Institutional Effectiveness
2024-2025

Program: Civil & Environmental Engineering BSCE
College and Department: College of Engineering, Civil Engineering
Contact: Dr. Ben Mohr
Mission:

The mission of the civil engineering program is to offer the strong academic content necessary to produce well-educated graduates who become innovative and productive members of society. Graduates will possess both the problem-solving skills and the fundamentals of critical thinking and analysis that are crucial for success within the framework of the civil and environmental engineering profession.

Attach Curriculum Map (Educational Programs Only):
Attached Files: See Appendix 1

SLO1: Identify, Formulate, and Solve Engineering Problems

Define Outcome:
Students should demonstrate an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

Assessment Methods:

1. Final Exam Component Grades - "Complex Engineering Problems"
    a. CEE 3320
    b. CEE 3413
    c. CEE 3500
    d. CEE 3610
    e. CEE 4800
2. Senior Exit Surveys
    a. Survey question - (1a) - "Identify"
    b. Survey question - (1b) - "Formulate"
    c. Survey question - (1c) - "Solve"

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. Final Exam Component Grades - "Complex Engineering Problems"
    a. Acceptable; Average ≥ 70
    b. Excellent; Average ≥ 80
2. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:
2.A Technology Infused Programs,2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

ABET 1. an ability to identify, formulate, and solve complex engineering problems	2019-20		2020-21		2021-22		2022-23		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
Final Exam Component Grades - "Complex Engineering Problems"												
CEE 3320			81.4	74.7	75.8	74.7	71.1	72.1	76.4	72.8	73.9	78.8
CEE 3413			80.9	73.3	80.8	*	77.0	94.4	77.0	66.9	78.4	85.7
CEE 3500 (added 2021-22)					91.1	78.0	87.0	84.0	85.9	81.8	86.4	85.0
CEE 3610			78.0	77.1	85.0	79.2	78.0	78.8	84.4	87.0	83.8	74.9
CEE 4800			88.8	87.3	83.6	88.0	83.0	69.5	81.3	72.9	71.0	76.7
Senior Exit Surveys												
Survey question - (1a) - "Identify"	3.83	3.68	3.64	3.45	3.83	3.72	3.73	3.72	3.58	3.89	3.52	3.65
Survey question - (1b) - "Formulate"	3.75	3.63	3.55	3.45	3.65	3.64	3.77	3.59	3.58	3.89	3.36	3.54
Survey question - (1c) - "Solve"	3.63	3.68	3.61	3.36	3.83	3.59	3.70	3.66	3.50	3.93	3.55	3.54
Co-op Employer Survey - Number of Co-op Reports Returned		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Identifies, formulates and solves complex engineering problems"		3.46	3.20	3.20	No response	3.20	3.20	---	*Discontinued - insufficient data points*			

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY 2024-25 in conjunction with previously defined thresholds, no official actions are required. Over the past several academic years, the committee decided to not to take any action but to carefully watch this metric in AY2024-25. In this past academic year, some courses that were "red" previously appeared to resolve. Now that results are available for AY2024-25, the committee will meet again to investigate what, if any, changes are required to address this outcome, particularly for CEE 3320, which has remained in the "yellow" for several years despite other metrics showing positive outcomes.

Additionally, for this outcome and all others, the use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

SLO2: Apply Engineering Design to Produce Solutions That Meet Specified Needs

Define Outcome:

Students should demonstrate 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.

Assessment Methods:

1. CEE 4950 Senior Design Course Components
    a. Mentor Grade on Final Report - Engineering Design
    b. Faculty Grade on Final Report - Engineering Design
    c. Assessment of Needs - CEE 4950 Ch 2 "Beyond the Numbers"
2. Senior Exit Surveys
    a. Single survey question covers "Apply engineering design"
    b. Single survey question covers "consideration of..."
    c. Single survey question covers "...factors"

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. CEE 4950 Senior Design Course Components
    a. Acceptable; Average ≥ 70
    b. Excellent; Average ≥ 80
2. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:

2.A Technology Infused Programs,2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

