

# EGR/ME

ORAL ROBERTS UNIVERSITY

DEGREE PLAN SHEET 2012-2013

TOTAL HOURS REQUIRED

136

Engineering, Computer Science, Physics & Mathematics Department

Hours in Major

41

DEGREE: Bachelor of Science in Engineering

Hours in Concentration

40

MAJOR: ENGINEERING--Mechanical Concentration (EGR/ME)

Hours in General Education

56

Name \_\_\_\_\_  
 ID \_\_\_\_\_ Date \_\_\_\_\_  
 Telephone \_\_\_\_\_ Email \_\_\_\_\_  
 Advisor \_\_\_\_\_

SEMESTER TAKEN	COURSE CODE	COURSE TITLE	CREDIT HOURS	SEMESTER TAKEN	COURSE CODE	COURSE TITLE	CREDIT HOURS
<b>FRESHMAN Semester 1</b>				<b>FRESHMAN Semester 2</b>			
_____	COMP 102 *	Reading/Writing in Liberal Arts	3	_____	HUM 103	Christian Worldview & Culture	3
_____	THE 103	Spirit-Empowered Living@	3	_____	COM 101	Oral Communication	3
_____	MAT 201 **	Calculus I	4	_____	MAT 202	Calculus II	4
_____	CHE 111	General Chemistry I	3	_____	PHY 111 **	Physics I	3
_____	CHE 111	General Chemistry I Lab	1	_____	PHY 111 **	Physics I Lab	1
_____	EGR 100	Engineering/Physics Seminar	0	_____	EGR 100	Engineering /Physics Seminar	0
_____	EGR 101	Introduction to Engineering	2	_____	EGR 140	Engineering Graphics	2
_____	GEN 099	Whole Person Assessment	0	_____	HPE 002	Health Fitness II	1
_____	PRF 070	Swimming Proficiency	0				17
_____	HPE 001	Health Fitness I	1				
			17				

<b>SOPHOMORE Semester 3</b>				<b>SOPHOMORE Semester 4</b>			
_____	BLIT 110	Survey of Old Testament Literature	3	_____	BLIT 120	Survey of New Testament Literature	3
_____	MAT 321	Calculus Functions of Several Variables	4	_____	MAT 211	Differential Equations	3
_____	PHY 112	Physics II	3	_____	EGR 100	Engineering/Physics Seminar	0
_____	PHY 112	Physics II Lab	1	_____	EGR 210	Network Analysis I	3
_____	EGR 100	Engineering/Physics Seminar	0	_____	EGR 210	Network Analysis I Lab	1
_____	EGR 221	Mechanics I: Statics	3	_____	EGR 222	Mechanics II: Dynamics	3
_____	EGR 252	Engineering Computational Methods	3	_____	EGR 231	Heat and Thermodynamics	3
_____	HPE ^	HPE Activity	0.5	_____	HPE ^	HPE Activity	0.5
			17.5				16.5

## SUMMER

\_\_\_\_\_ HUM +++ Humanities Options 3

<b>JUNIOR Semester 5</b>				<b>JUNIOR Semester 6</b>			
_____	HUM +++	Humanities Options	3	_____	COMP 303	Critical Reading and Writing	3
_____	ME 321	Mechanics of Materials	3	_____	HUM +++	Humanities Options	3
_____	ME 331	Applied Thermodynamics	3	_____	MAT	Math Elective (Upper Division)	3
_____	EGR 100	Engineering/Physics Seminar	0	_____	ME 381	Principles of Design	3
_____	MAT 325	Probability & Statistics	3	_____	ME 433	Heat Transfer	3
_____	HPE ^	HPE Activity	0.5	_____	ME 444	Experimental Methods	3
			15.5	_____	EGR 100	Engineering/Physics Seminar	0
				_____	HPE ^	HPE Activity	0.5
							18.5

