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A Comparison of ABET Assessment Instruments

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Abstract

A critical component of the ABET continuous improvement process is demonstrating continuous improvement of the program by assessing student outcomes. The assessment of student outcome achievement levels requires considerable effort by faculty and coordinators. This paper provides the lessons learned from ABET assessment in Morgan State's School of Engineering, which used a variety of assessment instruments, including Microsoft Excel and Google Form spreadsheets, a cloud-based outcome assessment system called Searchlight, and Canvas Learning Management System (LMS) to conduct program student outcome assessment.

The study concluded that Canvas is superior for evaluating student outcome levels of attainment and SearchLight for reporting and continuous improvement. SearchLight seamlessly generated graphs and reports to allow programs to drill down on student performance by course, outcome, and performance indicators. While Searchlight greatly improved the assessment process, it has two major limitations: (1) it is cost prohibitive, and (2) assessment scores were inputted in aggregate at the end of the semester with the guidance of using one or two signature assignments to determine the score. Conversely, Canvas allows faculty to assess and grade simultaneously, thus clearly showing how course-level student outcome levels are obtained from individual assessment instruments. Additionally, conducting assessments in Canvas resulted in higher completion rates. This paper presents the advantages and disadvantages of each assessment tool and outlines an amended process that utilizes Canvas for assessment and mimics and improves upon the reporting in SearchLight by creating a customized dashboard in PowerBI.

1 Introduction

For engineering programs, domestic and abroad, obtaining ABET accreditation is critical to the success of the program, the placement of graduates, and the career advancement of alumni. ABET's six-year evaluation cycle ensures alignment between industry needs and academic curriculum. The crux of program accreditation lies in the ability to show continuous improvement of the program through the assessment of student outcomes. The continuous improvement process has six components: (1) stakeholder and constituent involvement, (2) development of program educational objectives for program alumni, (3) determination of student outcomes achievable by program graduates, (4) alignment of student outcomes with educational practices, (5) assessment of student outcome achievement levels, and (6) evaluation of assessment data.

The latter half of the continuous improvement process, which is the focus of this study, requires considerable effort by faculty and coordinators. The development and revision of a program's assessment process is a time-intensive process [1]. This process requires thoughtful mapping, planning, and alignment of student outcomes to direct assessments of students that must conducted by faculty on an on-going basis. This process must be systematic to facilitate the continuous review of programs.

Faculty assessment of student outcome performance is a critical component of this process. While the spreadsheet is still the most common assessment tool, several programs have developed other tools and instruments to aid in the assessment process. These tools are often used to automate some portion of the assessment process [2–5]. Programs develop tools in-house or purchase commercial software. These tools may have several benefits such as including the systematic integration of planning and assessment, centralized maintenance location, provides uniformity in the assessment process, and can root-out curricular deficiencies in a systematic way [4].

Some programs leverage their learning management systems (LMS) for student assessment. LMS systems such as Blackboard and Canvas can be used to directly assess student performance [6–8]. Using LMS for assessment is beneficial as ABET assessment occurs simultaneously with grading. The data from these platforms may be exported into a csv file and database management tools such as Microsoft Access can be used to maintain such data [9].

As noted above, there are a variety of tools available for ABET assessment. This paper provides the lessons learned from ABET assessment from the School of Engineering at Morgan State University. The School used a variety of assessment tools including Microsoft Excel and Google Form spreadsheets, a cloud-based outcome assessment system called Searchlight, and Canvas Learning Management System (LMS).

2 Overview of Program Assessment

The School of Engineering currently consists of five departments and six academic programs with a seventh program beginning next academic year. Five of the programs have undergone program accreditation review. Four of the programs are under the Engineering Accreditation Commission (EAC) while the last one is accredited by the Applied and Natural Science Accreditation Commission (ANSAC).

Prior to 2016, each department undertook program accreditation independently. However in Fall 2016, midway through the six-year accreditation period, the School began to coordinate efforts between the programs. This coordination team consisted of the Associate Dean for Undergraduate Studies and a representative from each department known as the ABET Coordinator. The programs benefited greatly from the arrangement due to streamlined administration, shared best practices, regular meetings, and the scheduling of milestones [10]. The coordinated effort resulted in the successful six-year accreditation of all four programs under review.

While the ABET Coordination team provided guidance for the preparation of the self-study and visit, there was no coordination in the tools used for assessment. This paper focuses on the four legacy departments in the school: Civil Engineering (CE), Electrical & Computer Engineering (ECE), Industrial & Systems Engineering (ISE), and Transportation & Urban Infrastructure Studies (TUIS). Figure 1 shows the adoption of tools in each department. Overall, four tools were utilized: Microsoft Excel, Google Forms, SearchLight Performance Assessment, and Canvas Learning Management System.

Figure 1 shows the timeline of tool adoption for each department. All departments began using Excel. The ECE department transitioned to SearchLight in 2014. SearchLight Performance Assessment is a flexible performance assessment engine designed to help educational institutions effectively utilize data to drive decision-making. The software is an assessment tool that allows departments to enter, generate, and analyze course or program-based performance rubrics. It is intended to be a standalone web-driven solution that requires no additional equipment or software. The School of Engineering, specifically Electrical & Computer Engineering, was the first department at the University to adopt SearchLight.

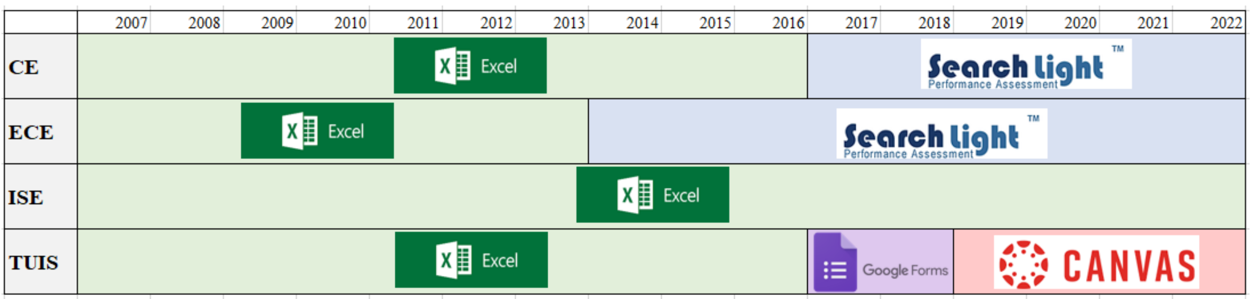


Figure 1: Assessment Tools Timeline

After its deployment in ECE, other units within the University adopted SearchLight for Course Evaluations, Annual Reports, Time & Effort Reporting, Grant Management, and Title III Monthly Reporting. In 2017, the CE department followed suit and adopted SearchLight for ABET assessment. The TUIS department transitioned to Google Forms in 2017 and then in 2019 to Canvas LMS for data collection. Assessments performed in Canvas were still compiled and summarized in Excel. However, in 2022 the University announced that SearchLight would no longer be supported after the 2022-2023 academic year. This was the catalyst for the ABET Coordination Team to review the assessment tools used in each department with the aim of standardizing the assessment tools and process within the School.

