

**SEMINOLE STATE COLLEGE  
ASSOCIATE IN SCIENCE IN PRE-ENGINEERING (214)**

**Degree Program Evaluation for 2020-21**

*The information required to complete this annual evaluation process mirrors the information required by OSRHE Policy on Academic Program Review. Specifically, it covers the following Vitality of the Program items: (1) Program Objectives and Goals, (2) Quality Indicators, (3) Minimum Productivity Indicators, and (4) Other Quantitative Measures (for additional information see OSRHE Policy 3.7.5.B.1-4).*

**1. Program Objectives and Goals**

**Associate in Science in Pre-Engineering Degree Program Outcomes**

**Outcomes for Transfer Degree Programs**

- Outcome 1: Demonstrate successful articulation of Seminole State College transfer degree programs to state and professional institutions of higher learning granting professional and baccalaureate degrees in Oklahoma.
- Outcome 2: Demonstrate successful academic achievement by Seminole State College transfer degree students at primary receiving state baccalaureate institutions of higher learning in Oklahoma. Successful academic achievement is defined as the maintenance of satisfactory academic progress toward degree completion as determined by the receiving institution.

**Outcomes Specific to Associate in Science in Pre-Engineering**

- Outcome 3: Define and explain fundamental concepts, principles, and theories of engineering.
- Outcome 4: Gather scientific information through experiments to interpret and express the results of experiments.
- Outcome 5: Demonstrate problem-solving skills foundational to understanding of engineering concepts.
- Outcome 6: Demonstrate preparation for continued pursuit of engineering education leading to a baccalaureate degree in an engineering area.

## 2. Quality Indicators

### Combined Course Embedded Assessment Results for 2020-21 for Major Field Courses in Degree Program

General Education Outcomes	Pre-Test % Correct	Post-Test % Correct	Difference
General Education Outcome 1	24%	71%	48%
General Education Outcome 2	22%	64%	44%
General Education Outcome 3	19%	67%	48%
General Education Outcome 4	19%	85%	65%
Specific Outcomes for AS Pre-Engineering	Pre-Test % Correct	Post-Test % Correct	Difference
Degree Program Outcome 3	22%	65%	44%
Degree Program Outcome 4	17%	67%	50%
Degree Program Outcome 5	24%	67%	44%
Degree Program Outcome 6	26%	74%	48%

### Other Data Indicating Quality Relevant to Degree Program Major Field

#### Degree Program Enrollment by Ethnicity

Academic Year	Ethnicity	Summer 2020		Fall 2020		Spring 2021	
2020-21	Total Students	5	100%	12	100%	100%	100%
	Black	1	20%	0	0%	0%	0%
	Indian	3	60%	0	0%	0%	0%
	Asian	0	0%	0	0%	0%	0%
	Hispanic	0	0%	0	0%	0%	0%
	Hawaiian/Pacific Islander	0	0%	0	0%	0%	0%
	White	1	20%	12	100%	100%	100%
	Undeclared	0	0%	0	0%	0%	0%

#### Degree Program Enrollment by Gender

Academic Year	Gender	Summer 2020	Fall 2020	Spring 2021
2020-21	Male	4	10	8
	Female	1	2	3

#### Student Feedback on Instruction:

The fact that the College's average on the rated-scale questions was 4.6 on a 5.0 scale is taken as an indicator of overall positive feedback from students on classroom instruction. These averages fall close to the midpoint between the answers "usually applies" and "almost always applies" and were offered as positive affirmations to fifteen different statements regarding course effectiveness and classroom instruction. The average for questions pertaining only to online courses was 4.6 and is taken as evidence that student satisfaction in online courses very closely mirrors that in classes overall.

#### Graduate Exit Survey:

In the statistics related to the overall satisfaction with SSC, 75% of students indicated satisfaction with the SSC education experience by giving a rating of excellent or above average. The students indicated they would again choose SSC if starting over at 79%. In general, the responses to the survey increased

this year with good insight given for areas to improve. Students listed professors consistently as one of the greatest strength at SSC. Students cited class size, staff, and affordability as other strengths.

