

Lamar University

B.S. Civil Engineering SACS Assessment 2022- 2023

May 31, 2023

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B.S. Civil Engineering SACS Assessment 2022-2023

BS Civil Engineering 2022-2023

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Institutional Mission

Lamar University is dedicated to student success by engaging and empowering students with the skills and knowledge to thrive in their personal lives and chosen fields of endeavor. As a doctoral granting institution, Lamar University is internationally recognized for its high quality academics, innovative curriculum, diverse student population, accessibility, student success, and leading-edge scholarly activities contributing to transforming the communities of Southeast Texas and beyond.

Program Mission

The mission of the Department of Civil and Environmental Engineering is to provide students with high quality, accessible undergraduate and graduate civil engineering education; to engage and empower students with skills and knowledge to thrive in professional careers; and to serve society through economic and technological development of Southeast Texas and beyond.

- 1 **Program Goals**
The following statements describe what the Department's undergraduate engineers are expected to attain a few years after graduation: 1. Increasing leadership and responsibility beyond entry level that meet the emerging and evolving demands of civil engineering. 2. Communication and project management skills for effective problem solving. 3. Engagement in life-long learning through professional activities, training, pursuing licensure, and understanding of professional ethics, public safety, cost constraints, environmental impacts, and policy implications.

- 1.1 **Student Learning Outcomes**
an ability to communicate orally with a wide range of audiences
ABET Outcome # 3

Supported Initiatives (3)

GENERAL EDUCATION

- Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication

INSTITUTIONAL PRIORITIES

- Oral Communication

STRATEGIC INITIATIVES

- SP - 3 - Provide leading-edge environments for our students, faculty, and staff.

1.1.1

Measures**Direct Evidence**

Students must possess an ability to communicate to wide range of audiences that include supervisors, subordinates, clients, technical, and non-technical audiences to succeed as a professional engineer in the field. If this level of performance is met, we will ensure the BS civil engineering program and graduating students will continuously meet the rigorous professional demands and meet the academic specifications defined by the engineering education accreditation agency, ABET.

METHODOLOGY*

Assessment of Outcome:: A senior level design capstone course, CVEN 4313, was selected for the evaluation of Outcome (2). The students' final written reports will be assessed using an assignment grading rubric containing a Likert Scale 1-4 that was calibrated using pre-existing student data meeting the attainment thresholds set forth by the AC. Student oral communication will be assessed using quantitative surveys collected from the wide range of audience members that attend and assess the student presentations. The surveys also use a Likert Scale (1-5).

SOURCE OF EVIDENCE

Rubric Scored Assignments - Academic Direct

1.1.1.1

Achievement Target

2022-2023

Met

ACHIEVEMENT TARGET	The desired level of performance for Outcome 2 in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.
FINDINGS	Student learning outcome is achieved. Student performance indicators exceeded minimum threshold of 70% attainment.
ANALYSIS OF FINDINGS	Student Performance Indicator
	SLO 1.1
	1 4.00
	2 3.96
	3 3.84
	4 3.84
	5 3.84
	6 3.84

7 3.84
 8 3.20
 9 3.20
 10 3.20
 11 3.20
 12 2.33
 13 2.33
 14 3.72
 15 3.43
 16 3.54
 17 3.65
 18 3.65
 19 3.65
 20 3.65
 Above Threshold 90%

IMPROVEMENT TYPE Academic

IMPROVEMENT DESCRIPTION No Improvements Deemed Necessary

IMPROVEMENT

1.1.2 Measures

Indirect Evidence

Graduating students will be given an exit survey to gauge their self efficacy related to the student learning outcome.

METHODOLOGY*

An exit questionnaire will be provided to graduating students. Quantitative data will be collected using a questionnaire and will be scored using likert scale (1-4). The specific question on the questionnaire pertaining to this SLO will be used in the assessment.