<b>SENIOR Semester 7</b>				<b>SENIOR Semester 8</b>			
_____	HIS 101	American History	3	_____	GOV 101	American Government	3
_____	EGR 330	Control Systems	3	_____	++	Technical Elective	3
_____	ME 447	Finite Element Method	3	_____	ME 441	Fluid Mechanics	3
_____	ME 461	Manufacturing Processes	3	_____	EGR 100	Engineering/Physics Seminar	0
_____	EGR 100	Engineering/Physics Seminar	0	_____	++	Technical Elective	3
_____	EGR 461	Engineering Management & Economy	2	_____	EGR 499	Senior Design & Research II	2
_____	EGR 498	Senior Design and Research I	2	_____	HPE ^	HPE Activity	0.5
_____	HPE ^	HPE Activity	0.5				14.5
			16.5				

## KEY

- \* If the student is required to enroll in COMP 101 then COMP 102 must be taken before Semester 6 and one of the other General Education courses will be taken by correspondence or summer school.
- \*\* Students who need Precalculus in Semester I should take Calculus I in the spring and Physics I in the summer.
- + BUS 201 Principles of Economics I (recommended), PSY 201 Principles of Psychology, SOC 101 Introduction in Sociology, FIN 244 Personal Financial Planning , SOC 201 Marriage and Family, MUS 208 Music in World Cultures, SWK 202 Introduction to Social Work, or SOC 323 Child and Family in the Social Context.
- ++ EGR 321 Design of Control Systems, ME 371 Theory of Machines and Mechanisms, or ME 450 Special Topics
- +++ See list of Humanities (HUM) options on the back.
- ^ HPE courses are 1 credit hour each, but students can petition to take it for .5 credits. Course work remains the same.
- @ THE 103 is taught only in the "Fall" semester.

**B. S. in Engineering                      2012-2013**  
**Mechanical Engineering Concentration (EGR/ME)**

**General Education**

Whole Person Assessment (GEN 099)	0
English (COMP 102, 303)	6
Oral Communication (COM 101)	3

Humanities (HUM 103 plus three of the following: HUM 222*, 233*, 244*, 250, 255, 260, 270, 333*, COMP 101) *At least one course must be chosen from courses marked with asterisks.	12
Biblical Literature (BLIT 110, 120)	6
Theology (THE 103)	3
Chemistry (CHE 111 lecture and lab)	4
Physics (PHY 111 lecture and lab)	4
Mathematics (MAT 201)	4
American History (HIS 101)	3
American Government (GOV 101)	3
Social Sciences (BUS 201 recommended)	3
Health, Physical Education, and Recreation (Health Fitness I and II, swimming course or proficiency and six electives.)**	5

**General Education Total**

**56**

**Cognate**

MAT 202	Calculus II	4
MAT 211	Differential Equations	3
MAT 321	Calculus of Functions of Several variables	4
MAT	Elective (upper division)	3
MAT 325	Probability and Statistics	3

**Cognate Total**

**17**

**Major**

EGR 100	Engineering /Physics Seminar	0
EGR 101	Introduction to Engineering	2
EGR 140	Engineering Graphics	2
EGR 210	Network Analysis I (lecture & lab)	4
EGR 221	Mechanics I: Statics	3
EGR 231	Heat and Thermodynamics	3
EGR 461	Engineering Management and Economy	2
EGR 498	Senior Design and Research I	2
EGR 499	Senior Design and Research II	2
PHY 112	Physics II (lecture & lab)	4
EGR 252	Engineering Computational Methods	3

**Major Total**

**27**

**Mechanical Engineering Concentration**

EGR 222	Mechanics II: Dynamics	3
EGR 330	Control Systems	3
ME 321	Mechanics of Materials	3
ME 331	Applied Thermodynamics	3
ME 381	Principles of Design	3
ME 433	Heat Transfer	3
ME 441	Fluid Mechanics	3
ME 444	Experimental Methods	3
ME 447	Finite Element Method	3
ME 461	Manufacturing Processes	3

**Choice of two of the following:**

EGR 331	Design of Control Systems	6
ME 371	Machines and Mechanisms	
ME 450	Special Topics	

**Mechanical Engineering Concentration Total**

**36**

**DEGREE TOTAL**

**136**

\*All students must pass the seminar course each semester they are enrolled in this major.

\*\*After passing HPE 001 and 002, students must take and pass 1 activity course per full-time semester at ORU.