ETS Proficiency Profile Test: Mathematics portion of the ETS test was 0.8 points above the national mean for the current year. The Critical Thinking portion of the ETS test was 1.1 points above the national mean for the current year.

The next Faculty Survey on Student Engagement will be conducted in January 2022.

Other Quality Indicators: none

### 3. Minimum Productivity Indicators

#### Productivity Indicators

Academic Year	Semester	Declared Majors	Graduates
2020-21	Summer 2020	5	1
	Fall 2020	12	0
	Spring 2021	11	4

Does the degree program meet the minimum OSRHE standards for productivity this year?

Majors Enrolled (25 per year): **Yes/No**

Degree Conferred (5 per year): **Yes/No**

Comments/Analysis:

The requirements for the Pre-Engineering degree changed to better prepare students for transfer to the four-year institution programs across the state and our recruitment and advising on campus have been working from incorrect information when advising students. This has contributed to a low number of students graduating at this time. If our declared major numbers stay the course, then we project that Seminole State College will graduate 8-9 students in Spring 2022 (which coincides with the national retention rate of 25% for engineering programs).

#### 4. Other Quantitative Measures

##### Number of Sections Taught and Enrollment for Each Course in Major Field of Degree Program

Prefix	Number	Major Field Course Title	Number of Sections	Total Students	Ave. Class Size	Total Credit Hours Generated
ENGR	1113	Introduction to Engineering	1	21	21	63
MATH	2215	Calculus and Analytic Geometry I	3	20	7	100
MATH	2424	Calculus and Analytic Geometry II	3	20	7	80
MATH	2434	Calculus and Analytic Geometry III	1	9	9	36
MATH	2533	Differential Equations	0	0	0	0
PHYS	2114	General Physics I	1	30	30	120
PHYS	2211	Calculus Based Physics I	1	10	10	10
PHYS	2224	General Physics II	1	16	16	64
PHYS	2231	Calculus Based Physics II	1	8	8	8

##### Credit Hours Generated in Major Field Courses of Degree Program By Level (from table above)

Academic Year	1000 Level Credit Hours Generated	2000 Level Credit Hours Generated
2020-21	63	418

Note: Credit Hours Generated columns represent the student credit hours generated by all the major field courses of the degree program for the given academic year. The hours do not represent the number of student credit hours generated only by those students declaring this major.

##### Direct Instructional Costs

Academic Year	Instructional Costs*	Costs Shown By Division or Program?
2020-21	\$906,012.00	Science Division

\*When cost data are not available by degree program, use total division budget for instructional costs for each degree program.

##### Credit Hours Generated by Courses in Major Field of Degree Program That Are Part of General Education Requirements in Other Degree Programs

Major Field Course Information			
Prefix	Number	Title	Credit Hours Generated
NA	NA	NA	

##### Faculty Teaching Major Field Courses in Degree Program

Name	Teaching Area	Highest Degree	Institution
Bryant, Melissa	Mathematics	M.Ed.	East Central University

Streight, Ricky	Mathematics	Ph D.	University of Oklahoma
Tollett, Jarrod	Mathematics / Science/ Engineering	M.Ed.	East Central University
Carpenter, Emily	Mathematics	M.Ed.	Oklahoma State University
Michael Schnell	Computer Science	MS Information	Florida Institute of Technology
Senaratne, Nilmini	Chemistry	Ph.D.	University of Kansas
<b>Current Full-Time Faculty From Other Divisions Teaching Major Courses in Degree Program (Instructors with ** beside their name teach only zero-level classes)</b>			
<b>Current Adjunct Faculty Teaching Major Courses in Degree Program (Instructors with ** beside their name teach only zero-level classes)</b>			

**5. Recommendations and Other Relevant Items:** Describe recommendations, new developments or initiatives pertaining to degree program.

Expand program by 5 students. Recent grant funds from the Title III grant have allowed the campus to modernize the Physics classroom and begin to update the physics equipment for the Physics I and Physics II labs. This equipment will allow a greater focus on hands on learning and this action should produce a more fundamentally grounded graduate for transfer.