degrees. To provide further perspective, Figure 3 depicts the ways in which graduates entered the EE program. Slightly more than a third (36%) came right from high school; more than one half (55%) transferred in from a community college or university.

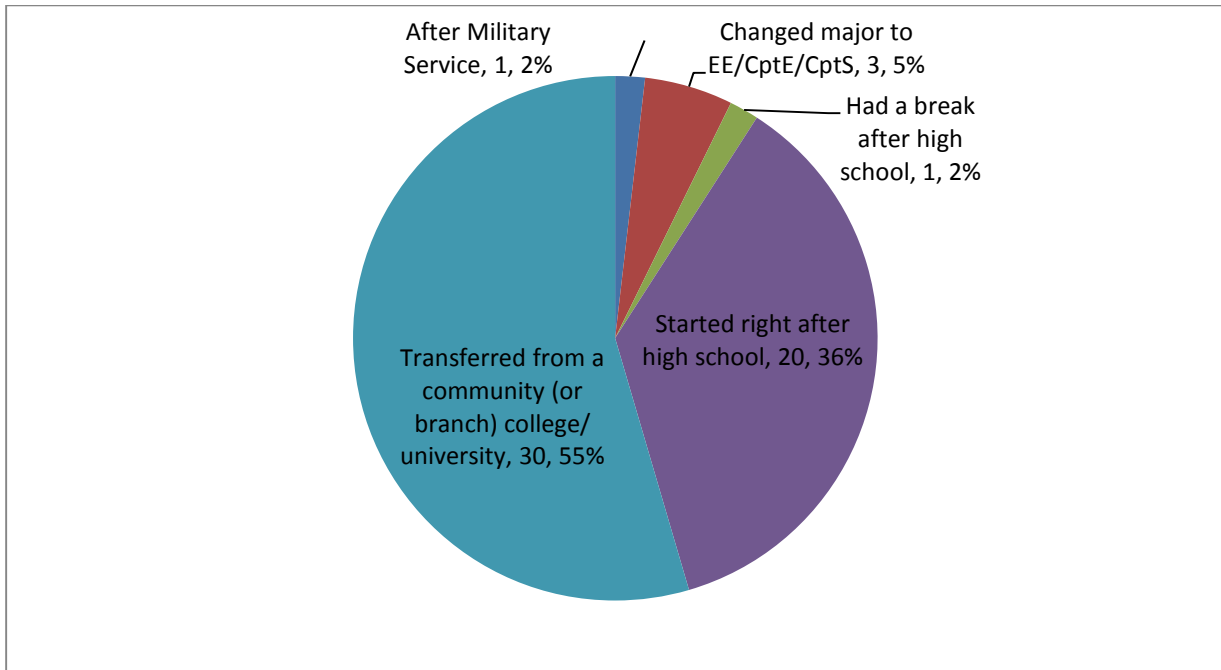


Figure 3. How students entered the EE program

#### 4.2.2. Interdisciplinary, International, Research, and Internship Experience

We define interdisciplinary activities as those that require students to perform work outside of the major discipline or require students to work with others from another discipline. Figure 4 plots the percentage of students who participated in various activities with interdisciplinary components. As can be seen, 82% of graduating seniors participated in some type of interdisciplinary activity.

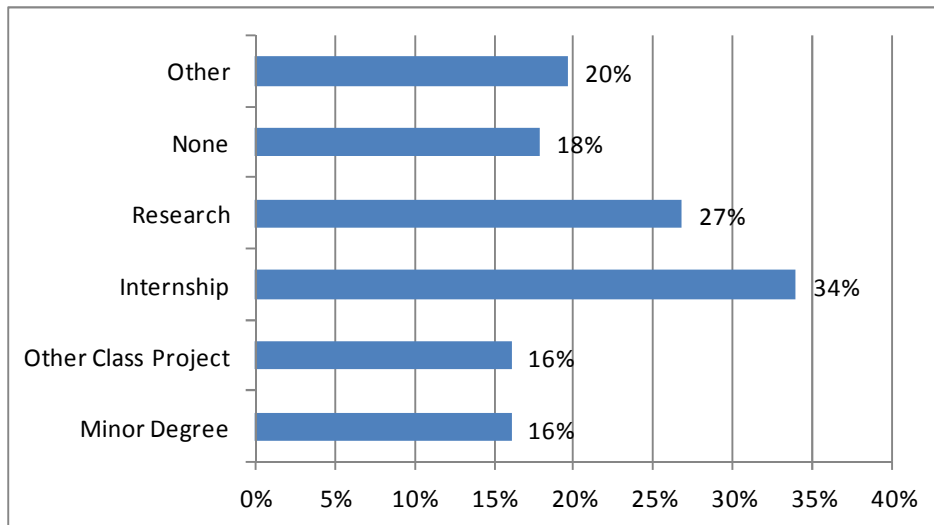


Figure 4. Percentage of graduating seniors who participated in various activities with interdisciplinary component