The following section, Section 3, outlines the various ABET data collection tools and processes evaluated. Section 4 presents the advantages and disadvantages of each tool. Finally, Section 5 presents the way forward.

3 ABET Assessment Data Collection Tools and Processes

Regardless of the tool selected, the coordinator for each program performs an initial mapping of student outcomes to the courses, develops student outcome rubrics containing the performance indicators for each student outcome, and determines the assessment schedule. Table 1 shows the assessment data collection process stages with each tool. The stages are as follows:

1. *Initial setup:* Activities that only need to be done once for a set of student outcomes
2. *Semester setup:* Activities that are needed to assess the courses for a particular semester

3. *Assessment:* Activities required for the direct assessment of student outcomes
4. *Collection of Samples:* Activities required for the collection of student assessment and sample material aligned to the student outcome mapping
5. *Compilation:* Activities required for the compiling, reporting, and review of student outcome attainment

The amount of work for the ABET Coordinator and faculty varies by tool. However, the work required for the initial setup is quite similar across tools. Coordinators all have a familiarity with spreadsheets, but there is some learning required for the use of Canvas and SearchLight. Both Canvas and SearchLight have tools to mass import student outcome rubrics. Since Canvas provides instrument-level assessment, the course outcome score calculation method must be determined. There are four types of calculation methods used for student mastery in Canvas: Decaying Average, n Number of Times, Most Recent Score, and Highest Score [11].

Canvas does not require any work by the coordinator each semester. Once faculty know the outcomes mapped to their course, they simply import those outcomes into their course at the beginning of the semester through the ”Find” features which contains the program-level student outcomes; see Figure 2. Conversely, in SearchLight, this process is centralized at the administrative or coordinator level; see Figure 3. In this instance, faculty are not able to assess their course until this occurs, so timely mapping of student outcomes each semester is paramount.

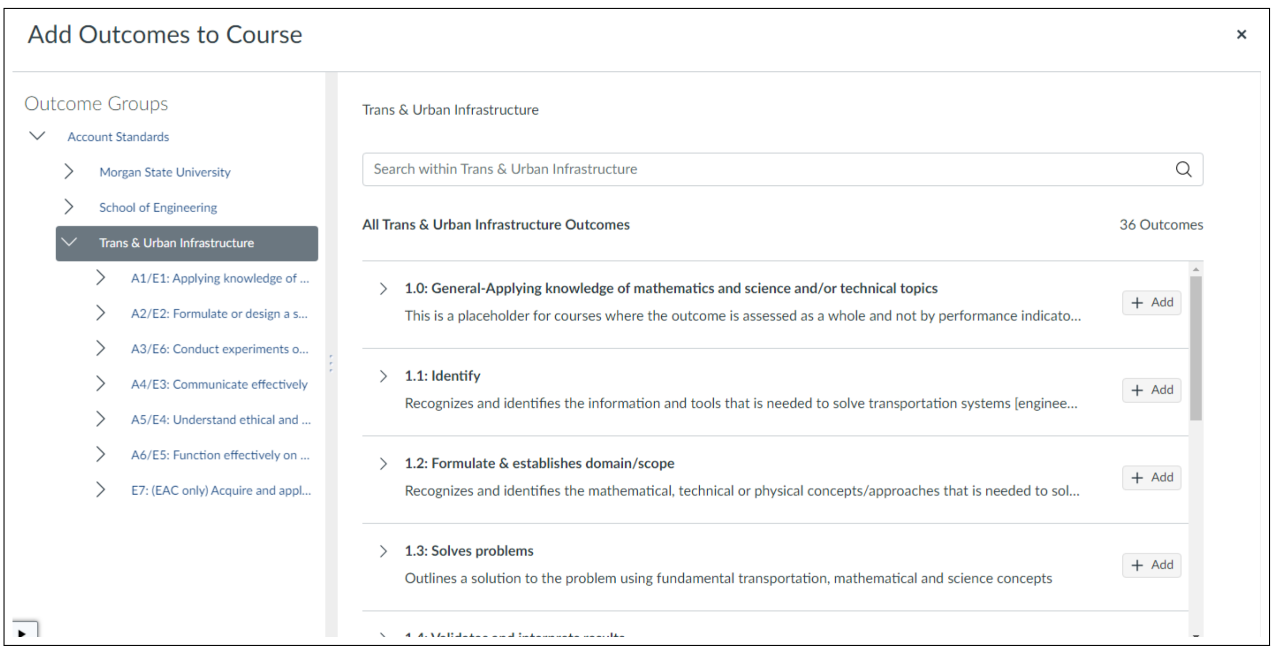


Figure 2: Importing Outcomes into Canvas Course

Assessments using spreadsheets and SearchLight are most often conducted at the end of the semester. In each of these methods, only the overall score is inputted. Spreadsheet-based methods require faculty to populate the sheet with the names of the students in their course. Assessments conducted in Canvas are directly tied to grading rubrics (see Figure 4) and faculty (or their teaching