ABET 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	2019-20		2020-21		2021-22		2022-23		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
CEE 4950 Senior Design Course Components												
Avg Grade on Final Technical Chapter from Mentors	87.6	COVID	86.7	89.3	93.0	92.9	86.7	91.2	81.3	92.9	89.1	91.6
Avg Grade on Final Technical Chapter from Faculty	85.2	COVID	86.6	86.0	87.0	87.2	84.0	84.9	75.1	85.2	85.4	85.0
Avg Grade on Final "Beyond the Numbers" Chapter	92.0	COVID	91.2	81.1	77.7	89.4	75.7	88.9	86.6	82.6	87.7	83.5
Senior Exit Surveys												
Survey question 2a: Apply engineering design	3.58	3.65	3.48	3.55	3.70	3.56	3.80	3.56	3.54	3.89	3.36	3.58
Survey question 2b: Consider public health, safety, and welfare	3.71	3.72	3.67	3.73	3.74	3.74	3.73	3.63	3.58	3.89	3.30	3.73
Survey question 2c: Consider global, cultural, social...	3.50	3.48	3.39	3.55	3.61	3.38	3.53	3.38	3.33	3.74	3.24	3.42
Co-op Employer Survey - Number of Co-op Employer Responses		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Considers public health, safety, and welfare..."		3.00	3.20	3.20	3.20	3.20	3.20	---	*Discontinued - insufficient data points*			

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY 2024-25 in conjunction with previously defined thresholds, no actions are required.

For this outcome and all others, the use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

SLO3: Communicate Effectively

Define Outcome:

Students should demonstrate an ability to communicate effectively with a range of audiences.

Assessment Methods:

1. CEE 4950 Senior Design Course Components
    a. CEE 4950 Senior Design - Written Report (Technical Writing)
    b. CEE 4950 Senior Design - Oral Presentation (Presentation Skills)
    c. CEE 4950 Senior Design - Oral Presentation (Quality of Slides)
    d. CEE 4950 Senior Design - Poster Presentation
2. Senior Exit Surveys
    a. Single survey question covers (3) - Writing
    b. Single survey question covers (3) - Oral

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. CEE 4950 Senior Design Course Components
    a. Acceptable; Average ≥ 70
    b. Excellent; Average ≥ 80
2. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:

2.A Technology Infused Programs

Results and Analysis:

ABET 3. an ability to communicate effectively with a range of audiences												
	2019-20		2020-21		2021-22		2022-23		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
CEE 4950 Senior Design Course Components												
Avg Technical Writing Grade on Final Written Report	87.6	COVID	95.1	83.3	90.1	90.0	84.7	82.3	76.5	86.5	89.4	87.8
Avg Presentation Skills Grade on Final Oral Presentation	93.3	COVID	95.6	91.5	95.4	92.4	95.6	92.0	95.8	92.8	91.7	90.3
Avg Quality of Slides Grade on Final Oral Presentation	95.2	COVID	93.6	91.0	95.2	91.7	95.9	91.6	93.9	92.0	91.3	90.9
Avg Grade on Poster Presentation	90.1	COVID	COVID	91.6	93.2	95.0	93.2	93.6	90.2	94.1	92.2	93.9
Senior Exit Surveys												
Survey question 3a: communicate in writing	3.38	3.48	3.58	3.27	3.57	3.44	3.77	3.47	3.33	3.74	3.27	3.62
Survey question 3b: communicate orally	3.50	3.36	3.48	3.45	3.65	3.51	3.70	3.41	3.54	3.78	3.33	3.54
Co-op Employer Survey - Number of Co-op Students		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Produces effect written communications..."		3.20	3.20	4.00	3.20	3.20	No Reponse	---	*Discontinued - insufficient data points*			
"Delivers effective oral presentations..."		3.60	2.40	4.00	No response	3.20	No Reponse	---	*Discontinued - insufficient data points*			

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY2024-25 in conjunction with previously defined thresholds, no actions are required.

For this outcome and all others, the use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

SLO4: Recognize Ethical and Professional Responsibilities and Make Informed Judgments

Define Outcome:
Students should demonstrate an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

Assessment Methods:

1. FE Exam Ratio Scores
    a. Ethics & Business Practices
2. Instructional Outcome Survey Question(s)
    a. CEE 4920 Professionalism and Ethics
3. Senior Exit Surveys
    a. Single survey question covers "ethical and professional responsibilities..."
    b. Single survey question covers "make informed judgments..."