With respect to student international experiences, which include study abroad, exchange, and international internship programs, 6 out of 56 respondents (11%) reported having such experiences during their undergraduate years. More than a quarter (27%) of the graduating students participated in undergraduate research. A third (34%) of the graduating students participated in internships.

### 4.2.3. Success at Job-Seeking and Graduate School

91% of graduating seniors had sought employment at the time they completed the exit survey. Of those, 78% had participated in at least one interview, 49% had received at least one job offer, and 41% had actually accepted an offer.

A total of 16 graduating seniors (out of 56) had a self-reported GPA in the range 3.5-4.0. All 16 of had sought employment at the time they completed the exit survey. Of those, 94% had participated in at least one interview, 81% had received at least one job offer, and 81% had actually accepted an offer. Figure 6 breaks down by reported GPA range, the starting salaries of the 25 graduates who had received job offers at the time of the survey.

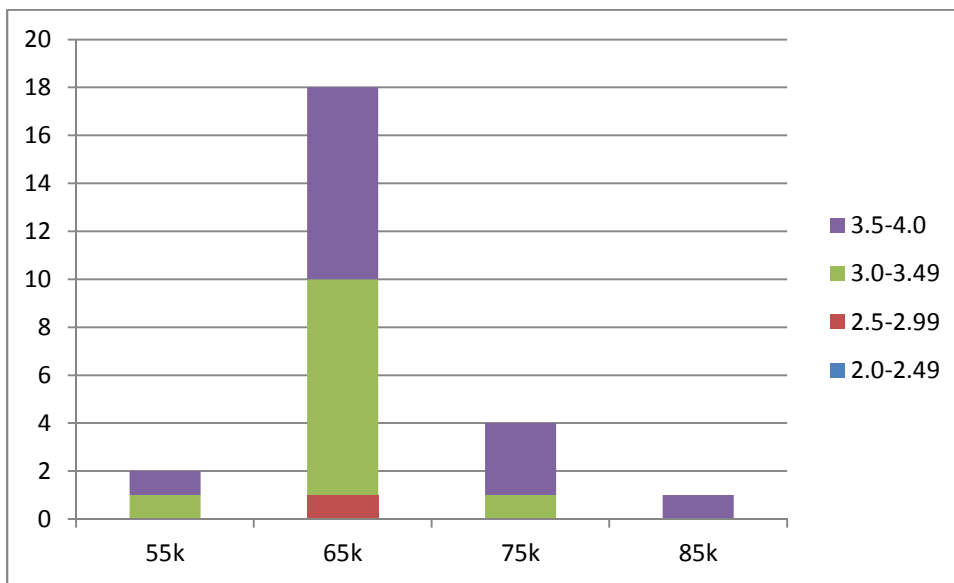
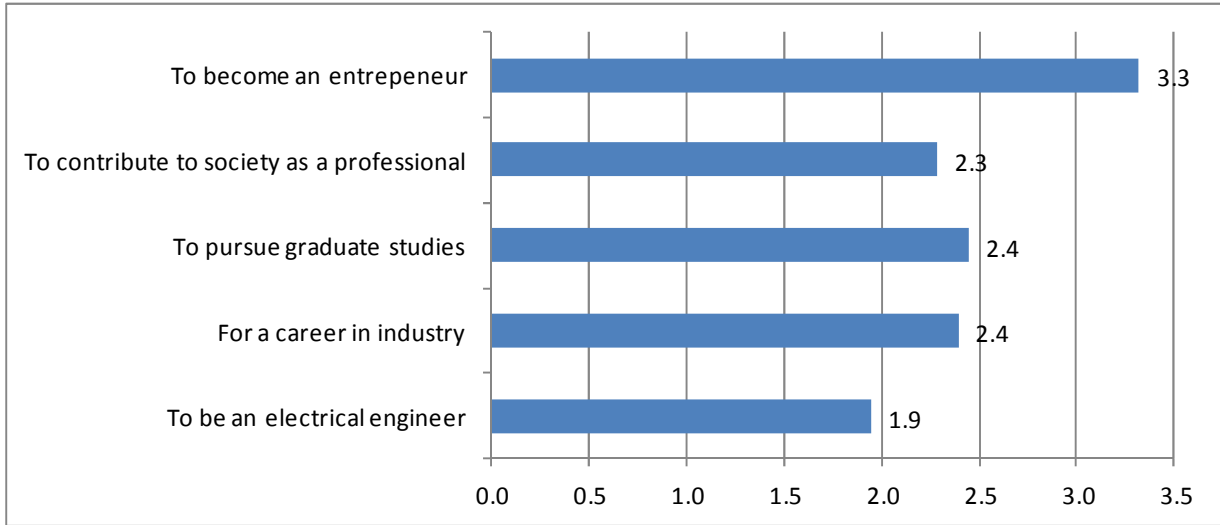


