

# Undergraduate Certificate in Engineering Fundamentals

The Engineering Fundamentals certificate program provides a comprehensive introduction to the fundamentals of engineering and engineering-science including topics such as mathematics, physics, computer programming, and graphical design technics that will enable students to pursue a professional career in a STEM-related field. The program will emphasize problem-solving techniques that will help students to develop the necessary skills for success in their chosen profession.

Students interested in pursuing a career in a STEM-related field or those who plan to pursue an undergraduate associate or bachelor's degree in engineering (such as mechanical, electrical, aerospace, etc.) or professional degree in a technical, business, law, or medical field are welcome to apply.

## Program-Specific Criteria

### Admissions Criteria

In addition to meeting the Worldwide Campus admissions requirements, applicants for admission into the Undergraduate Certificate in Engineering Fundamentals must:

- Complete the Math Skills Assessment prior to admission to determine academic preparedness for entry into MATH 241 Calculus I.
- Current high school students and recent graduates under the age of 20 must meet established admissions requirements and demonstrate a 3.0 high school CGPA, with coursework that reflects 4 years of college preparatory mathematics and 2 years of college preparatory science, including a laboratory science.
- Transfer applicants must meet established admissions requirements and demonstrate a 2.5 cumulative grade point average (CGPA); transfer credit deemed equivalent to demonstrate academic preparedness for immediate entry into MATH 241 Calculus I, will be considered for admission into the program. Skills Assessment scores will be used for advising purposes if Math transfer credit demonstrates academic preparedness for admission into the program.

Students who fail to satisfy the guidelines for full admission may be considered for conditional admission under circumstances determined by the Admissions Office OR may be considered for admission into an alternate program. A written petition for admission, current resume and other supporting documentation may be requested for consideration of admission. Exceptions will be reviewed on a case by case basis.

Current Worldwide students requesting a change of program to the Undergraduate Certificate in Engineering Fundamentals must demonstrate successful completion of MATH 241 and have an ERAU GPA of a 2.5 or above. Students may then work with their campus advisor to determine eligibility to add or change to the Undergraduate Certificate in Engineering Fundamentals. Exceptions will be reviewed on a case by case basis.

## Engineering Fundamentals

### Certificate

MATH 242	Calculus and Analytical Geometry II	4
PHYS 250	Physics III for Engineers	3
PHYS 253	Physics Laboratory for Engineers	2
ESCI 201	Statics	3
ENGR 101	Introduction to Engineering	3

ENGR 115	Introduction to Computing for Engineers	3
ENGR 120	Graphical Communications	3
<b>Total Credits</b>		<b>21</b>

Estimated Cost of Attendance

### Students will:

- Acquire skills commonly found in the engineering profession, such as problem-solving, knowledge of the principles of structural engineering and mechanics, engineering design using CAD, algorithm design and software development, implementation of code, and testing.
- Demonstrate the knowledge of professional and ethical responsibilities.