

Engineering Transfer to Oregon Tech

Holland code family: Doers

About the Program – Year One

Engineering is in great demand which results in high wages and very low unemployment. One reason for this shortage of qualified engineers is that an engineering degree requires more work than most other degrees. Starting at Rogue Community College with small class sizes and instructors whose primary emphasis is teaching rather than research is a great way to begin this pathway. The Associate of Science – Engineering is for students interested in transferring to a bachelor's degree program at Oregon Tech. This program is pending RCC Board of Education approval at catalog print time. For updated information, see a science program advisor.

Entry Requirements

Students are required to complete the Placement Process to determine skill level and readiness in math, reading, and writing. As part of their training program, students must begin with the courses within their skill level as determined by the results of their placement assessment. In addition, students may also be required to enroll in classes that would increase their employability and success.

Advanced Standing

Coursework from accredited colleges and universities will be accepted in accordance with college registration policies and with a Science Department recommendation. In order to ensure that coursework is current, program courses over 10 years old must be reviewed and approved by the appropriate program coordinator before being accepted toward core requirements. Students must complete coursework in their major at a "C" or better level before proceeding to advanced coursework. Engineering requires advanced coursework, and may take additional time for an associate's degree. The preparatory transfer course-work, which can be taken at RCC, may take up to three years.

Graduation Requirements

Students are required to complete all courses in this program with a grade of "C" or better to receive their degrees. Certain required courses are graded on a pass/no pass basis only. A grade of "P" for these courses indicates a student earned the equivalent of a "C" or better grade.

What skills will you learn?

Visit <http://go.roguecc.edu/department/program-learning-outcomes>.

What are the employment opportunities?

Visit <http://www.roguecc.edu/GainfulEmployment>.

Prerequisites ¹

Course No.	Course Title	Credits
MTH112	Elementary Functions or higher level math placement test score	0-4
RD90	College Reading or designated placement test score	0-4
WR115	Introduction to Expository Writing or higher level composition placement test score	0-3
_____	Social Science elective ² (e.g. ECON201, ECON202, SOC213)	0-12

Total Prerequisite Credits (not included in program credits) 0-23

First Year Required Courses

Course No.	Course Title	Credits
First Term		
ENGR101	Engineering Orientation I: Careers, Skills and Computer Tools	2
MTH251	Calculus I (Differential) w/Lab	5
PH211	General Physics (Calculus Based) I w/Lab and Recitation	5
WR121	English Composition I	4
		16
Second Term		
ENGR102	Engineering Orientation II: Careers, Skills, and Computer Tools	2
MTH252	Calculus II (Integral) w/Lab	5
PH212	General Physics (Calculus Based) II w/Lab and Recitation	5
WR122	English Composition II	4
		16



Third Term

ENGR103	Engineering Orientation III: Careers, Skills, and Computer Tools	2
MTH253	Calculus III w/Lab (CS120, or other elective to be determined)	5
MTH261	Linear Algebra w/Lab	5
PH213	General Physics (Calculus Based) III w/Lab and Recitation	5
		17

Fourth Term (Summer)

MTH254	Vector Calculus w/Lab	5
MTH256	Differential Equations w/Lab	5
		10

Total First Year Credits 59

Students in engineering majors are asked to work closely with Science Department faculty to ensure success.

At the completion of the introductory engineering sequence (ENGR101, 102, 103), Calculus I and II (MTH251, 252) and the calculus-based physics sequence (PH211, 212, 213), students are required to pick a transfer school and emphasis from one of the following options:

- Civil Engineering
- Electrical/Renewable Energy Engineering
- Mechanical Engineering

Program Specific Learning Outcomes

Civil Engineering Program Learning Outcomes

- Draw a complete and correct free body diagram of an object.
- Write and solve applicable equations of equilibrium for statically determinate objects.
- Apply statics concepts to trusses, frames and machines, and calculation of internal forces.
- Determine the centroid and moment of inertia for an arbitrary area.
- Be prepared for transfer to Oregon Tech as a civil engineering student.

Electrical/Renewable Engineering Program Learning Outcomes

- Define voltage, current, power and energy, and how they relate with each other.
- Use voltage division and current division appropriately in solving simple circuits.
- Define voltage, current, power and energy for both DC and AC circuits, and how they relate with each other via sinusoids and phasors.
- Be prepared for transfer to Oregon Tech as an electrical/renewable energy engineering student.

Mechanical Engineering Program Learning Outcomes

- Identify and apply kinematic and dynamic equations for a particle in Cartesian, cylindrical and spherical coordinates.
- Apply Newton's equations to solve problems involving rigid bodies in plane motion.

- Apply methods of work-energy and impulse-momentum to describe rigid body motion.
- Apply understanding of statics, calculus, physics, chemistry, and probability/statistics to analyze and design simple mechanical systems with engineering materials.
- Recognize types of failure modes, material property influence, and use of factors of safety or allowable stresses/strains on design.
- Be prepared for transfer to Oregon Tech as a mechanical engineering student.

¹ Prerequisite courses may have additional requirements.

² Required for graduation.

For more information contact the Science Department:

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 website <http://go.rogue.edu/department/science>
 TTY Oregon Telecom Relay Service, 711

This advising guide is for advising purposes only. Please see current college catalog for additional information on specific college policies and graduation requirements.

RCC is an open institution and does not discriminate. For RCC's non-discrimination policy and a full list of regulatory specific contact persons visit the following webpage: www.rogucecc.edu/nondiscrimination.