Table 1: The Assessment Process by Collection Tool

	Excel / Google Forms	Canvas	SearchLight
Initial Setup	Coordinator develops student outcome spreadsheet	School provides the coordinator a program-level administrative account in Canvas the coordinator imports the student outcome rubrics	Import the outcomes and performance indicators (.doc file)
Semester Setup	Coordinator may send the master file with all outcomes or send individual files with just the outcomes associated for the course. For Google Forms, coordinators provides a link to the folder with the spreadsheets	Faculty import the outcomes associated with each course (if copying course from previous semester the outcomes will transfer)	Map outcomes to each course being assessed
Assessment	Faculty must copy an identifier for each student (name or ID) and then input course-level outcome scores	Faculty add a rubric to the assessment instrument and assess in SpeedGrader (each instrument is assessed)	Faculty log into Searchlight and perform course-level student assessment
Collection of Samples	Department notes assignments on spreadsheets and must save siganature assignment in Google Drive	No action required since rubrics are tied to assessment instrument/assignment. Samples (as selected by coordinator) are submitted to Google Drive before visit.	Faculty can attach the signature assignments(s) into SearchLight and select which Sos and Pis it address
Compilation	For Excel, faculty email or deposit spreadsheet into a shared drive. Coordinator compiles individual spreadsheets into a master spreadsheet.	Coordinator runs an outcome report to get all data as a csv. The data is exported into another tool for reporting and analysis (currently, Excel). Course level reports are available through Canvas Learning Mastery Gradebook.	Course and program reports are automatically generated.

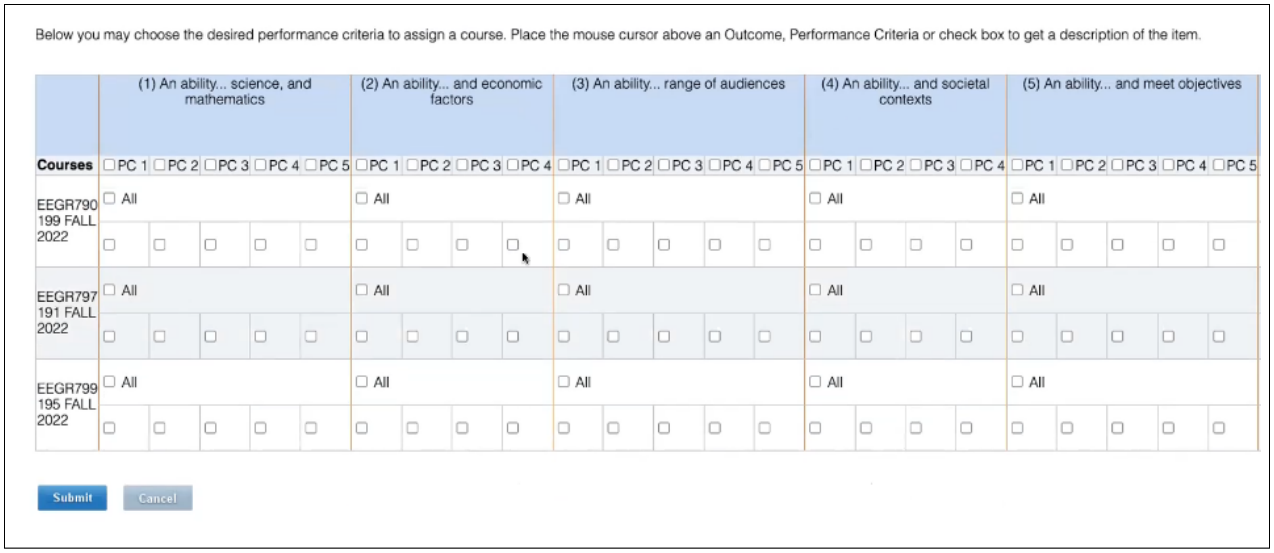


Figure 3: Importing Outcomes in SearchLight

assistants) are encouraged to conduct the assessment as they grade. Figure 5 shows the dashboard to input assessments into Canvas.

The collection of student samples can occur directly in SearchLight. Faculty attach signature instrument(s) when assessing. For spreadsheet methods and Canvas, faculty are asked to provide student sample materials by uploading them to a folder on Google Drive. All electronically submitted assessment instruments are also available in Canvas.

Lastly, regular review of the assessment data is required to facilitate program improvement. This process is automated in SearchLight. SearchLight supports the automatic preparation of key documentation, such as accreditation reports and other compliance-related documentation; refer to Figure 6. Conversely, spreadsheet methods require the coordinator to compile data into a master database each semester and produce graphs and reports for review. Canvas produces a master spreadsheet known as an outcome report that is in csv format. However, faculty can review student performance each semester through the learning mastery gradebook; see Figure 7.

SearchLight has some additional features that are beneficial for the continuous review of programs. Faculty can note modifications made to the course and submit student feedback, reflections on student performance, and proposed action for course improvements.

4 Advantages and Disadvantages of Each Tool

Each assessment tool has advantages and disadvantages. Table 2 shows the strengths of each tool. Excel, Google Forms, and Canvas are readily available to the university community. While the spreadsheet-based methods are easy to use, they are tedious for the coordinator to compile. Spreadsheet tools and SearchLight require faculty to submit an outcome score for each student at the conclusion of the course. While these scores are linked to signature assessment instruments, it is not clear how faculty aggregate performance and determine the scores. Canvas overcomes this limitation by clearly linking the course-level outcome score of a student to the assessment

