

Outcome CS-g. Have knowledge of and a commitment to the social and ethical responsibilities of computing professionals.

The assessment is performed with respect to the key abilities that the students are expected to acquire in specific courses that have been identified with respect to this outcome.

| Course | Performance indicators |
|--------|---|
| CS 230 | Understand the ethical standards of software engineering |
| CS 481 | Demonstration of understanding of the principles of ethics. |
| CS 481 | Application of the Ethics Principles to your own project |

Tools used: Embedded Course assessments, NPSE Ethics Quiz, and Graduating Senior Survey

Data Collection: Embedded Course Assessments, Student Grades, and Senior Exit Survey responses.

Frequency of data collection: The data are collected every time courses are taught.

Data Analysis: Every course evaluated by embedded assessments every 4th offering if offered twice an academic year, 3rd offering if offered once an academic year and every other offering if offered less than every academic year.

Closing the loop: This outcome is subject to review every year based on performance criteria and metrics and specific action items are developed, if necessary, to revise the content of the courses.

Performance criteria and metrics:

- a) Embedded Course Assessments at the end of CS 230 and CS 480 with average grades \geq C on assignments and test which cover the performance indicators.
- b) Student responses to relevant question on graduating senior exit surveys must be \geq 3.5/5.

c) NPSE ethics quiz results must be $\geq 70\%$

Assessment Tool:

**Undergraduate In-Course
Program Outcomes Assessment Form**

**Lane Department of Computer Science and Electrical Engineering
Undergraduate In-Course Program Outcomes Assessment Form**

Course: _____ Semester: _____ Instructor: _____

Assessment of student preparedness for this course at the start of this term:

| At the beginning of this term: | Nearly 100% | About 75% | About 50% | About 25% | N/A |
|---|----------------|--------------|--------------|--------------|-----|
| 1. Students had the prerequisite math skills. | | | | | |
| 2. Students had the prerequisite laboratory skills. | | | | | |
| 3. Students had the prerequisite problem solving skills. | | | | | |
| 4. Students had the prerequisite design skills | | | | | |
| 5. Students were capable of using the necessary tools (e.g. hardware/software, etc.) | | | | | |
| 6. Students had the necessary programming skills. | | | | | |
| 7. Students had the necessary communication skills. | | | | | |

| Course Learning Outcomes * (assessed within course) | How/Where Assessed** | Student Scores | | | |
|---|----------------------|------------------|--------------------|-------------------|--------------|
| | | Min Pass % | High Score % | Class Avg % | Grade *** |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |

* Indicate which program outcome each course outcome maps into.

** For example “exam 1, problem 1”

*** For **Grade** give the class average on an “A=4.0, B=3.0” basis.

Recommendations: Include which outcomes require more attention within the course to improve student performance, and how the course should be altered in the future to improve results.

Assessment Tool:

Ethics Quiz

Ethics quiz

An ethics quiz consisting of 5 questions is administered in the capstone design class. These questions are:

1. Engineers may perform services outside their areas of competence as long as they inform their employers or clients
2. If engineers' judgement is overruled under circumstances that endanger life or property, they shall notify their employers or clients and such other authority as may be appropriate.
3. Engineers having knowledge of any alleged violation of this Code, following a period of 30 days during which the violation is not corrected, shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required
4. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
5. Engineers shall acknowledge their errors after consulting with their employers or clients.

Assessment Tool:

Graduating Senior Survey

WVU Benjamin M. Statler College of Engineering and Mineral Resources Graduating Senior Survey 2014/15

This portion of the survey asks for contact information regarding alumni events and news.
Information from this part will be kept separate from the rest of the survey.

Personal Information:

Name _____

New Mailing Address _____

Permanent Address (if different) _____

Email address (permanent) _____

Phone number _____

Degree Earned _____

Department _____

Employer Information:

Name of Employer _____

Job Title _____

Address _____

Country _____

Phone Number _____

Additional Information _____

To help the assessment activities of the college and your major we ask that you take a few minutes to provide us feedback on your perception of how your undergraduate program prepared you in a number of important educational outcome areas. **All entries will be treated as confidential.**

Please give your assessment for items “a” through “q” and “r”, if it applies, using the following rating scale.

5 -strongly agree; 4 -agree; 3 -neutral; 2 -disagree; 1 -strongly disagree; N/A –not applicable (for r. i. & ii.)

10. Through the education and training I attained with my baccalaureate degree I have acquired the knowledge, skill or ability to:

- a. ___ Use the basic principles and practices of my engineering discipline
- b. ___ Recognize available opportunities and need to pursue continuing education and lifelong learning
- c. ___ Apply knowledge of mathematics to solve equations or systems of equations necessary for the solution of engineering problems
- d. ___ Apply knowledge of chemistry and physics effectively in solution of engineering problems
- e. ___ Design and conduct experiments relevant to the needs of my engineering discipline
- f. ___ Acquire, analyze and interpret data and information relevant to the needs of my engineering discipline
- g. ___ Design a component, system, or process to meet desired engineering outcomes and needs
- h. ___ Function on multidisciplinary teams to manage engineering projects
- i. ___ Translate a general problem description into a specific engineering approach
- j. ___ Understand professional and ethical responsibilities of a professional engineer
- k. ___ Effectively communicate my ideas, recommendations, etc. to others verbally
- l. ___ Effectively communicate my ideas, recommendations, etc. in memos, reports, etc.
- m. ___ Appreciate the impact of engineering from multi-cultural and global perspectives
- n. ___ Appreciate my engineering discipline’s impact on contemporary environmental and societal issues
- o. ___ Conduct economic evaluation of importance cost factors in engineering designs
- p. ___ Recognize the impact of engineering design on worker or public safety
- q. ___ Utilize software to solve problems relevant to the needs of engineers practicing my discipline in industry
- r. ___ If you transferred to WVU from another institution or department how would you agree with the following statements:
 - i. ___ The procedure for accepting my transfer was relatively seamless and straight forward
 - ii. ___ The procedure for validating credit for courses taken elsewhere was efficient

COMMENTS: _____

Note: If you’ve indicated that you are still searching for a job or graduate school, would you be willing to participate in a follow up survey? If so, could you please provide an email address we may use to contact you with the survey? Thanks!

e-mail: _____