

**Oakland University Recommended Program Guide**  
**Bachelor of Science in Engineering with a major in Mechanical Engineering**  
**Effective Date: September 2011**

**GENERAL EDUCATION REQUIREMENTS<sup>1</sup>**

Students must complete 40 credits of general education, excluding U.S. Diversity, Capstone and Writing Intensive in the Major. Each category must be fulfilled by completing one course of at least 3 or more credits. Courses used to meet Writing, Formal Reasoning, Arts, Foreign Language and Culture, Global Perspective, Literature, Natural Science and Technology, Social Science, Western Civilization, and Knowledge Applications may not be double counted with each other. U.S. Diversity, Writing Intensive in General Education, Writing Intensive in the Major, and a Capstone may be met by double counting approved general education courses. Please see the Oakland University catalog for further information.

Oakland University	Macomb Community College
<b>Writing Foundations</b> WRT 160	<b>Writing Foundations</b> ENGL 1190 or 1220
<b>Formal Reasoning</b> <b>Satisfied by Major</b>	<b>Formal Reasoning</b> <b>Satisfied by Major</b>
<b>Arts</b> AH 100, 101, 104; <b>CIN 150</b> ; DAN 173, <b>175</b> ; MUS 100, 131, <b>200</b> , 205, 225, 236, 334, <b>336, 338</b> ; SA 100; THA 100, 301, 302	<b>Arts</b> ARTT 1610, 2610, 2620; HIST 2340; HUMN 1210, <b>1270</b> , 1300, <b>1460</b> ; MUSC 1030, 2710, 2720
<b>Foreign Language and Culture</b> ARB, CHE, FRH, GRM, HBR, IT, JPN, LTN, SPN 114, 115, 214, 215; ALS 176; LIN 181	<b>Foreign Language and Culture</b> ARAB, CHIN, FREN, GRMN, ITAL, SPAN 1260, 1270, 2360, 2370
<b>Global Perspective</b> AN 102, 200; GEO 200; IS 200, 210, 220, 230, 240, 250, 260, 270; MGT 110; MUS 236; PS 114, 131; REL 101, 102, 150; WRT 360	<b>Global Perspective</b> ANTH 1000; GEOG 2000; HIST 2650; HUMN 1700; INTL 2000, 2010, 2300, 2500, 2700; POLS 1600
<b>Literature</b> ENG 100, 105, 111, <b>112</b> , 224, 241, 250, 303, 305, 306, 312; LIT 100, 181, 182; REL 311	<b>Literature</b> ENGL 1730, 2510, 2520, 2610, 2710, 2720, 2730, 2800, 2810, 2850; HUMN 1750
<b>Natural Science and Technology</b> <b>Satisfied by Major</b>	<b>Natural Science and Technology</b> <b>Satisfied by Major</b>
<b>Social Science</b> AN 101, 102, 300 COM 287; ECN 150, 200, 210; <b>HS 302</b> ; <b>PS 100</b> , 114, 131, <b>312</b> ; PSY 100, 130; <b>SOC 100</b> , 206; <b>WGS 200</b>	<b>Social Science</b> ANTH 1000; ECON 1160, 1170; <b>POLS 1000</b> , 1600; PSYC 1010; <b>SOCY 1010</b>
<b>Western Civilization</b> AN 300; COM 375; HST 101, 102, <b>114, 115, 292</b> ; MGT 235; PHL 101, 103; <b>PS 377</b>	<b>Western Civilization</b> <del>HIST 1500, 1600, 1700, 2100, 2200, 2360; PHIL 2010, 2100</del>
<b>U.S. Diversity</b> ALS 374; AMS 300; AN 331, 374, 381, 385; CIN 150; COM 330, 385; DAN 175; ECN 315; EED 420; ENG 112, 341, 342; HRD 367; HS 302; HST 114, 115, 292, 318, 319, 322, 361, 362; MUS 200, 336, 338; NRS 280, 302, 304, 450; PS 100, 312; SOC 100, 331; WHP 370; WGS 200, 300, 322, 361, 362, 382, 385; WRT 330, 364	<b>U.S. Diversity</b> Choose one of the following from a group above:  HIST 2100, 2200; HUMN 1270, 1460; POLS 1000; SOCY 1010, 2550
<b>Knowledge Applications</b> <b>Satisfied by Major</b>	<b>Knowledge Applications</b> <b>Satisfied by Major</b>
<b>Capstone Course</b> <b>Satisfied by Major</b>	<b>Capstone Course</b> <b>Satisfied by Major</b>
<b>Writing Intensive in the Major</b> <b>Satisfied by Major</b>	<b>Writing Intensive in the Major</b> <b>Satisfied by Major</b>

**Courses that are in bold print and underlined meet their associated general education category and the U.S Diversity requirement.**