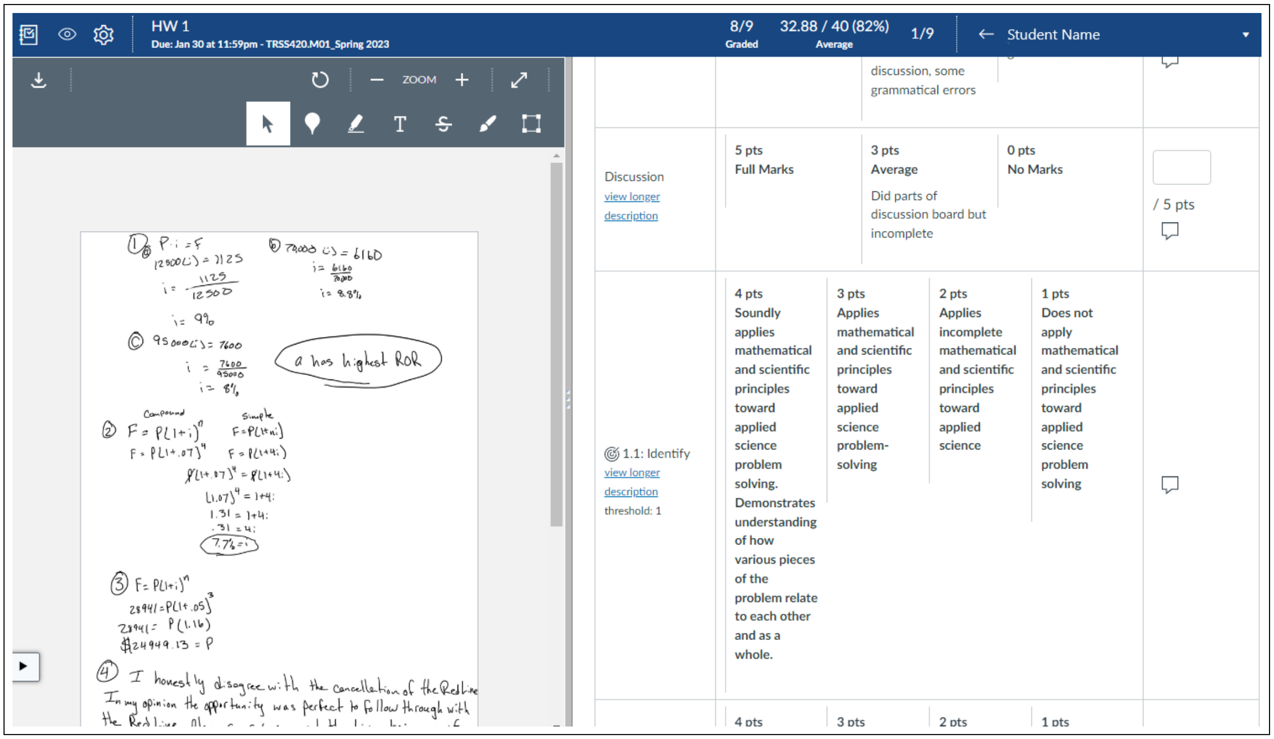


Figure 4: Assessing in Canvas SpeedGrader using Rubrics

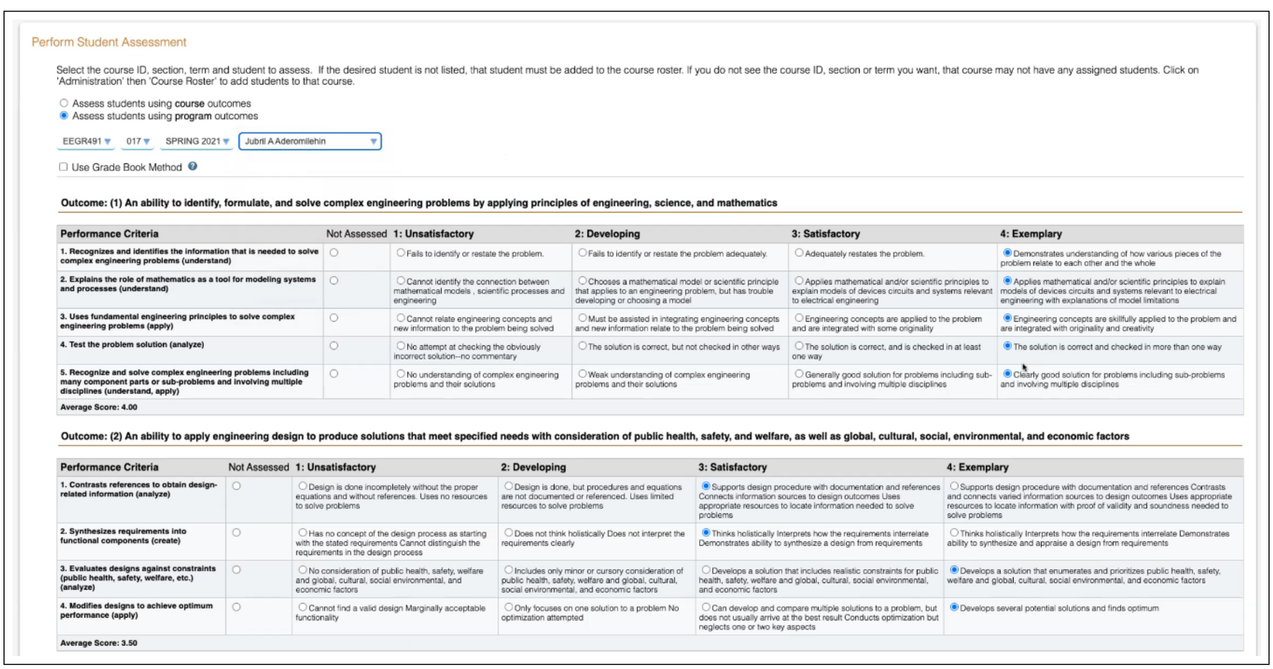
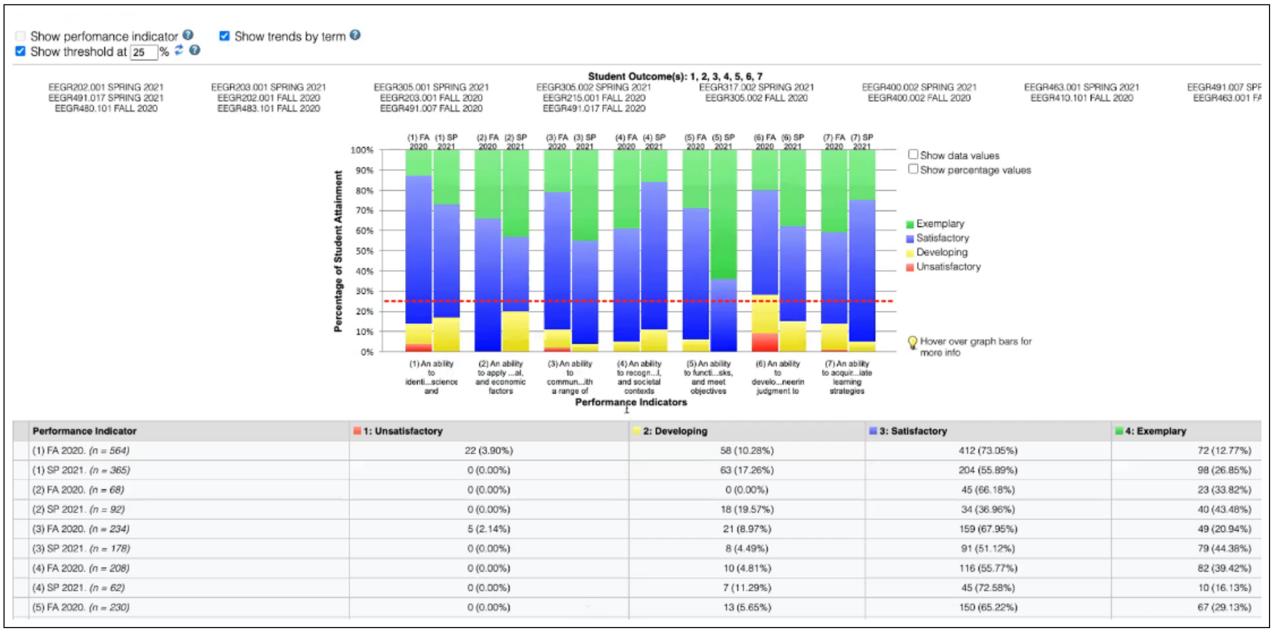
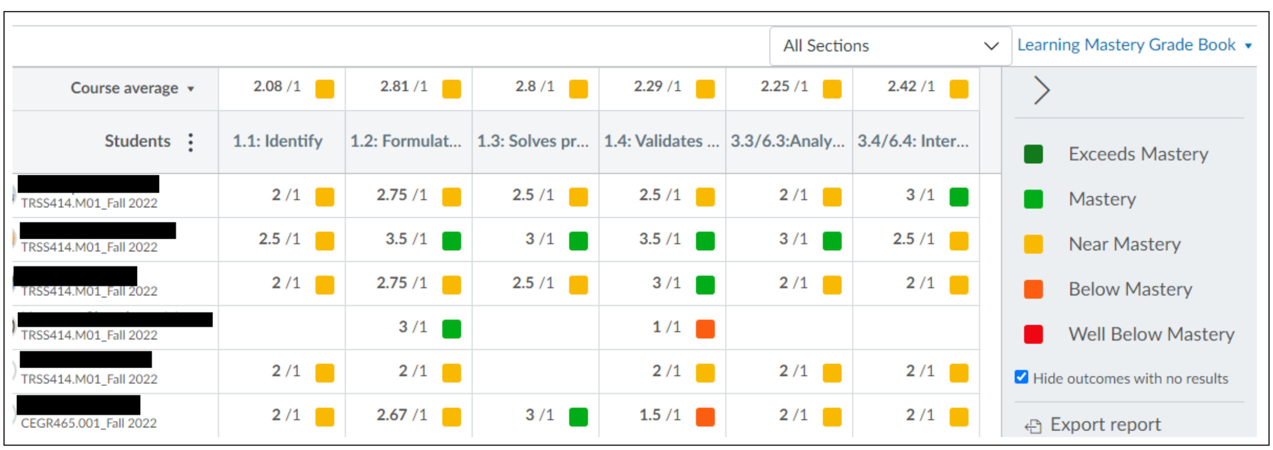