SOURCE OF EVIDENCE

Senior Exit Survey - Academic Indirect

1.1.2.1 Achievement Target

2022-2023 Met

ACHIEVEMENT TARGET	The desired level of performance for SLO in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.
FINDINGS	Student learning outcome is achieved. Student response exceeded minimum threshold of 70% attainment.
ANALYSIS OF FINDINGS	<p>Student Response</p> <p>SLO 1.1</p> <p>4</p> <p>3.2</p> <p>3.2</p> <p>4</p> <p>4</p> <p>3.2</p> <p>3.2</p> <p>4</p> <p>4</p> <p>4</p> <p>3.2</p> <p>4</p> <p>3.2</p> <p>4</p> <p>Avg. 3.66</p> <p>St. Dev 0.41</p> <p>Above 3.0 100%</p>
IMPROVEMENT TYPE	Academic
IMPROVEMENT DESCRIPTION	No Improvements Deemed Necessary
IMPROVEMENT	

1.2

Student Learning Outcomes

an ability to apply engineering design to produce solutions that meets specified technical standard/code requirements

ABET Outcome # 2

Supported Initiatives (6)

GENERAL EDUCATION

- Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Social Responsibility - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

INSTITUTIONAL PRIORITIES

- Acquiring, constructing, integrating, and applying knowledge
- Problem Solving
- Analytical/Quantitative Literacy

STRATEGIC INITIATIVES

- SP - 3 - Provide leading-edge environments for our students, faculty, and staff.

1.2.1

Measures

Direct Evidence

Students' must have the ability to apply engineering design principles to produce solutions satisfying a specific set of needs. If this level of performance is met, we will ensure the BS civil engineering program and graduating students will continuously meet the rigorous professional demands and also meet the academic specifications defined by the engineering education accreditation agency (ABET).

METHODOLOGY*

Assessment of Outcome: Various assignments and examinations from three different courses will be used to assess outcome 1: CVEN 4313, CVEN 4380, CVEN 3370. The faculty assessment committee (AC) will review a representative sample of each of the selected assignments and examinations and score the work using a checklist rubric using a Likert scale from 1-4. The rubric has been calibrated using pre-existing student work meeting the attainment threshold specified by the AC.

SOURCE OF EVIDENCE

Rubric Scored Assignments - Academic Direct

1.2.1.1

Achievement Target

2022-2023

Met

ACHIEVEMENT TARGET	The desired level of performance for Outcome 1 in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.
FINDINGS	Student learning outcome is achieved when student performance indicator is aggregated across the three assessed courses. Student performance indicators exceeded minimum threshold of 70% attainment.
ANALYSIS OF FINDINGS	<p>Student Performance Indicator</p> <p>CVEN 4380</p> <p>Average Average</p> <p>SLO 1.2</p> <p>2.67</p> <p>1.67</p> <p>2.67</p> <p>3.00</p> <p>2.67</p> <p>3.00</p> <p>3.00</p> <p>3.00</p> <p>3.00</p> <p>4.00</p> <p>3.00</p> <p>4.00</p> <p>2.67</p> <p>3.33</p> <p>1.00</p> <p>Above 3.0 57%</p> <p>CVEN 3370</p> <p>Average Average</p>

SLO 1.2

3.20

3.20

3.44

3.52

3.20

3.29

3.52

3.08

3.80

3.20

3.08

3.08

3.44

3.20

2.87

3.80

3.52

3.44

3.10

3.80

3.80

3.20

2.93

3.52

3.20

3.10

Above 3.0 92%

CVEN 4313

SLO 1.2

4.00

3.96

3.84

3.84

3.84

3.84

3.84

3.63

3.63

3.63

3.63

2.64

2.64

3.79

3.50

3.61

3.72

3.72

3.72

3.72

Above 3.0 90%

IMPROVEMENT
TYPE

Academic

IMPROVEMENT
DESCRIPTION

Student Learning

IMPROVEMENT

CVEN 3340 will incorporate mastery based learning to improve student performance in CVEN 4380. In addition, pre-lecture video content will be created to help supplement instruction in CVEN 4380.

