

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

Degree Program Evaluation for 2016-17

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 and 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 Fall 2016 and Spring 2017
for Major Field Courses in Degree Program**

General Education Outcomes	Pre-Test % Correct	Post-Test % Correct	Difference
General Education Outcome 1	8%	71%	63%
General Education Outcome 2	6%	65%	59%
General Education Outcome 3	8%	71%	63%
General Education Outcome 4	5%	72%	67%
Specific Outcomes for AS Pre-Engineering	Pre-Test % Correct	Post-Test % Correct	Difference
Degree Program Outcome 3	9%	67%	58%
Degree Program Outcome 4	8%	70%	62%
Degree Program Outcome 5	6%	65%	59%
Degree Program Outcome 6	6%	67%	60%

Other Data Indicating Quality Relevant to Degree Program Major Field

Degree Program Enrollment by Ethnicity

Academic Year	Ethnicity	Summer 2016		Fall 2016		Spring 2017	
2016-17	Total Students	10	100%	39	100%	37	100%
	Black	0	0%	0	0%	1	3%
	Indian	2	20%	9	23%	8	22%
	Asian	0	0%	0	0%	0	0%
	Hispanic	0	0%	1	3%	0	0%
	Hawaiian/Pacific Islander	0	0%	0	0%	0	0%
	White	8	80%	28	71%	26	70%
	Undeclared	0	10%	1	3%	2	5%

Degree Program Enrollment by Gender

Academic Year	Gender	Summer 2016	Fall 2016	Spring 2017
2016-17	Male	9	37	34
	Female	1	2	3

Student Feedback on Instruction:

The average response scores from the Student Feedback on Instruction ranged from 4.24 to 4.73 for the rated scale questions. Therefore, all of the averaged responses fell between “usually applies” and “almost always applies” with those responses describing desired attributes or behaviors

Graduate Exit Survey:

Overall, students rated their academic experience favorably with 82.7% of the students rating “quality of teaching in your major field of study” as excellent or above average. More than 72% of students rated “faculty concern for student well-being” and “faculty commitment to student success and learning” as excellent or above average.

Collegiate Assessment of Academic Proficiency (CAAP) Test:
 The Science portion of the CAAP test was 0.1 of a point below the national mean.
 The Mathematics portion of the CAAP test was 0.1 of a point below the national mean for the current year.

Faculty Survey on Student Engagement:
 Faculty reported that 90.2% of the time assignments were turned in on time.

3. Minimum Productivity Indicators

Productivity Indicators

Academic Year	Semester	Declared Majors	Graduates
2016-17	Summer 2016	10	0
	Fall 2016	39	1
	Spring 2017	37	4

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

Majors Enrolled (25 per year): Yes

Degree Conferred (5 per year): Yes

Comments/Analysis:

Many students leave Seminole State College before completion of the two year Pre-Engineering Degree to enroll in a four year engineering degree as our enrollment procedure from the past did not adequately inform Pre-Engineering Degree seeking students of the coursework commitments for transfer. Over the last two years, there has been great efforts to improve training of faculty and staff in advisement and as a result more students are being informed of the degree requirements and transfer coursework necessary to enroll and complete the 4.5 year engineering degree at other state institutions of higher learning. Nationally it is recognized that the fields of engineering have historically shown on average a 25% retention. It should be recognized that our retention and graduation rate for an open enrollment college cannot be held to this same level. With an 89.0% completion rate for SSC students and the former SSC students GPA comparing well with the aggregated student body GPA at the receiving institutions, SSC transfer students seem to be performing well.

Low Productivity Justification:

Many of the classes offered under this degree program are necessary for transfer courses for general education courses.

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
CHEM	1114	Introduction to Chemistry	3	82	27	328
CHEM	1315	General Chemistry I	3	93	31	465
CHEM	1515	General Chemistry II	1	5	5	25
ENGR	1113	Introduction to Engineering	1	18	18	54
MATH	1513	College Algebra	30	520	17	1560
MATH	1613	Plane Trigonometry	2	24	12	72
CS	2013	Programming in C++	1	20	20	60
MATH	2215	Calculus and Analytic Geometry I	2	33	17	495
MATH	2424	Calculus and Analytic Geometry II	2	11	6	44
MATH	2424	Calculus and Analytic Geometry III (not offered this period)	2	15	6	60
MATH	2533	Differential Equations (not offered this period)				
PHYS	2114	General Physics I	1	28	28	112
PHYS	2211	Calculus Based General Physics I	2	14	7	14
PHYS	2224	General Physics II	1	17	17	68
PHYS	2231	Calculus Based General Physics II	1	7	7	7

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
2016-17	2504	860

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?
2016-17	\$463,449.00	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
Carpenter, Emily	Mathematics	M.S.	Oklahoma State University
Goeller, Linda	Mathematics	Ph.D.	Oklahoma State University
Gomez, Lynnette	Mathematics	B.S.	Oklahoma Baptist University
Holtz, Chris	Science	M.S.	University of California, San Diego
Tollett, Jarrod	Science	M.Ed.	East Central University
Current Full-Time Faculty From Other Divisions Teaching Major Courses in Degree Program (Instructors with ** beside their name teach only zero-level classes)			
Chun Fu Cheng	Information Systems	MBA Management Completion 5/2014	Oklahoma City University
Current Adjunct Faculty Teaching Major Courses in Degree Program (Instructors with ** beside their name teach only zero-level classes)			
Qualls, Travis	Mathematics	M.Ed.	East Central University
Troglin, Annette	Mathematics	M.Ed.	East Central University

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

Expand program by 5 students. With plans to build a new degree option in Applied Science for Engineering Technician, the Pre-Engineering Degree option should also see an additional increase as many students will be able to utilize the same courses and work towards a transfer degree option in addition to immediate employment.