Figure 5. Percentage of students who received offers in each of six different salary ranges (25 of the 54 survey respondents)

Just five respondents out of 56 (9%) applied to graduate school. All of them were accepted.

### 4.2.4. Perceptions of Preparedness for EE Profession

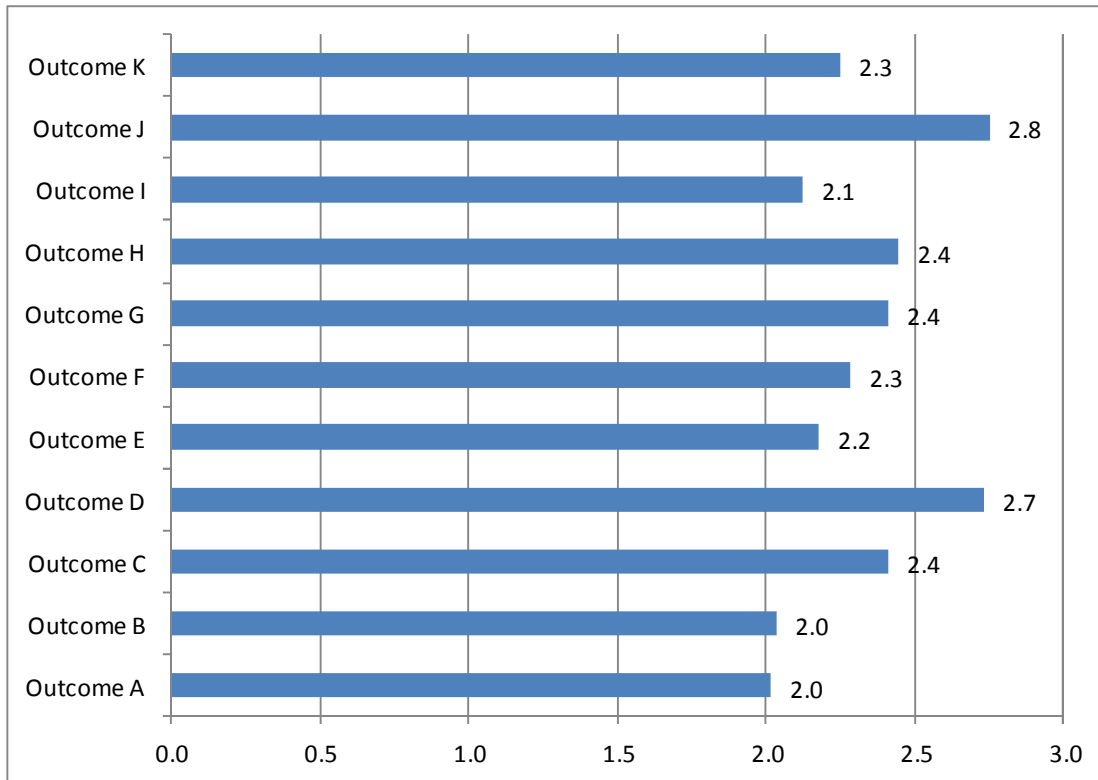
Survey respondents were asked to rate the extent to which our degree program prepared them for careers in the electrical engineering profession on a 5-point scale, with 1 being “Excellent,” 2 being “Very Good,” 3 being “Good,” 4 being “Fair,” and 5 being “Poor.” Figure 6 charts the average responses of respondents to each of the five questions related to career preparedness.