Figure 5: Dashboard to Assess in SearchLight



Performance Indicator	1: Unsatisfactory	2: Developing	3: Satisfactory	4: Exemplary
(1) FA 2020. (n = 564)	22 (3.90%)	58 (10.28%)	412 (73.05%)	72 (12.77%)
(1) SP 2021. (n = 365)	0 (0.00%)	63 (17.26%)	204 (55.89%)	98 (26.85%)
(2) FA 2020. (n = 68)	0 (0.00%)	0 (0.00%)	45 (66.18%)	23 (33.82%)
(2) SP 2021. (n = 92)	0 (0.00%)	18 (19.57%)	34 (36.96%)	40 (43.48%)
(3) FA 2020. (n = 234)	5 (2.14%)	21 (8.97%)	159 (67.95%)	49 (20.94%)
(3) SP 2021. (n = 178)	0 (0.00%)	8 (4.49%)	91 (51.12%)	79 (44.38%)
(4) FA 2020. (n = 208)	0 (0.00%)	10 (4.81%)	116 (55.77%)	82 (39.42%)
(4) SP 2021. (n = 62)	0 (0.00%)	7 (11.29%)	45 (72.58%)	10 (16.13%)
(5) FA 2020. (n = 230)	0 (0.00%)	13 (5.65%)	150 (65.22%)	67 (29.13%)

Figure 6: Sample SearchLight Report



Students	1.1: Identify	1.2: Formulat...	1.3: Solves pr...	1.4: Validates ...	3.3/6.3:Analy...	3.4/6.4: Inter...
Course average	2.08 /1	2.81 /1	2.8 /1	2.29 /1	2.25 /1	2.42 /1
[redacted] TRSS414.M01_Fall 2022	2 /1	2.75 /1	2.5 /1	2.5 /1	2 /1	3 /1
[redacted] TRSS414.M01_Fall 2022	2.5 /1	3.5 /1	3 /1	3.5 /1	3 /1	2.5 /1
[redacted] TRSS414.M01_Fall 2022	2 /1	2.75 /1	2.5 /1	3 /1	2 /1	2 /1
[redacted] TRSS414.M01_Fall 2022		3 /1		1 /1		
[redacted] TRSS414.M01_Fall 2022	2 /1	2 /1		2 /1	2 /1	2 /1
[redacted] CEGR465.001_Fall 2022	2 /1	2.67 /1	3 /1	1.5 /1	2 /1	2 /1

Figure 7: Canvas Learning Mastery Gradebook showing Student Outcome Attainment Level

instruments. The Outcome Results spreadsheet provides data disaggregated by student and assessment instrument. This level of disaggregation proved beneficial during a recent site visit when the program evaluator requested more evidence for an outcome.

