

The master syllabi for all courses were reviewed during Spring 2002.

- * Note: Every department is required to review Master Syllabi and Program Learning Outcomes a minimum of every two years.

II. Program Learning Outcomes: A description of what you intend for students to know (cognitive), think/feel (affective), or do (psychomotor), when they have completed your degree program. A suggested manageable number of outcomes should be in the range of five to ten. Describe Program Learning Outcomes review activities*.

Program learning outcomes were reviewed in 2002 as a part of the DACUM process. There were some minor wording changes in the program learning outcomes and some related courses were changed.

An entry-level graduate with an Associate of Applied Science Degree in Civil Engineering Technology from Sinclair Community College will be able to:

Learning Outcomes	Related Courses
1. Communicate effectively and professionally in the civil engineering environment through proper usage of verbal, written and graphic techniques.	COM 206; ENG 121, 122; ARC 138; CCT 102, 103, 105, 203, 246, 247, 248, 216, 256, 258, 270, 278; DRT 198; MET 198
2. Develop mathematical skills in algebra, trigonometry and calculus, using analytical problem solving methods.	MAT 131, 132, 133; PHY 131, 132; MET 203, 207; CCT 102, 103, 105, 203, 206, 216, 245, 247, 248, 256, 258, 278
3. Employ logical and concise problem solving techniques to technical problems.	ARC 138; CCT 102, 103, 105, 206, 216, 245, 247, 248, 256, 258, 270, 278
4. Demonstrate the capability to develop engineering drawings for civil/construction projects.	ARC 138; CCT 103, 203, 246, 247, 248, 278; CRT 198; MET 198
5. Be proficient in the use of computer software associated with civil engineering projects.	MET 198, DRT 198; CCT 203, 216, 245, 246, 247, 248, 256, 258, 278
6. Demonstrate a thorough knowledge of common construction materials-- both their proper usage and proper testing procedures.	ARC 138; CCT 105, 216, 245, 278
7. Understand the mechanics of structural design.	MAT 131, 132; PHY 131; MET 203, 207; CCT 105, 206, 245, 278

Learning Outcomes	Related Courses
8. Be proficient in the use of surveying equipment to collect data and to lay out projects to solve engineering problems.	MAT 131, 132; CCT 102, 103, 203, 246, 247, 248, 278

III. Assessment Method(s): A measurable indicator of success in attaining the stated learning outcome(s). The methodology should be both reliable and valid. Please describe in detail.

- a. **Formative Assessment Method(s) and Description:** a measurable indicator of student in-progress success in attaining the stated learning outcome(s).

Formative assessment is accomplished via course-by-course evaluations made by individual instructors. Most courses require students to complete projects that draw upon learning outcomes in previous coursework. There are sequenced courses: the structural series culminates in CCT 206, the surveying sequence culminates in CCT 248, and the construction management sequence culminates in CCT 258. At the beginning of the term, faculty typically solicit feedback from students on what they know and remember from earlier classes in the sequence. There are not large numbers of students in the program; informal data gathering is sufficient, and grades earned in earlier courses are one indicator of student achievement.

- b. **Summative Assessment Method(s) and Description:** a measurable indicator of end-of-program success in attaining the stated end-of-program learning outcome(s).

Summative assessment is achieved via the capstone course, CCT 278. CCT 278 is a project-oriented course which mixes one hour of lecture with six hours of lab time. Students complete a major project which is specific to their degree option. A written and oral report accompanies each project, and faculty evaluate the projects. The program receives feedback from advisory committee members who review the projects and give suggestions for faculty and program improvement.

Additional data is required for TAC-ABET accreditation. Institutional Planning and Research assists with the data gathering needs of accreditation.

IV. Results: A description of the actual results of overall student performance gathered from the summative assessment(s). (see II.b.)

There have been approximately six students in the capstone class each year. Student are given a letter grade and most of the students do well. High standards are required in the course.

Generally very positive feedback is received from the advisory committee on the projects from this class. Student success is based in large part on student effort, particularly since this is a project-oriented assessment.

V. Analysis/Actions: From analysis of your summative assessment results, do you plan to or have you made any adjustments to your program learning outcomes, methodologies, curriculum, etc.? If yes, describe. If no, explain.

No changes have been made to the assessment process because the feedback received from the advisory committee is so glowing.

TAC-ABET has adopted new assessment criteria. The department faculty are exploring other formative and summative assessment methodologies as a part of the 2005 TAC-ABET reaccreditation process.

VI. General Education: A description of where and how within the major the three primary general education outcomes* (communication, thinking, values/citizenship) are assessed.

- a. Where within the major do you assess written communication? Describe the assessment method(s) used. Describe assessment results if available.

A written report accompanies many CCT courses including the capstone project. The department does not use the written communication checklist for assessing writing.

- b. Where within the major do you assess oral communication? Describe the assessment method(s) used. Describe assessment results if available.

An oral report accompanies many CCT courses including capstone project. The department does not use the oral communication checklist for assessing oral work.

- c. Where within the major do you assess thinking? Thinking might include inventing new problems, seeing relationships and/or implications, respecting other approaches, demonstrating clarity and/or integrity, or recognizing assumptions. Describe the assessment method(s) used. Describe assessment results if available.

Creative and analytical thinking is embedded in all courses. It is assessed formatively in all courses and summatively in the capstone course.

- d. Where within the major do you assess values/citizenship/community? These activities might include behaviors, perspective, awareness, responsibility, teamwork, ethical/professional standards, service learning or community participation. Describe the assessment method(s) used. Describe assessment results if available.

Faculty within the department practice role modeling in order to convey professional behaviors to students. Faculty members continue to integrate the Core Competencies of the Engineering & Industrial Technology Division, including citizenship and professionalism, into the curriculum.