**Figure 6. Respondents' ratings of their preparedness for various aspects of a career in the computing profession. Responses were on a 5-point scale, with 1 being "Excellent" and 5 being "Poor"**

#### **4.2.5. Perceptions of Achievement of ABET Outcomes**

Finally, the survey asked respondents to rate the extent to which they had attained the eleven ABET student outcomes (A through K) established by the BSEE program for the purposes of assessment. Once again, respondents were asked to make their ratings on a 5-point scale, with 1 being "Excellent," 2 being "Very Good," 3 being "Good," 4 being "Fair," and 5 being "Poor." Figure 7 presents the average ratings by outcome.



**Figure 7. Respondents’ average ratings of the extent to which they attained each program outcome. Responses were on a 5-point scale, with 1 being “Excellent” and 5 being “Poor”**

### **4.3. Discussion and Recommendations**

Our Assessment Manual specifies the following performance targets for the senior exit survey:

1. An average response of 2 (“very good”) or lower on all 5-point Likert-style questions.
2. 80% of graduating seniors either obtain a job in the field, or are accepted into graduate school.

With respect to (1), inspection of Figure 6 and Figure 7 reveals that the average ratings provided by students were higher than 2—and in several cases, well above 2—on many questions. In other words, we failed to meet our target across all questions. With respect to (2), results reported in the section entitled “Success at Job-Seeking and Graduate School” show that just 30 of 56 graduates who sought jobs (54%) either obtained a job offer or were accepted into graduate school. This falls well below our 80% target.

Given that these survey results fall below our targets, the Assessment Committee proposes the following recommendations:

1. Re-examine whether an 80% success rate in job-seeking and graduate school is a realistic goal in the current job market. Consider reformulating the goal to consider only those students who actually sought a job at the time they took the survey.

2. Consider setting new targets based on graduates' GPAs or other performance indicators of their academic success. Perhaps it is reasonable to expect 80% of our top graduates (A-level students) to have been offered a job at the time of graduation, but unreasonable to expect this of all graduates.
3. At the faculty retreat, discuss what can be done to help us move closer to our goal on the ABET questions. This could happen in a few ways: We could adjust the wording of the questions, we could lower our goal, or we could implement some combination of both. Analysis of data on our direct measures of these outcomes (student work samples and professional skills discussions) suggests that students are or nearly are attaining all outcomes. Given this discrepancy, it could be the case that the wording of each level on our five-point scale does not align closely with our expectations. To address this misalignment, we might consider adjusting the wording of scale items to align more closely with our expectations: 1 could be "exemplary," 2 could be "capable," 3 could be "needs improvement," and 4 could be "unsatisfactory." We could then set a target of 2.5 out of 4 for the survey responses—the same target we have for our direct assessments of these outcomes.

## **5. Assessment of Junior Writing Portfolio**

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At the time this report was written, the latest report on the WSU Writing Program (see <http://universitycollege.wsu.edu/units/writingprogram/units/writingassessment/reports/index.html>) was for the 2011-2013 biennium. These data, which clearly indicated that students in the B.S. in EE program were exceeding our goal, were reported in the 2013-14 assessment report.

## **6. Assessment of Teaching Excellence Report**

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Students in our courses are encouraged to complete end-of-semester course evaluation surveys that ask them to evaluate and reflect on their experiences in the courses they take. The Teaching Excellence Committee is charged with the task of writing an annual report that analyzes these course evaluation data for each course offering and instructor. The EE Assessment Committee uses that report as input to our continuous assessment process.

### **6.1. Methodology**

The EE Assessment Chair receives the Teaching Excellence Committee's report each May. The 2014-15 report is available through the following link:

<https://drive.google.com/folderview?id=0B57WpSeXoRLkaUNtVjBCOUc2Y3c&usp=sharing>

The EE Assessment Committee Chair analyzed the report, synopsis the results, and developed a set of recommendations, all of which were compiled into a preliminary report. The Assessment Committee was given approximately two weeks to review the preliminary report and provide input, which was then incorporated into the final report.

## **6.2. Results**

The 2014-15 Teaching Excellence Report was rather uneventful with respect to course content. Some of the concerns were about specific instructor performance. Some of the comments were about course logistics (e.g., TA support).