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. FE Exam Ratio Scores
    a. Acceptable; Ratio Score ≥ 0.80
    b. Excellent; Ratio Score ≥ 0.90
2. Instructional Outcome Survey Question(s)
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75
3. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:
1.A Experiential Learning,2.A Technology Infused Programs

Results and Analysis:

ABET 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

	2019-20		2020-21		2021-22		2022-23		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
FE Exam Ratio Scores	*Jul-Dec*											
Ethics & Professional Practice	0.84	COVID	0.92	0.90	0.99	1.03	1.06	1.04	0.93	0.91	1.06	*
Instructional Outcome Survey Question(s)												
CEE 4920 Professionalism and Ethics	3.35	COVID	3.66	3.44	3.69	3.60	3.68	3.79	3.72	3.66	3.58	3.68
Senior Exit Surveys												
Survey question 4a: recognize ethical and professional responsibilities	3.57	3.54	3.76	3.45	3.78	3.62	3.77	3.69	3.58	3.89	3.52	3.65
Survey question 4b: make informed judgements, considering...	3.57	3.44	3.48	3.36	3.57	3.51	3.70	3.56	3.50	3.89	3.36	3.54
Co-op Employer Survey - Number of Co-op Students		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Recongizes professional and ethical responsibilities"		3.40	4.00	3.20	3.20	3.20	3.20	---	*Discontinued - insufficient data points*			
"Displays an understanding...impact of engineering (including global, cultural..)"		3.46	3.20	2.40	No response	3.20	3.20	---	*Discontinued - insufficient data points*			
Notes												
* Data not available; released approximately August 2025												

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY2024-25 in conjunction with previously defined thresholds, no actions are required.

FE data will be released approximately August 2025 and will be incorporated in the metrics for discussion at the annual CEE Faculty Retreat in early fall 2025.

For this outcome and all others, the use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

SLO5: Teamwork

Define Outcome:

Students should demonstrate an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

Assessment Methods:

1. CEE 4920 Professionalism and Ethics Course Components
    a. CEE 4920 Professionalism and Ethics - Leadership Assignment
2. CEE 4950 Senior Design Course Components
    a. CEE 4950 Senior Design - Leadership paper
    b. CEE 4950 Senior Design - Management paper
    c. CEE 4950 Senior Design - Project Mgmt (MS Project)
    d. CEE 4950 Senior Design - Peer Eval
3. Instructional Outcome Survey Question(s)
    a. CEE 4950 Senior Design
4. Senior Exit Surveys
    a. Single survey question covers leadership
    b. Single survey question covers collaborative and inclusive environment
    c. Single survey question covers "establish goals, plan tasks, and meet objectives"

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. CEE 4920 Professionalism and Ethics Course Components
    a. Acceptable; Average ≥ 70
    b. Excellent; Average ≥ 80
2. CEE 4950 Senior Design Course Components
    a. Acceptable; Average ≥ 70
    b. Excellent; Average ≥ 80
3. Instructional Outcome Survey Question(s)
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75
4. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:

2.A Technology Infused Programs

Results and Analysis:

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

	2019-20		2020-21		2021-22		2022-23		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
CEE 4920 Professionalism and Ethics Course Components												
Average Grade on Leadership Assignment		Tested 2021-22, Official 2022-23			95.6	86.0	92.1	94.4	73.0	89.7	87.0	73.3
CEE 4950 Senior Design Course Components												
Average Grade on Leadership Paper	95.0	COVID	85.0	92.5	---	96.5	*Discontinued - moved to CEE 4920*					
Average Grade on Management Paper	93.0	COVID	81.6	91.3	---	92.1	*Discontinued - included in other metrics*					
Average Faculty Grade on Final Project Management Chapter	80.0	COVID	91.2	91.8	92.0	96.0	83.9	91.4	88.0	88.8	91.0	92.8
Average Grade on Final Peer Eval	94.7	COVID	93.3	89.9	94.3	90.0	91.9	94.1	89.5	92.3	94.8	93.6
Instructional Outcome Survey Question(s)												
CEE 4950 Senior Design	3.69	COVID	3.55	3.78	3.82	3.48	3.43	3.64	3.43	3.75	3.52	3.63
Senior Exit Surveys												
Survey question 5a: function on team, provide leadership	3.46	3.52	3.61	3.73	3.87	3.59	3.77	3.63	3.46	3.78	3.52	3.58
Survey question 5b: function on team, create collaborative/inclusive environment	3.58	3.50	3.55	3.55	3.65	3.51	3.70	3.66	3.50	3.74	3.48	3.62
Survey question 5c: function on team, establish goals, plan tasks, meet objectives	3.67	3.48	3.58	3.36	3.65	3.54	3.83	3.63	3.46	3.78	3.48	3.62
Co-op Employer Survey - Number of Co-op Students		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Works effectively with other employees"		3.80	4.00	4.00	4.00	4.00	4.00	---	*Discontinued - insufficient data points*			
"Establishes goals, plans tasks, meets objectives"		3.40	3.20	4.00	3.20	3.20	3.20	---	*Discontinued - insufficient data points*			