**MECHANICAL ENGINEERING MAJOR REQUIREMENTS**

Oakland University			Macomb Community College		
Course	Credit	Course Title	Course	Credit	Course Title
APM 255	4	Intro to Differential Equations with Matrix Algebra	MATH 2000 and MATH 2770	7	Introduction to Linear Algebra and Differential Equations
CHM 157	4	General Chemistry I	CHEM 1170	4	General Chemistry 1
ECN 200	4	Principles of Macroeconomics	ECON 1160	3	Principles of Economics I
EGR 120	4	Engineering Graphics & CAD	ATAP 2010 <del>or</del>	2	<del>Drafting – 2D CAD with MasterCAM or</del>
			ATAP 2350 <del>or</del>	2	<del>3D MasterCAM Die/Mold CNC Machining</del>
			ATAP 2360 <del>or</del>	2	<del>or</del>
			ATAP 2380 <del>or</del>	2	<del>3D Cimatron CAD/CAM Die/Mold</del>
			PRDE 1001 and 1002	4	<del>Machining or Rapid Prototyping &amp; Reverse</del>
			<del>or</del>	4	<del>Engineering or</del>
			PRDE 1003 <del>or</del>	3	<del>CATIA V5 Engineers &amp; Designers Level 1,</del>
			PRDE 1400 <del>or</del>	3	<del>2 or</del>
			PRDE 1410 <del>or</del>	3	<del>CATIA V5 Basics or</del>
			PRDE 1450 <del>or</del>	3	<del>SolidWorks &amp; 3D Parametric Modeling or</del>
			PRDE 1475 <del>or</del>	4	<del>SolidWorks-Components and Assemblies</del>
			PRDE 1510 <del>or</del>	3	<del>or</del>
			PRDE 1610 <del>or</del>	3	<del>AutoCAD-Detailing and Assemblies or</del>
PRDE 2500 <del>or</del>	3	<del>Overview of Pro/Engineer or</del>			
PRDE 2600 <del>or</del>	3	<del>Unigraphics: Assemblies &amp; Drafting or</del>			
PRDE 2610	3	<del>CATIA V5: Assemblies &amp; Drafting or</del>			
					<del>Unigraphics: Hybrid Modeling or</del>
					<del>CATIA V5: Intro Generative Shape Design</del>
					<del>or</del>
					<del>CATIA V5: Intro to Surfacing</del>

<sup>1</sup> Students who transfer with the MACRAO agreement satisfy the university's general education requirements with the exception of a writing intensive course in the major and a capstone course. MACRAO transfer students must also either transfer in a course that is acceptable for the knowledge application requirement or take a course at Oakland University.

EGR 141	4	Computer Problem Solving in Engineering & Computer Science	ITCS 2220	3	Advanced Visual Basic
MTH 154	4	Calculus I	MATH 1760	4	Analytic Geometry and Calculus 1
MTH 155	4	Calculus II	MATH 1770	4	Analytic Geometry and Calculus 2
MTH 254	4	Multivariable Calculus	MATH 2760	4	Analytic Geometry and Calculus 3
PHY 151	4	Introductory Physics I	PHYS 2220	5	Analytical Physics 1
PHY 152	4	Introductory Physics II	PHYS 2230	5	Analytical Physics 2
Approved Science Electives					
BIO 111 <u>or</u> CHM 158	4	Biology <u>or</u> General Chemistry II	BIOL 1000 <u>or</u> CHEM 1180	4	General Biology 1 <u>or</u> General Chemistry 2
<b>The following courses must be completed at Oakland University</b>					
<b>Course</b>	<b>Credit</b>	<b>Course Title</b>	<b>Course</b>	<b>Credit</b>	<b>Course Title</b>
EGR 240	4	Intro to Electrical & Computer Engineering	EGR 250	4	Intro to Thermal Engineering
EGR 260	4	Intro to Industrial & Systems Engineering	EGR 280	4	Design and Analysis Electromechanical Systems
ME 308	3	Computer-Aided Design	ME 322	4	Engineering Mechanics
ME 331	4	Intro to Fluid and Thermal Energy Transport	ME 361	4	Mechanics of Materials
ME 372	4	Properties of Materials	ME 421	4	Vibrations and Controls
ME 486	4	Mechanical Systems Design	ME 456	4	Fluid and Thermal Systems Design
ME 492 <u>or</u> ME 490	4	Senior mechanical engineering Design Project <u>or</u> Senior Project (requires project approval)			
<b>Mechanical Engineering Professional Electives</b>					
Mechanical engineering students must complete at least three additional 400 or 500 -level courses with an ME designation or other approved 400-level engineering courses with an ECE, ISE designation. Students may also select sequences of courses in a specialized option. Please consult the Oakland University course catalog or an academic adviser for options.					

**Notes:**

- Students may transfer in one-half of the 128 credits required for the baccalaureate degree.
- Students who complete 3 credit courses at Macomb Community College may be required to enroll in additional course credits to reach the required minimums for Oakland University.
- Major requirements will be based on the current catalog at the time of admission to Oakland University.
- Students should consult a Macomb Community College adviser to determine the requirements for the Associate of Baccalaureate Studies degree.
- For further questions, please contact the Office of Admissions (248) 370-3360 or the School of Engineering and Computer Science at (248) 370-2200.

Maximum Macomb Community College credits = 64

Minimum Oakland University Credits = 64

Minimum Credits for the BSE in Mechanical Engineering = 128