



Annual Assessment Report for Academic Programs

The University Assessment Team advocates for the enhancement of student learning through purposeful, meaningful, and feasible student-outcomes assessment practices. The Assessment Team seeks to collaborate with programs, departments, and units to ensure that effective assessment of student learning occurs across the University. To assist in meeting this goal, the Team requests that you complete this Annual Assessment Report form to document student learning in your program. A PDF version of this completed form will be posted to the Academic Affairs Assessment website. Please note that this Annual Assessment Report form should only be completed after you have an Assessment Plan for Academic Programs forms on file with the University Assessment Team. The plan is completed once and only updated when revisions have been made to components of the plan.

1. **Degree Level and Program Name:** Bachelor of Civil Engineering
2. **College/School:** College of Engineering & Science
3. **Assessment Overview** - Briefly share how student learning outcomes assessment is conducted within your program/department (e.g. number of outcomes, examples of assignments used, and frequency of assessment).

The program has 11 student learning outcomes aligned with the current Accreditation Board for Engineering and Technology (ABET) and our professional organization, the American Society of Civil Engineers (ASCE) standards. Assessments are done yearly for every course offering and are based on homework, essays, projects, lab reports, exams, and class presentations.

The assessment is two-fold: course offerings and program-level. Course assessments are summarized in worksheets that include the course outcomes, degree to which those outcomes are met, adjustments for next offerings if needed.

After the end of each academic year, the department members develop a program-level assessment document that incorporates the results of the individual course assessment worksheets.

4. **Student Learning Outcomes & Benchmarks** -Which student learning outcome(s) from the assessment plan filed with the University Assessment Team is/are being reported on in this report? Include the corresponding benchmark(s) for each outcome.

We have 11 Student Learning Outcomes, defined by ABET and ASCE are:

SLO 1. An ability to identify, formulate and solve complex engineering problems by applying principles of Engineering, science and mathematics.

SLO 2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors.

SLO 3. An ability to communicate effectively with a range of audiences.

SLO 4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solution in global, economic, environmental and societal context.

SLO 5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goal, plan tasks and meet objectives.



SLO 6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.

SLO 7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

SLO 8. Define key aspects of advanced technical specialization appropriate to civil engineering.

SLO 9. Explain key aspects and concepts and problem-solving processes used in management.

SLO 10. Explain key concepts and problem-solving processes used in business, public policy, and public administration.

SLO 11. Explain the role of the leader, leadership principles, and attitudes conducive to effective professional practice of civil engineering.

To have a successful program, the minimum percentage distribution of students achieving each level is:

-- Very High Level of Achievement (5) = 1% of the students.

-- High Level of Achievement (4) = 49% of the students.

-- Acceptable High Level of Achievement (3) = 40% of the students.

-- Low Level of Achievement (2) = 10% of the students.

-- Not Achieved (1) = 0% of the students.

If the class average falls in the Very High Level of Achievement range = (5), the outcome rating is "Satisfied"

If the class average falls in the High Level of Achievement range = (4), the outcome rating is "Mostly Satisfied"

If the class average falls in the Acceptable High Level of Achievement range = (3), the outcome rating is "Partly/Somewhat Satisfied"

If the class average falls in the Low Level of Achievement range = (2), the outcome rating is "Needs Improvement"

If the class average falls in the Not Achieved range = (1), the outcome rating is "NOT Satisfied"

The benchmark is that 90% (=1%+39%+40%) of the students achieve "Partly/Somewhat Satisfied" or higher. This corresponds to 3 out of 5 on a numerical scale or higher.

For more information:

https://www.abet.org/wp-content/uploads/2023/05/2024-2025_EAC_Criteria.pdf

5. Institutional Outcomes - For which institutional outcome(s) do the reported student learning outcome(s) align?

SLO Outcome Alignment	Institutional Outcome
Yes	I. Jesuit & Mercy Values
Yes	II. Diversity & Cultural Awareness
Yes	III. Critical Thinking & Problem Solving
Yes	IV. Communication
Yes	V. Professionalism
Yes	VI. Lifelong Learning

6. Assessment Period: Select the academic year for which you are reporting results (i.e. when data were collected):

2024-2025



7. **Program Assessment Results** -Briefly summarize the assessment results and how they relate to benchmark(s).

The Bachelor of Civil Engineering program is fully accredited and has received the maximum accreditation term of six years, with the highest evaluation ratings.

The assessment is based on a set of upper-level course and laboratory offering that together satisfy all the student learning outcomes. This set consists of CIVE 4820: Civil Engineering Senior Design Project, and CIVE 3490: Geotechnical Engineering Laboratory (CIVE 3480: Geotechnical Engineering is the corresponding lecture course). Both are core courses for the department and taken by all students.

Outcomes 1, 2, 3, 4, 5, 7, and 8 are assessed in CIVE 4820 (Senior Design).

Outcomes 6, 9, 10, and 11 are assessed in CIVE 3490 (Geotechnical Eng Lab).

SLO 1. An ability to identify, formulate and solve complex engineering problems by applying principles of Engineering, science and mathematics. Degree of Satisfaction (5).

SLO 2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors. Degree of Satisfaction (5).

SLO 3. An ability to communicate effectively with a range of audiences. Degree of Satisfaction (4).

SLO 4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solution in global, economic, environmental and societal context. Degree of Satisfaction (3).

SLO 5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goal, plan tasks and meet objectives. Degree of Satisfaction (4).

SLO 6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions. Degree of Satisfaction (3).

SLO 7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. Degree of Satisfaction (4).

SLO 8. Define key aspects of advanced technical specialization appropriate to civil engineering. Degree of Satisfaction (4).

SLO 9. Explain key aspects and concepts and problem-solving processes used in management. Degree of Satisfaction (5).

SLO 10. Explain key concepts and problem-solving processes used in business, public policy, and public administration. Degree of Satisfaction (3).

SLO 11. Explain the role of the leader, leadership principles, and attitudes conducive to effective professional practice of civil engineering. Degree of Satisfaction (5).



CIVE 4820 is a team-based course in which students complete an open-ended engineering design project. The course requires students to research relevant background information, including the design process, applicable codes and standards, public policy considerations, and sustainability principles. Students develop and revise preliminary design alternatives supported by engineering calculations and hand drawings. The final deliverables include completed calculations, computer-generated drawings, a comprehensive design report, and a formal presentation. Students conclude the course by presenting their projects to department faculty, alums, and the department's Board of Advisors, providing an overview of the project, a summary of preliminary alternatives, and a detailed explanation of the final design. All the outcomes assessed in the course received a 5 or 4 except SLO 4 that got a 3.

CIVE 3490 is a laboratory course in which students work collaboratively to perform soil testing, calculate engineering properties, and document experimental results. Course deliverables include individual memo reports, group formal reports, and an independently written project report. The instructor evaluates student performance through assessment of submitted work. Two SLOs received a 5 and two SLOs got a 3.

8. **Planned Actions and/or Actions Taken in Response to Assessment Results** - Briefly summarize how you are using the assessment results to enhance student learning and improve program quality.

Students in the laboratory courses experienced challenges in designing appropriate experiments, analyzing and interpreting data, and clearly documenting and explaining their results. Students also had difficulty articulating key concepts and problem-solving processes relevant to business, public policy, and public administration, as well as considering the broader global, economic, environmental, and societal impacts of engineering solutions in their senior-level project. These outcomes received the lowest ratings among the eleven assessed outcomes. Their ratings were "Partly" or "Somewhat Satisfied" (3 out of 5).

These areas will be addressed and strengthened in future course offerings through targeted instructional support and enhanced instructional strategies.