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY2024-25 in conjunction with previously defined thresholds, no actions are required.

While no actions are required, the CEE ABET committee did include expanded Instructional Outcome Survey results. Previously, the average survey results were included (and still continue to be). Moving forward, the committee and department will track responses to individual questions on the survey to elucidate if there are any differences between the questions, which cover a wide variety of aspects regarding SLO5.

For this outcome and all others, the use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

SLO6: Experiment, Interpret Data, and Use Engineering Judgment

Define Outcome:
Students should demonstrate an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Assessment Methods:

1. Average Course Component Grades
    a. "Develop and Conduct" - Introduction and Methodology
        i. CEE 3030
        ii. CEE 3040
        iii. CEE 3120
        iv. CEE 3430
    b. "Analyze and Interpret" - Results and Discussion
        i. CEE 3030
        ii. CEE 3040
        iii. CEE 3120
        iv. CEE 3430
    c. "Use Eng. Judgment" - Conclusions
        i. CEE 3030
        ii. CEE 3040
        iii. CEE 3120
        iv. CEE 3430
2. Senior Exit Surveys
    a. Single survey question covers "develop and conduct"
    b. Single survey question covers "analyze and interpret"
    c. Single survey question covers "draw conclusions"

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. Average Course Component Grades
    a. Acceptable; Average ≥ 70
    b. Excellent; Average ≥ 80
2. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:
2.A Technology Infused Programs

Results and Analysis:

ABET 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

	2019-20		2020-21		2021-22		2022-23**		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
Average Course Component Grades												
"Develop and Conduct" - Introduction and Methodology												
CEE 3030			3.95	86.0	77.0	84.0	*	89.4	91.6	89.8	89.8	95.2
CEE 3040	3.57	3.33	3.94	3.68	3.62	3.59	85.0	94.4	93.0	94.8	89.0	93.0
CEE 3120		3.58	3.67	3.78	90.0	88.0	87.9	92.2	96.0	93.5	87.4	***
CEE 3430	3.52	3.13	3.71	88.3	94.0	97.0	99.0	94.4	92.0	94.8	86.9	87.0
"Analyze and Interpret" - Results and Discussion												
CEE 3030			3.58	68.0	72.0	75.0	*	85.9	88.2	84.6	84.6	86.2
CEE 3040	3.20	2.80	2.75	3.42	2.90	3.56	58.8	81.0	89.0	87.5	76.0	88.0
CEE 3120		3.49	3.55	3.50	86.0	81.0	82.8	87.7	93.8	92.6	90.2	***
CEE 3430	3.86	3.82	3.40	89.9	91.4	90.0	84.0	81.0	79.5	87.5	80.9	89.0
"Use Eng. Judgment" - Conclusions												
CEE 3030			3.57	70.0	71.0	71.0	*	72.1	70.7	83.0	83.0	77.3
CEE 3040	3.20	3.24	3.13	3.42	3.37	3.37	63.8	76.0	87.0	82.7	84.0	83.0
CEE 3120		3.39	3.55	3.34	83.0	84.0	85.4	92.5	93.3	93.1	88.3	***
CEE 3430	3.81	3.68	3.72	90.2	94.3	80.0	86.0	76.0	90.0	82.7	87.5	93.0
Senior Exit Surveys												
Survey question 6a: experiments, develop and conduct	3.50	3.38	3.45	3.45	3.57	3.46	3.67	3.50	3.42	3.78	3.24	3.42
Survey question 6b: experiments, analyze/interpret data	3.67	3.56	3.73	3.64	3.70	3.59	3.77	3.66	3.67	3.89	3.52	3.69
Survey question 6c: experiments, draw conclusions	3.75	3.60	3.64	3.36	3.61	3.64	3.77	3.69	3.63	3.96	3.45	3.58
Co-op Employer Survey - Number of Co-op Students		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Uses engineering judgement to draw conclusions"		3.4	3.2	3.2	3.2	No Reponse	3.20	---	*Discontinued - insufficient data points*			

Notes

* *Fall 2022 - Faculty member was on medical leave for part of the semester so data were not available*

** *Beginning 2022-23 all grades were converted from a 4-point scale to a 100-point scale*

*** *Only 2 students enrolled*

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY2024-25 in conjunction with previously defined thresholds, no actions are required.