The Teaching Excellence Committee made recommendations to address these concerns. We note these in the following section.

## **6.3. Discussion and Recommendations**

Based on the Teaching Excellence Report, we propose the following recommendations regarding how to improve courses with demonstrated problems. Note that these recommendations are taken directly from those made by the Teaching Excellence Committee:

- EE416/CptS 423: Consider having EE and CS project judging done separately. Some CS students don't think the current system is fair.
- TAs for CptS 121 and 122 need to be chosen with care. TA selection has a huge impact on the students as implied by the comments.

For new instructors, we recommend that the School implement a policy in which a senior member of the department, or an instructional adviser from the WSU Office of Assessment of Teaching and Learning (OATL), sits in one of the classes of first-time instructors, in order to provide feedback to the instructor on how to improve.

## **7. Assessment of Executive Council Discussion**

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The EECS Executive Council (EC) consists of the EECS Director and 10-25 representatives from industry. The EC is intended to give voice to the employers of graduates of the School of EECS. As such, council members are selected so as to be representative of the leadership of the largest employers of EECS graduates. One of the primary responsibilities of the EC is to provide industry perspective and feedback on the continuous evaluation of objectives and assessment of outcomes for the undergraduate curricula, and to suggest changes for implementation as needed.

### **7.1. Methodology**

The EC met with the School of EECS on April 22, 2015 in conjunction with the Senior Design Poster Session at the WSU Pullman Campus. During the meeting, the chair of the Assessment Committee presented the previous year's key assessment results to the EC. The Associate Director (Sakire Arslan- Ay) took detailed notes on the EC's feedback in response to this presentation. The presentation, with Dr. Arslan Ay's notes embedded within the slides, is accessible through this link:

<https://drive.google.com/folderview?id=0B57WpSeXoRLkZllsM3ZuSG1FdFU&usp=sharing>

Based on these notes, the assessment chair compiled the set of recommendations included in this report. The Assessment Committee was given approximately two weeks to provide input on these recommendations. The committee's input was incorporated into the final version of the report.

## **7.2. Results**

The following is a synopsis of the notes most relevant to the Assessment Committee's mission of fostering continuous improvement. Note that EE 302 was recently included as a requirement in the BSEE program. Not many BSEE students are currently enrolled in this course (it is optional for students enrolled prior to the change). However, it will be a required for students BSEE students going forward.

- Align CptS/EE 302 course topics with the “Fundamentals of Engineering” exam—the first step in the process leading to the Professional Engineer license. Note that this exam exists for electrical and computer engineering, but not for computer science.
- In CptS/EE 302, discuss recent cases relevant to security and privacy issues. Members of the EC can provide additional input on how to improve CptS/EE 302.
- Define criteria that faculty mentors can use to evaluate junior instructors.

## **7.3. Discussion and Recommendations**

We propose the following recommendations in light of the EC's input:

- The CptS/EE 302 instructor should be aware of, and include, relevant content in the “Ethics and Professional Practice” component of the FE exam, which includes codes of ethics, the NCEES Model Law and Model Rules, and intellectual property.
- The CptS/EE 302 instructor should follow up with members of the EC (Jon Campbell, Phill Spiess, and Mike Gutman) to obtain suggestions on how to improve the CptS/EE 302 course.
- The Assessment Committee should set up a mentoring and evaluation system for junior instructors. In this system, senior faculty should be assigned to mentor, and assess, junior instructors relative to teaching. This recommendation echoes one that came out of our assessment of the Teaching Excellence Report.

## **8. Assessment of Faculty Retreat Discussion**

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Each August, the EECS faculty convene for a one-day retreat. A key part of that retreat is a presentation and discussion of the previous year's assessment results. This allows the entire faculty to obtain a debriefing on the School's assessment activities, and gives them an opportunity to provide input, especially with regard to future action steps.

## **8.1. Methodology**

As part of the EECS faculty retreat held on August 22, 2014, the electrical engineering faculty convened in a breakout session to discuss the results of the previous assessment cycle. The Assessment Committee Chair presented the key results, and solicited input from the faculty. A scribe (Ben Belzer) took notes on the faculty's input, and embedded those notes directly into the slides. The presentation slides and notes can be accessed via this link:

<https://drive.google.com/folderview?id=0B57WpSeXoRLkUFZCMUZ5QnlVMUk&usp=sharing>

## **8.2. Results**

In August of 2015, the Assessment Committee Chair reviewed the scribe's notes, synopsisized the key results, and compiled a report that included the synopsis and a list of recommendations based on the results. The Assessment Committee was given two weeks to review the Chair's report and provide input, which were incorporated into the final report.

