

**Engineering Transfer to Oregon Tech – Mechanical Associate of Science Degree**

Holland code family: Doers

www.roguecc.edu/Counseling/HollandCodes/test

**About the Program**

The Associate of Science – Mechanical Engineering is for students interested in transferring to a bachelor's degree program at Oregon Tech.

**Program Learning Outcomes**

The curriculum in RCC courses is derived from a set of identified learning outcomes that are relevant to the discipline. Overall program learning outcomes for the Mechanical Engineering – Transfer to Oregon Tech are:

Identify the broad context of engineering problems, including describing the problem conditions, identifying possible contributing factors, and generating alternative solution strategies.

Identify the fundamental elements of engineering design including associated safety, quality, schedule and cost considerations.

Employ mathematics, science, and computing techniques in a systematic and rigorous manner to support the study and solution of engineering problems.

Conduct and document laboratory experiments in the sciences and engineering, effectively communicating determined quantitative relationships using both graphs and equations.

Exhibit good teamwork skills and serve as effective members of laboratory and project teams.

Articulate and justify technical solutions to an audience through oral, written and graphical communication.

Communicate the importance of professional and ethical responsibilities of engineers and be aware of codes and other sources of guidance for professionally ethical decision making.

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 to transfer to Oregon Tech as a Mechanical Engineering student.

**Entry Requirements**

Students in engineering majors are asked to work closely with Dusty Rittenbach, Science Department Chair, jrittenbach@roguecc.edu, to ensure success in academic planning.

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 through the Placement Process. 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.

**Prerequisites <sup>1</sup>**

Course No.	Course Title	Credits
MTH112	Elementary Functions or higher level math placement test score	0-4
WR115	Introduction to Expository Writing or higher level composition placement test score	0-3
	Approved social science elective <sup>2</sup>	0-8

**Total Prerequisite Credits** **0-15**

**First Year Required Courses**

Course No.	Course Title	Credits
<b>First Term</b>		
ENGR101	Engineering Orientation I: Careers, Skills and Computer Tools	2
MTH251	Calculus I (Differential) with lab	5
PH211	General Physics (Calculus Based) I with 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) with lab	5
PH212	General Physics (Calculus Based) II with lab and recitation	5
WR122	English Composition II	4
		16

**Third Term**

ENGR103	Engineering Orientation III: Careers, Skills, and Computer Tools	2
MTH261	Linear Algebra with lab	5
PH213	General Physics (Calculus Based) III with lab and recitation	5
		12

**Fourth Term (Summer)**

MTH254	Vector Calculus with lab	5
MTH256	Differential Equations with lab	5
		10

**Total First Year Credits** **54**

## Second Year Required Courses

Course No.	Course Title	Credits
<b>Fifth Term</b>		
CHEM221	General Chemistry I with lab and Recitation	5
ECON201	Principles of Microeconomics	4
SP111	Fundamentals of Public Speaking	4
		13
<b>Sixth Term</b>		
CHEM222	General Chemistry II with lab and Recitation	5
ENGR201	Electrical Fundamentals with lab	3
ENGR211	Statics	3
		11
<b>Seventh Term</b>		
ENGR202	Electrical Fundamentals II with lab	3
ENGR212	Dynamics	3
ENGR213	Strength of Materials	3
WR227	Technical Writing	4
—	Approved humanities elective <sup>3</sup>	3-4
		16-17
<b>Total Second Year Credits</b>		<b>40-41</b>
<b>Total Credits</b>		<b>94-95</b>

<sup>1</sup> Prerequisite courses may have additional requirements.

### **2 Approved Social Science Electives**

Select courses from the following RCC prefixes: ANTH, ECON, GEOG (EXCEPT GEOG100), HST, PS, PSY, SOC or others designated as Social Science Electives by the Oregon Tech Registrar's Office.

### **3 Approved Humanities Electives**

(Complete 3-4 credits. A maximum of three performance or studio-based credits indicated by an asterisk are allowed.)

Course No.	Course Title	Credits
ART115,116*	Basic Design (Composition/Color Theory)	3-3
ART131,132,133*	Introduction to Drawing	3-3-3
ART204,205,206	History of Art I, II, III	4-4-4
ART234,235,236*	Figure Drawing I, II, III	3-3-3
ART237,238,239*	Illustration	3-3-3
ART281,282,283*	Painting I, II, III	3-3-3
ENG104,105,106	Introduction to Literature	4-4-4
ENG107,108,109	World Literature I, II, III	4-4-4
ENG201,202	Shakespeare I, II	4-4
ENG204,205,206	Survey of English Literature I, II, III	4-4-4
ENG253,254,255	Survey of American Literature I, II, III	4-4-4
ENG257	African American Literature	4
ENG260	Introduction to Women Writers	4
ENG275	The Bible as Literature	4
HUM101,102,103	Introduction to Humanities I, II, III	4-4-4
HUM215,216,217,218,219	Native American Arts and Cultures	4-4-4-4-4
MUS101	Music Fundamentals	3
MUS105	Music Appreciation	3
MUS108	Music in World Cultures	4
MUS111,112,113	Music Theory and Aural Skills I, II, III	4-4-4
MUS201	Introduction to Western Music	4
MUS205	History of Jazz	3
MUS206	Introduction to Rock Music	3
MUS208	Film Music	3
MUS211,212,213	Music Theory and Aural Skills IV, V, VI	4-4-4
MUS261,262,263	History of Western Music I, II, III	4-4-4
MUS264,265,266	History of Rock I, II, III	3-3-3
PHL101,102,103	Philosophical Problems/Ethics/Critical Reasoning	4-4-4
REL201	World Religions	4
REL243	Nature, Religion and Ecology	4
SPAN201,202,203	Second Year Spanish I, II, III	4-4-4

For more information contact the Science Department:

Grants Pass or Medford. . . . . 541-245-7527  
 Toll free in Oregon . . . . . 800.411.6508, Ext. 7527  
 email . . . . . jrittenbach@roguecc.edu  
 website . . . . . <http://go.rogue.edu/departments/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.roguecc.edu/nondiscrimination](http://www.roguecc.edu/nondiscrimination).