Table 2: Summary of Tool Advantages

Advantages	Excel Google Forms	Canvas	Searchlight
Familiarity with tool	X	/	
University enterprise license	X	X	
Assessments occur continuously throughout semester		X	
Clear link between a student's overall score and the instruments that contribute to score		X	
Space for open-ended feedback, reflection, and course improvement	X	/	X
Collect sample material		/	X
Database of all assessments generated		X	X
Course-level reports generated		/	X
Summary reports for program generated			X
Frequent review of student outcome performance			X

Key: X = fully applicable, / = partially applicable

The web-based SearchLight tool seamlessly provides reports. The Faculty Course Assessment Report (FCAR) allows faculty to submit feedback and comments for their courses; see Figure 8 in the appendix. This allows for tracking of any concerns or improvements that have been made. SearchLight allows for uploads of supporting data (e.g. student samples) for each faculty assessment. Experience has shown that the departments using SearchLight review student outcome performance more regularly due to the reporting features. While the format of the reports cannot be changed and is not the most user-friendly, data can be exported to other platforms such as Excel. SearchLight is not without disadvantages. The primary disadvantage is cost. Also, each semester the coordinator must map student outcomes and performance indicators to the course and extra precaution is always required so as not to inadvertently overwrite mappings that have already been done.

5 Determining the Way Forward

The School of Engineering ABET Coordination Team is in the process of standardizing the assessment process moving forward. The study conducted by the team found that Canvas was superior for evaluating student outcome levels of attainment and SearchLight for reporting and continuous improvement.

There were two major advantages of linking assessment with the grading of direct assessment instruments. First, assessments were performed on an ongoing basis which facilitated higher compliance. The team found that faculty were reluctant to submit ABET assessments at the conclusion of the semester as they were fatigued. Secondly, the programs utilizing Canvas were able to evaluate the performance indicators associated with each outcome. They found that some performance indicators were rarely assessed. In some instances, this required review of curriculum and assessment instruments. In other instances, the performance indicator was removed or revised.

Moving forward the ABET Coordination Team is developing a process to export student outcome results from Canvas and import them into a web-based database and reporting interface. The initial plan was to import Canvas assessments into SearchLight. But since this tool is no longer supported by the University, the team is exploring other options such as PowerBI and Tableau.

Figure 9 in the appendix presents the pilot PowerBI dashboard summarizing Canvas student outcome results. The goal of this pilot project is to incorporate and improve upon some of the reporting features found in SearchLight and to compile data from various sources into one database. Though there is increased flexibility by building out the reporting infrastructure, it requires more skills and time from the ABET Coordinators compared to SearchLight. The team is collaboratively determining how to summarize and report the assessment data. Currently, the dashboard for each program consists od three pages: (1) an overview page of student outcome attainment, (2) the student outcome page which looks at each performance indicator and the courses contributing to the outcome, and (3) a course level page which shows the student outcome attainment levels for the course. The building and piloting of the database are expected to continue through Summer 2023 and will be applied in the 2023-2024 academic year.

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Faculty Course Assessment Report

EEGR491.017 - SENIOR DESIGN PROJ II
SPRING 2021 - Kofi Nyarko

Course Description:

This is the second part of a two-part sequence capstone design project. Individual or team design, development, and analyzing of projects. Students are required to present their work in an open forum to faculty, peers and invited guests. A final technical report is required which professionally documents the design project. A copy of the report, with appropriate signatures, must be submitted to the Department office. Prerequisites: EEGR 490. This course is offered only for graduating seniors and must be taken in the student's final semester. Department approval required. (EEGR 491 must be taken either FALL or SPRING).

Grade Distribution:

A	B	C	D	E	F	Total
13	0	0	0	0	0	13

Modifications Made to Course:

Placed a stronger emphasis on demonstrations during the weekly meeting

Last updated: 10/19/2021 9:07:05 AM

Course Outcomes:

None given

Related Student Outcomes:

(1) An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

(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

(3) An ability to communicate effectively with a range of audiences

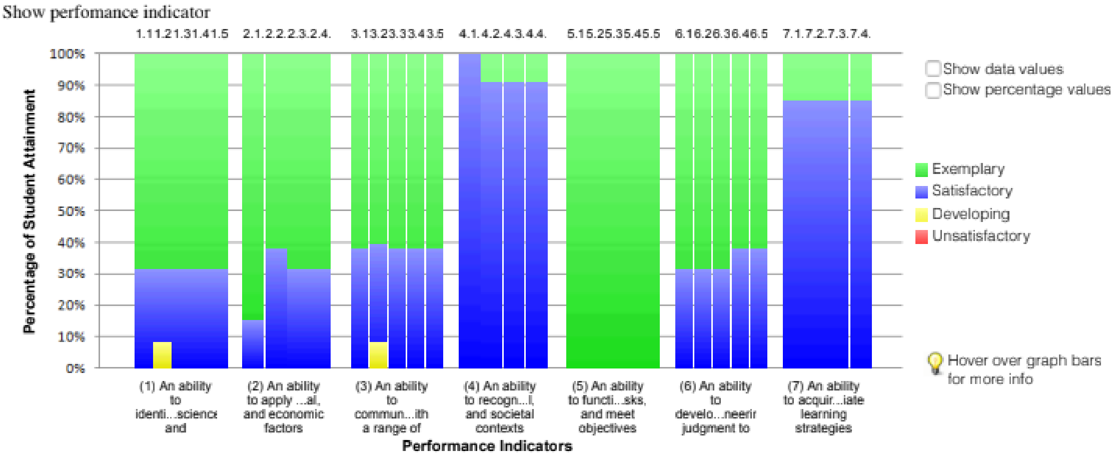
(4) An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

(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

(6) An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw

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

Show perfomance indicator



Performance Indicator	1: Unsatisfactory	2: Developing	3: Satisfactory	4: Exemplary