The following is a synopsis of the notes from the EE breakout session at the faculty retreat. Only the notes that lend themselves to translation into action items are included in this synopsis.

- Towards an effort to engage our (undergraduate) students in the ABET assessment process, include assessment information (ABET outcomes covered in course along with relevant performance indicators) in the course handout to students.
- Integrate explicit training on soft skills in CptS/EE 302. Currently this is taught in EE 415/416.

## **8.3. Discussion and Recommendations**

The items in the Results section above are all readily translatable into action items. The Assessment Committee should develop more detailed plans for each of these items, and present the plans at the 2015 faculty retreat, so that they can be implemented. It is notable that the item on developing a mentoring program for student and adjunct faculty echoes a recommendation made by the EECS Executive Council. This should be a priority action item for implementation in the 2014-15 assessment cycle.

## **9. Summary Table of Assessment Results for 2015 Faculty Discussion**

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The following table presents the results and action items to be gleaned from the assessments just presented. It will serve as a catalyst for the EE/CptE breakout discussion at the 2015 annual faculty retreat.

## Summary of Assessment Process for 2014–2015 Academic Year<sup>1</sup>

Data Source	Question/Concern	Recommendation	Action Taken	Outcome Achieved
<b>SC</b>	Difficult to assess student outcomes for EE 214 projects. This was observed during the assessment of Everett students as well.	Coordinate with EE 214 instructor/TA to do this in real-time (during project presentation).	Plan to implement this in the 2015-16 assessment cycle when EE 214 will be a targeted course for assessment.	Data not yet available
<b>TPR</b>	Some instructors have very low ratings.	Have a senior member of the department, or an instructional advisor from OATL, sit in on one of the classes of first-time instructors, in order to provide feedback on how to improve.	At the 2015 faculty retreat, we will develop a formal plan for implementing the recommendations.	Data not yet available.
<b>EC</b>	CptS/EE 302 students need knowledge and training relevant to contemporary codes of ethics and case studies.  Note: This was mainly regarding BSCptS students. However, BSEE students will be required to take EE 302 shortly.	<ul style="list-style-type: none"> <li>• Align CptS/EE 302 curriculum with relevant content in the “Ethics and Professional Practice” component of the FE exam.</li> <li>• CptS/EE 302 instructor should consult with Jon Campbell, Phill Speiss, and Mike Butman in order to obtain suggestions on how to improve CptS/EE 302 course.</li> </ul>	None yet	Data not yet available

<sup>1</sup>The following abbreviations are used for data sources: AS = Alumni Survey, CC = Curriculum Committee Observation, EC = Executive Council, JWP = Junior Writing Portfolio, PSD = Professional Skills Discussions, SC = Student Coursework, SDP = Senior Design Team Posters, SES = Senior Exit Interviews/Surveys, TPR = Teaching Performance Reviews

## Summary of Assessment Process for 2013–2014 Academic Year<sup>2</sup> (2014-15 updates in red)

Data Source	Question/Concern	Recommendation	Action Taken	Outcome Achieved
SC	Difficult to assess student outcomes for EE 214 projects.	Coordinate with EE 214 instructor/TA to do this in real-time (during project presentation).	EE 214 instructor is aware of this and will coordinate assessment activity.	Plan to implement this in the 2015-16 assessment cycle when EE 214 will be a targeted course for assessment.
SC	Students are not sufficiently engaged in the ABET assessment process.	Have the ABET criteria and the respective performance indicators, given to each student at the beginning of each semester. Each student must then verify their individual successful accomplishment of each listed indicator, with the date of accomplishment submitted as part of the course record.	Discuss this at the next Faculty Retreat.	Faculty have included explicit ABET information in course handouts.
TPR	A few students mentioned EE 416 has soured their experiences/image with/of the EECS program.	An assessment of the EE 416 projects did not indicate any cause concern in terms of the technical abilities of the students. Monitor this in future teaching performance reviews.	Monitor this in future teaching performance reviews.	No significant concern was noticed. Will continue to monitor this. No other action needed right now.

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