For this outcome and all others, the use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

SLO7: Ability to Acquire and Apply New Knowledge

Define Outcome:
Students should demonstrate an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Assessment Methods:

1. Specific Course Assignment
    a. CEE 4800 Project - Report - Technical Summary - "Acquire"
    b. CEE 4800 Project - Resource - Technical Content - "Apply"
2. Senior Exit Surveys
    a. Single survey question covers "acquire"
    b. Single survey question covers "apply"

Attached Files: See Appendix 2

Criteria for Success (Thresholds for Assessment Methods):

1. Specific Course Assignment
    a. Acceptable;
    b. Excellent;
2. Senior Exit Surveys
    a. Acceptable; Average ≥ 2.50
    b. Excellent; Average ≥ 2.75

Link to 'Tech Tomorrow' Strategic Plan:
1.A Experiential Learning,2.A Technology Infused Programs,2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

ABET 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	2019-20		2020-21		2021-22		2022-23 *		2023-24		2024-25	
	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr
Specific Course Assignment												
CEE 4800 Project - Report - Technical Summary - "Acquire"		88.3	82.2	86.7	78.0	81.0	83.0		88.0		88.0	
CEE 4800 Project - Resource - Technical Content - "Apply"		83.9	82.5	85.0	89.0	83.0	85.7		89.0		87.0	
Senior Exit Surveys												
Survey question 7a: acquire new knowledge	3.67	3.56	3.61	3.36	3.57	3.62	3.73	3.66	3.54	3.89	3.39	3.54
Survey question 7b: apply new knowledge	3.75	3.52	3.61	3.55	3.70	3.64	3.73	3.69	3.54	3.89	3.45	3.54
Co-op Employer Survey - Number of Co-op Students		*4*	*1*	*1*	*1*	*1*	*1*	*0*				
"Displays an ability to acquire and apply new knowledge"		3.60	4.00	3.20	3.20	3.20	3.20	---	*Discontinued - insufficient data points*			
Notes												
* *Change in faculty course assignments mean this metric will only be available in Fall semesters starting 2022-23*												

Use of Results to Improve Outcomes:

Based on the assessment metrics for AY2024-25 in conjunction with previously defined thresholds, no actions are required.

For this outcome and all others, the use of co-op employer surveys were dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

Summative Evaluation:
Based on the assessment metrics for AY2024-25 in conjunction with previously defined thresholds, no actions are required. Regardless, the CEE ABET committee did initiate discussion regarding ABET SO1/IE SLO1 looking at solving complex engineering problems. During AY2023-24, the committee decided to not to take any action but to carefully watch this metric in AY2024-25. In this past academic year, some courses that were "red" previously appeared to resolve. Now that results are available for AY2024-25, the results will be presented at the CEE Faculty Retreat early in the fall 2025 semester. It is expected that the CEE ABET committee will again review ABET SO1/IE SLO1, particularly in regards to CEE 3320.

Assessment Plan Changes:
While no actions are required, the CEE ABET committee has been tracking expanded Instructional Outcome Survey results for SLO4 and SLO5. Previously, the average survey results were included (and still continue to be). Moving forward, the committee and department will internally track responses to individual questions on the survey to elucidate if there are any differences between the questions, which cover a wide variety of aspects. If any issues are identified, it is anticipated that this additional tracking will make improvements easier to identify.

The use of co-op employer surveys was dropped from the list of assessment methods. Over the past several years, the number of students participating in co-op along with the respective employer responses have been very small, with some semesters having no responses. Therefore, this assessment has been removed.