1.2.2 Measures

Indirect Evidence

Graduating students will be given an exit survey to gauge their self efficacy related to the student learning outcome.

METHODOLOGY*

An exit questionnaire will be provided to graduating students. Quantitative data will be

collected using a questionnaire and will be scored using likert scale (1-4). The specific question on the questionnaire pertaining to this SLO will be used in the assessment.

SOURCE OF EVIDENCE

Senior Exit Survey - Academic Indirect

1.2.2.1 Achievement Target

2022-2023 Met

ACHIEVEMENT TARGET	The desired level of performance for SLO in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.
FINDINGS	Student learning outcome is achieved. Student response exceeded minimum threshold of 70% attainment.
ANALYSIS OF FINDINGS	<p>Student Response</p> <p>SLO 1.2</p> <p>3.2</p> <p>3.2</p> <p>3.2</p> <p>4</p> <p>3.2</p> <p>3.2</p> <p>3.2</p> <p>4</p> <p>3.2</p> <p>4</p> <p>4</p> <p>3.2</p> <p>3.2</p> <p>4</p> <p>Avg/ Std 3.49 0.40</p> <p>Above 3.0 100%</p>
IMPROVEMENT TYPE	Academic

1.3

Student Learning Outcomes

an ability to apply engineering design to produce solutions that considers and satisfies specified public health, safety, and welfare needs and constraints.

ABET Outcome # 2

Supported Initiatives (6)

GENERAL EDUCATION

- Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Social Responsibility - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

INSTITUTIONAL PRIORITIES

- Acquiring, constructing, integrating, and applying knowledge
- Problem Solving
- Analytical/Quantitative Literacy

STRATEGIC INITIATIVES

- SP - 3 - Provide leading-edge environments for our students, faculty, and staff.

1.3.1

Measures

Direct Evidence

Students' must have the ability to apply engineering design principles to produce solutions satisfying a specific set of needs. If this level of performance is met, we will ensure the BS civil engineering program and graduating students will continuously meet the rigorous professional demands and also meet the academic specifications defined by the engineering education accreditation agency (ABET).

METHODOLOGY*

Assessment of Outcome: Various assignments and examinations from three different courses will be used to assess outcome 1: CVEN 4313, CVEN 3370. The faculty assessment committee (AC) will review a representative sample of each of the selected assignments and examinations and score the work using a checklist rubric using a Likert scale from 1-4. The rubric has been calibrated using pre-existing student work meeting the attainment threshold specified by the AC.

SOURCE OF EVIDENCE

Rubric Scored Assignments - Academic Direct

1.3.1.1 Achievement Target

2022-2023

Met

ACHIEVEMENT TARGET	The desired level of performance for Outcome 1 in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.
FINDINGS	Student learning outcome is achieved. Student performance indicators exceeded minimum threshold of 70% attainment.
ANALYSIS OF FINDINGS	Student Performance Indicator CVEN 3370 SLO 1.3 3.31 3.40 3.49 3.58 3.31 3.38 3.58 3.18 3.90 3.31 3.18 3.18 3.49 3.31 3.01 3.90 3.58 3.49 3.21

3.90
3.90
3.40
3.05
3.58
3.31
3.21
Above 3.0 100%

CVEN 4313
SLO 1.3

3.58
3.55
3.45
3.45
3.45
3.45
3.45
3.01
3.01
3.01
3.01
2.19
2.19
3.54
3.27
3.37
3.47
3.47
3.47
3.47
Above 3.0 90%

IMPROVEMENT
TYPE

Academic

1.3.2 Measures

Indirect Evidence

Graduating students will be given an exit survey to gauge their self efficacy related to the student learning outcome.

METHODOLOGY*

An exit questionnaire will be provided to graduating students. Quantitative data will be collected using a questionnaire and will be scored using likert scale (1-4). The specific question on the questionnaire pertaining to this SLO will be used in the assessment.