Performance Indicator	1. Unsatisfactory	2. Developing	3. Satisfactory	4. Exemplary
1.1. Recognizes and identifies the information that is needed to solve complex engineering problems (understand) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
1.2. Explains the role of mathematics as a tool for modeling systems and processes (understand) *(n = 13)*	0 (0.00%)	1 (7.69%)	3 (23.08%)	9 (69.23%)
1.3. Uses fundamental engineering principles to solve complex engineering problems (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
1.4. Test the problem solution (analyze) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
1.5. Recognize and solve complex engineering problems including many component parts or sub-problems and involving multiple disciplines (understand, apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
2.1. Contrasts references to obtain design-related information (analyze) *(n = 13)*	0 (0.00%)	0 (0.00%)	2 (15.38%)	11 (84.62%)
2.2. Synthesizes requirements into functional components (create) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
2.3. Evaluates designs against constraints (public health, safety, welfare, etc.) (analyze) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
2.4. Modifies designs to achieve optimum performance (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
3.1. Identifies and selects appropriate material to include in oral & written presentations, based on the audience, and including references (understand) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
3.2. Explains the subject matter, demonstrating a clear understanding of the material (understand) *(n = 13)*	0 (0.00%)	1 (7.69%)	4 (30.77%)	8 (61.54%)
3.3. Uses illustrations to support text in oral & written presentations (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
3.4. Uses appropriate gestures, eye contact and voice quality for delivering presentations (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
3.5. Exhibits professional appearance suitable for industry standards (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
4.1. Describe the IEEE Code of Ethics (understand) *(n = 3)*	0 (0.00%)	0 (0.00%)	3 (100.00%)	0 (0.00%)
4.2. Identifies and analyzes ethical dilemmas, and formulate appropriate ethical decisions based on professional standards (analyze) *(n = 11)*	0 (0.00%)	0 (0.00%)	10 (90.91%)	1 (9.09%)
4.3. Describes the potential impact of technology and its applications (understand) *(n = 11)*	0 (0.00%)	0 (0.00%)	10 (90.91%)	1 (9.09%)
4.4. Evaluates alternative engineering solutions or scenarios and makes informed judgements which consider the impact of global, economic, environmental and societal issues (evaluate) *(n = 11)*	0 (0.00%)	0 (0.00%)	10 (90.91%)	1 (9.09%)
5.1. Demonstrates ability to function effectively as a leader or member of a team (apply) *(n = 12)*	0 (0.00%)	0 (0.00%)	0 (0.00%)	12 (100.00%)
5.2. Demonstrate ability to resolves differences in a professional manner (apply) *(n = 12)*	0 (0.00%)	0 (0.00%)	0 (0.00%)	12 (100.00%)
5.3. Demonstrate that all team members are inclusive and collaborative (apply) *(n = 12)*	0 (0.00%)	0 (0.00%)	0 (0.00%)	12 (100.00%)
5.4. Demonstrate ability to establish goals, and plan tasks for the project (apply) *(n = 12)*	0 (0.00%)	0 (0.00%)	0 (0.00%)	12 (100.00%)
5.5. Demonstrate ability to meet the project objectives (apply) *(n = 12)*	0 (0.00%)	0 (0.00%)	0 (0.00%)	12 (100.00%)
6.1. Develops a hypothesis and a plan (experimental method) to evaluate it using engineering principles and practice(create) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
6.2. Identifies & uses modern hardware/software tools/techniques to solve engineering problems (understand) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
6.3. Collects data using software and electronic test and measurement equipment (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	4 (30.77%)	9 (69.23%)
6.4. Analyzes results and components of the design using engineering models (analyze) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
6.5. Explains experimental results as they relate to theoretical results.(understand) *(n = 13)*	0 (0.00%)	0 (0.00%)	5 (38.46%)	8 (61.54%)
7.1. Recognizes the need to join student professional organizations and enroll in workshops, seminars, conferences and/or short courses, after graduation (understand) *(n = 13)*	0 (0.00%)	0 (0.00%)	11 (84.62%)	2 (15.38%)
7.2. Applies knowledge of new information sources (professional journals, etc.) to write a technical report (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	11 (84.62%)	2 (15.38%)
7.3. An ability to use engineering software to solve problems (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	11 (84.62%)	2 (15.38%)
7.4. An ability to gain new knowledge and apply to the project (apply) *(n = 13)*	0 (0.00%)	0 (0.00%)	11 (84.62%)	2 (15.38%)

7.4. An ability to gain new knowledge and apply to the project (apply) (n = 13)	0 (0.00%)	0 (0.00%)	11 (84.62%)	2 (15.38%)

Student Feedback:

Dr. Nyarko was a joy to have as our advisor and professor and was very supportive , offered a lot of help, and advice during the course of EEGR 490 and 491

Last updated: 10/19/2021 9:10:34 AM

Reflections:

Based on feedback received, will continue with current approach to the class

Last updated: 10/19/2021 9:21:29 AM

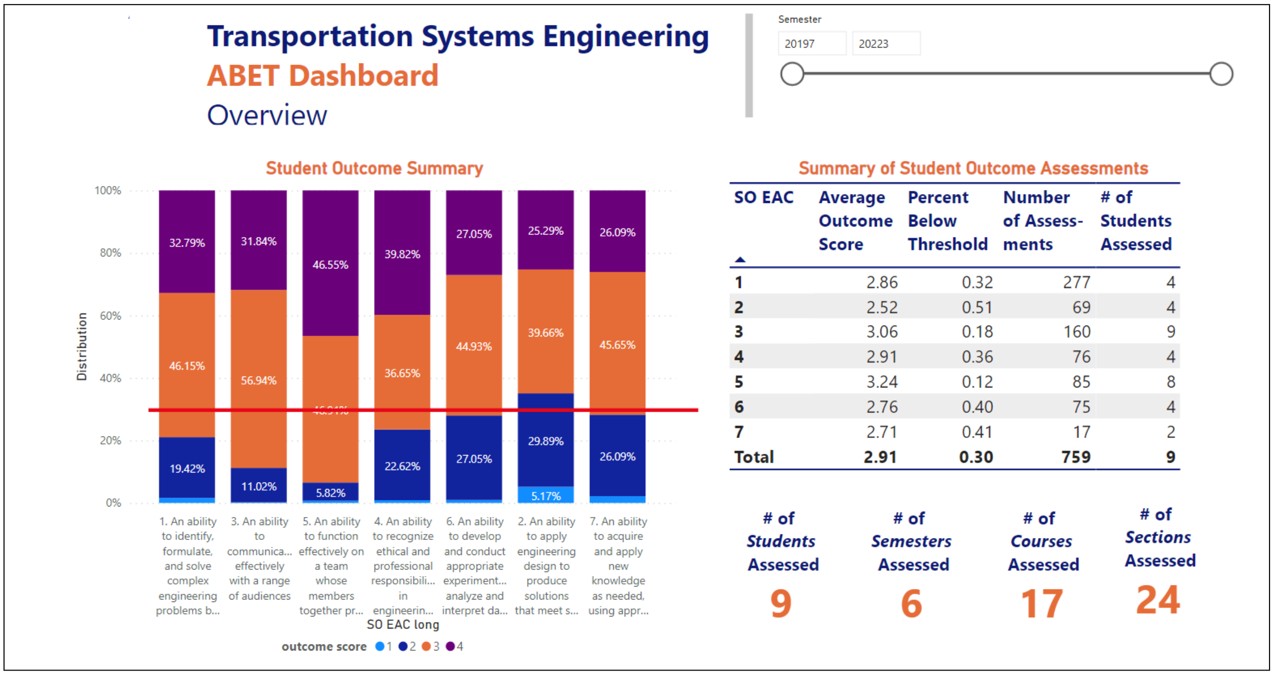
Proposed Action for Course Improvement:

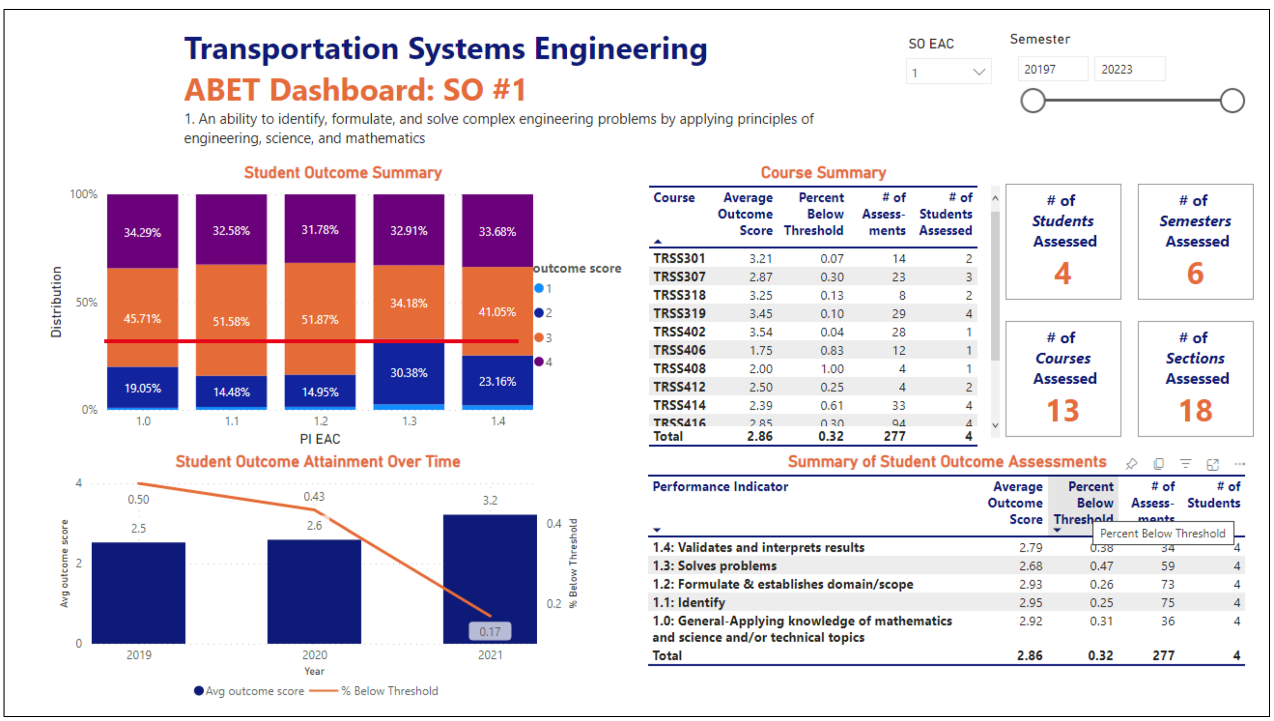
No actions are proposed at the moment

Last updated: 10/19/2021 9:21:42 AM

Figure 8: Faculty Course Assessment Report from SearchLight

Canvas Dashboard Pilot Using PowerBI



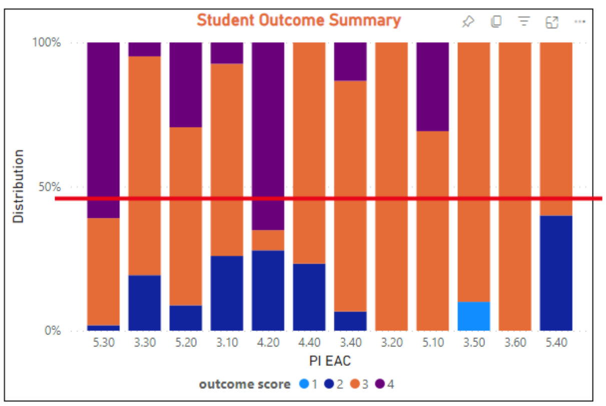


Transportation Systems Engineering

ABET Dashboard: TRSS410 (20207)

Course: TRSS410

Semester: All



Summary of Student Outcome Assessments

outcome score	1.00		2.00		3.00		4.00		Total	
PI EAC	#	%	#	%	#	%	#	%	#	%
3.10			7	35.00%	12	60.00%	1	5.00%	**20**	**100.00%**
3.20					6	100.00%			**6**	**100.00%**
3.30			8	26.67%	21	70.00%	1	3.33%	**30**	**100.00%**
3.40			1	10.00%	8	80.00%	1	10.00%	**10**	**100.00%**
3.50	1	25.00%			3	75.00%			**4**	**100.00%**
3.60					2	100.00%			**2**	**100.00%**
4.20			6	42.86%	1	7.14%	7	50.00%	**14**	**100.00%**
4.40			5	31.25%	11	68.75%			**16**	**100.00%**
5.10					3	75.00%	1	25.00%	**4**	**100.00%**
5.20			3	13.64%	14	63.64%	5	22.73%	**22**	**100.00%**
5.30			1	3.33%	13	43.33%	16	53.33%	**30**	**100.00%**
5.40			1	50.00%	1	50.00%			**2**	**100.00%**
Total	**1**	**0.63%**	**32**	**20.00%**	**95**	**59.38%**	**32**	**20.00%**	**160**	**100.00%**

Figure 9: Canvas Outcome Summary Dashboard