List of Appendices:
Appendix 1: Curriculum Map
Appendix 2: Civil Engineering ABET Assessment Criterion

Appendix 1: Curriculum Map

	1 – Ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science and mathematics	2 – Apply engineering design to produce solutions that meet specified needs…	3 –Ability to communicate effectively…	4 – Ability to recognize ethical and professional responsibilities…and make informed judgments…	5 – Ability to function on a team…	6 – Develop and conduct appropriate experimentation…	7 – Ability to acquire and apply new knowledge…
Required – Engineering Topics							
CEE 3030 (3) Civil Engineering Materials							
CEE 3320 (3) Structural Mechanics							
CEE 3413 (3) Environmental Engineering							
CEE 3500 (3) Construction Engineering Mgmt							
CEE 3610 (3) Transportation Engineering							
CEE 4800 (3) Geotechnical Engineering I							
CEE 4920 (1) Professionalism & Ethics							
CEE 4940 (0) Fundamentals of CE							
CEE 4950 (3) Senior Design Project							
CEE Lab Electives							
CEE 3040 (1) Geotechnical Engr. Lab							
CEE 3120 (1) Mechanics of Materials Lab							
CEE 3430 (1) Environmental Engineering Lab							

Appendix 2: Civil Engineering ABET Assessment Criterion

CRITERION 4. CONTINUOUS IMPROVEMENT

The purpose of this chapter is to present in detail our continuous improvement process for the most recent six-year cycle.

4A. Student Outcomes

This section presents the assessment and level-of-attainment for each SO. The section includes information on the process, frequency, expected level of attainment, summary results for each SO, and how these results are documented and maintained.

4A.1. The Assessment Process

CEE describes each of the assessment metrics as follows:

1. Course Components are grades on a specific, recurring assignment or collection of assignments in a specific course. The assignment must be common to all faculty who teach the course. In the revision process, CEE increased the use of this type of metric, focusing on several assignments in the capstone Design course (CEE 4950 Senior Design).

2. FE Exam Scores are the topic area ratio scores provided to CEE by NCEES. CEE requires all students to take the FE exam, so our scores are representative of all students.

3. Course Instructional Outcome Surveys and Senior Exit Surveys are Likert scale survey questions. All have 4 answers: Strongly Disagree, Disagree, Agree, and Strongly Agree.

4A.2. Assessment Frequency

CEE uses a hybrid assessment frequency. Data collection for most metrics occurs each semester, but results are reviewed annually. Regarding the review interval, results are discussed by the CEE faculty at the annual faculty meeting just prior to fall semester.

4A.3. Expected Levels of Attainment

Because of scale differences between metrics, CEE has implemented color-coding to aid in the review process. The color coding and the criteria used in its application are found in Table 4-2.

Table 4-2. SO Attainment Color Coding Criteria

Color Code			
Attainment Level	Unacceptable	Acceptable	Excellent
Metric	Criteria		
Course Components (Out of 100)	Average < 70	Average ≥ 70	Average ≥ 80
FE Exam Ratio Scores (CEE Performance Index / Comparator)	Ratio Score < 0.80	Ratio Score ≥ 0.80	Ratio Score ≥ 0.90
Final Course Grades (4-Point Grading Scale)	Average < 2.50	Average ≥ 2.50	Average ≥ 2.75
Course Instructional Outcome Surveys (Out of 4)	Average < 2.50	Average ≥ 2.50	Average ≥ 2.75
Senior Exit Surveys (Out of 4)	Average < 2.50	Average ≥ 2.50	Average ≥ 2.75

Note that rounding in the data can cause the appearance of incorrect color-coding, as the color is based on a non-rounded value.

Both before and after revising the CEE assessment metrics, the faculty chose to include multiple metrics for each SO. Multiple metrics help the faculty to avoid unneeded reactions to statistical outliers that occur during any evaluation. As such, the occurrence of a single Low or Unsatisfactory rating will not necessarily require a response.

The thresholds for a required response are:

- Multiple metrics in the red in a single academic year for a given outcome
- Single metrics in the red in consecutive academic years for a given outcome
- Multiple metrics that remain "in the yellow" (i.e., satisfactory) in multiple academic years for a given outcome. Yellow followed by red and vice versa are considered multiple "satisfactory" years as well as single years in the red.

In addition to these required responses, there are three additional ways in which responses may be initiated. During their reviews of the metrics, the Chair, the Faculty, or the Advisory Board can request action or further investigation even if all the metrics are Excellent. This flexibility allows the opportunity to begin investigations before they are required, hopefully reducing our response time in applying improvements. It also allows for improvements even when there are no issues.