SOURCE OF EVIDENCE

Senior Exit Survey - Academic Indirect

1.3.2.1

Achievement Target

2022-2023 Met

ACHIEVEMENT
TARGET

The desired level of performance for SLO in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.

FINDINGS

Student learning outcome is achieved. Student response exceeded minimum threshold of 70% attainment.

ANALYSIS OF
FINDINGS

Student Response

SLO 1.3

3.2

3.2

3.2

4

3.2

3.2

3.2

4

3.2

4
4
3.2
3.2
4

Avg/ Std 3.49 0.40
Above 3.0 100%

IMPROVEMENT
TYPE Academic

IMPROVEMENT
DESCRIPTION No Improvements Deemed Necessary

IMPROVEMENT

1.4

Student Learning Outcomes

an ability to communicate in written form with a wide range of audiences
ABET Outcome # 3

Supported Initiatives (3)

GENERAL EDUCATION

- Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication

INSTITUTIONAL PRIORITIES

- Written Communication

STRATEGIC INITIATIVES

- SP - 3 - Provide leading-edge environments for our students, faculty, and staff.

1.4.1

Measures

Direct Evidence

Students must possess an ability to communicate to wide range of audiences that include supervisors, subordinates, clients, technical, and non-technical audiences to succeed as a professional engineer in the field. If this level of performance is met, we will ensure the BS civil engineering program and graduating students will continuously meet the rigorous professional demands and meet the academic specifications defined by the engineering education accreditation agency, ABET.

METHODOLOGY*

Assessment of Outcome:: A senior level design capstone course, CVEN 4313, was selected for the evaluation of Outcome (2). The students' final written reports will be assessed using an assignment grading rubric containing a Likert Scale 1-4 that was calibrated using pre-existing student data meeting the attainment thresholds set forth by the AC. Student oral communication will be assessed using quantitative surveys collected from the wide range of audience members that attend and assess the student presentations. The surveys also use a Likert Scale (1-4).

SOURCE OF EVIDENCE

Rubric Scored Assignments - Academic Direct

1.4.1.1 Achievement Target

2022-2023 Met

ACHIEVEMENT TARGET	The desired level of performance for Outcome 2 in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.
FINDINGS	Student learning outcome is achieved. Student performance indicators exceeded minimum threshold of 70% attainment.
ANALYSIS OF FINDINGS	Student Performance Indicator SLO 1.4 1 3.98 2 3.94 3 3.82 4 3.82 5 3.82 6 3.82 7 3.82 8 3.36 9 3.36 10 3.36 11 3.36 12 2.44 13 2.44 14 3.73

15 3.44
 16 3.55
 17 3.66
 18 3.66
 19 3.66
 20 3.66
 Above Threshold 90%

IMPROVEMENT
TYPE

Academic

IMPROVEMENT
DESCRIPTION

No Improvements Deemed Necessary

IMPROVEMENT

1.4.2

Measures

Indirect Evidence

Graduating students will be given an exit survey to gauge their self efficacy related to the student learning outcome.

METHODOLOGY*

An exit questionnaire will be provided to graduating students. Quantitative data will be collected using a questionnaire and will be scored using likert scale (1-4). The specific question on the questionnaire pertaining to this SLO will be used in the assessment.

SOURCE OF EVIDENCE

Senior Exit Survey - Academic Indirect

1.4.2.1

Achievement Target

2022-2023 Met

ACHIEVEMENT
TARGET

The desired level of performance for SLO in a collective assessment is that 70% of students in the program will achieve 3.0/4.0 or higher.

FINDINGS

Student learning outcome is achieved. Student response exceeded minimum threshold of 70% attainment.

ANALYSIS OF
FINDINGS

Student Response

SLO 1.4

4
3.2
3.2
4
4
3.2
3.2
4
4
4
3.2
4
3.2
4

Avg. 3.66
St. Dev 0.41
Above 3 100%

IMPROVEMENT
TYPE

Academic

IMPROVEMENT
DESCRIPTION

No Improvements Deemed Necessary

IMPROVEMENT