SEMINOLE STATE COLLEGE
ASSOCIATE IN SCIENCE FOR PRE-ENGINEERING (214)
Program Review Executive Summary

Date of Review: Fall 2012	**Recommended Date of Next Review:** Fall 2017

The Associate in Science for Pre-engineering Degree Program is central to the Seminole State College mission in the following ways:

Empowers people for academic success by preparing students for a range of Pre-engineering careers and at the same time improve their critical thinking skills necessary for success in all studies. **Empowers people for personal development** by training students to set and achieve educational goals by developing responsibility, organizational skills, and academic skills. The program places students in appropriate developmental or college level courses, allowing students the opportunity to progress through the curriculum to achieve success. **Empowers people for life-long learning** by providing a variety of courses that vary in content and have the purpose of broadening a student's appreciation of and creating a desire for continued learning once they have completed their education.

Program Objectives and Goals: Outcomes Specific to Associate in Science for Pre-engineering (214)

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.

Quality Indicators Such As:	
Student Learning Outcomes **Effective Teaching** **Effective Learning Environments** **Capacity to Meet Needs of Constituencies**	- Instructors assess Student Learning Outcomes at the classroom level with a pre-test and post-test. The fact that all courses in the Mathematics and Science areas show improvement verifies that student learning takes place. In 2010, the average growth rate was 51.4% for all fourteen of the Major Field courses. The overall ratio of post-test scores to pre-test scores was 3.1 to 1 (76.0% to 24.7%). - SSC provides faculty with the opportunity for professional development through funding opportunities and onsite technology training. The college employs faculty based on Higher Learning Commission guidelines and teaching ability. - SSC is committed to creating effective learning environments with technology, increased tutoring and other academic support, and the development of a variety of delivery methods such as blended or hybrid courses. - The Pre-engineering Degree Program is meeting the needs of the service area even though the demand for the program is low with approximately 27 declared majors and 6 graduates per year.
Productivity for Most Recent 5 Years	**Number of Degrees:** 31 **Number of Majors:** 135

Other Quantitative Measures: • Number of Courses for Major • Student Credit Hour in Major • Direct Instructional Costs • Roster of faculty members including the number of FTE faculty in the specialized courses within the curriculum	**Number of Courses for Major:** 14 **Student Credit Hours in Major:** 5,304 for review period (Includes non-major enrollees) **Direct Instructional Costs:** $2,561,494 for review period (Total for four science degree programs) **Roster of Pre-engineering Faculty:**

Roster of Pre-engineering Faculty:

Current Full-Time Mathematics/Science/Engineering Faculty			
Name	**Teaching Area**	**Highest Degree**	**Institution**
Goeller, Linda	Mathematics	Ph.D.	Oklahoma State University
Laule, Gerhard	Chemistry	M.S.	University of Arkansas
Tollett, Jarrod	Physical Science	M Ed.	East Central University
Troglin, Annette	Mathematics	M. Ed.	East Central University

Duplication and Demand	Degree program does not duplicate programs in the service area. Demand is low.
Effective Use of Resources	The MSE Division maximizes productivity using the available physical, technical, financial and personnel resources.
Strengths and Weaknesses	*Strengths:* Faculty members are experienced, motivated, qualified, and caring instructors that work to coordinate course content to insure a proper background for their students. Faculty members are receiving training in the use of new instructional technology and are actively implementing more technology into the classrooms and labs as it becomes available. The size of SSC allows for smaller class sizes and more one on one involvement with the students. *Weaknesses:* Scheduling and offering classes that have lab components are becoming more of a problem due to limited lab space. Support for at-risk students. Basic equipment depreciation.
Recommendations	• Increase efforts to recruit Pre-Engineering majors by encouraging SSC students to choose Pre-Engineering as a major and by recruiting area high school students to choose the major. Continue to use the PIE Academy as a recruiting tool. • Increase student and faculty awareness of the articulation agreements between colleges and universities in the state system. • Implement degree completion initiative that involves degree planning and tracking procedures for students that require students to experience increased, high quality one on one interaction and mentorship with Pre-engineering faculty.