



**WRIGHT STATE
UNIVERSITY**

B.S. in Mechanical Engineering

Program Guide: 2008-2009

Student's Name _____ UID# _____

First Year	Qtr	Grade	(50 credit hours)	Pre-requisites	Fa	Wi	Sp	Su
CHM 121	3.0	___	___	General Chemistry I.....(CHM 101, MTH 127, CHM 125c)	X	a	•	a
CHM 125	2.0	___	___	General Chemistry Laboratory I.....(CHM 101, MTH 127, CHM 121c)	X	a	•	a
EGR 101	5.0	wi	___	Intro Mathematics for Engineering Applications(Note 9 or EGR 100/199 and Note 12)	X	a	a	a
EGR 190 d	4.0	wi	___	Engineering Fundamentals.....(EGR 190L(2)c, Note 6, Note 8)	X	a	a	•
ME 102 d	3.0	___	___	Engineering Programming With Matlab (EGR 101)	a	X	a	•
ENG 101	4.0	___	___	Composition I.....	X	a	a	a
ENG 102	4.0	___	___	Composition II.....(ENG 101)	a	X	a	a
ME 199 d	3.0	___	___	Engineering Design: Intro (Note 8)	a	a	X	•
ME 202	4.0	___	___	Mechanical Drawing, Solid Modeling, and Design.....	a	a	X	a
MTH 229	5.0	___	___	Calculus I.....(MTH 131 or level 7 on math placement test)	a	X	a	a
PHY 240	4.0	___	___	General Physics I.....(EGR 101 or MTH 229, PHY 200c, PHY 240Rc)	a	•	X	•
PHY 200	1.0	___	___	General Physics I Laboratory.....(PHY 240c)	a	•	X	•
GEN ED___	4.0	___	___	Choose one from Area II.....(Note 10)	a	a	X	a
GEN ED___	4.0	___	___	Choose one from Area III.....(Note 10)	a	X	a	a
Credit Hours Per Quarter in the Model Program					18	16	16	0

Second Year	Qtr	Grade	(51 credit hours)	Pre-requisites	Fa	Wi	Sp	Su
ME 212 d	4.0	___	___	Statics.....(EGR 101 or MTH 231, PHY 240)	X	a	a	a
ME 213 d	4.0	___	___	Dynamics.....(ME 102, ME 212 and Note 12)	a	X	a	a
ME 313 d	4.0	___	___	Strength of Materials.....(ME 102, ME 212 and Note 12)	a	a	X	•
ME 315	4.0	___	___	Thermodynamics I.....(EGR 101 or MTH 231, PHY 240)	a	a	X	a
MTH 230	5.0	___	___	Calculus II.....(MTH 229)	X	a	a	a
MTH 231	5.0	___	___	Calculus III.....(MTH 230)	a	X	a	a
MTH 235	5.0	___	___	Differential Equations with Matrix Algebra.....(MTH 231)	a	a	X	a
EE 301 d	4.0	___	___	Circuit Analysis I.....(EGR 101 or MTH 230, PHY 242, EE302c)	a	a	X	a
EE 302 d	1.0	___	___	Circuit Analysis I Laboratory.....(EE 301c)	a	a	X	a
PHY 242	4.0	___	___	General Physics II.....(MTH 230c, PHY 240, PHY 202c, PHY 242Rc)	X	a	•	•
PHY 202	1.0	___	___	General Physics II Laboratory.....(PHY 242c)	X	a	•	•
PHY 244	5.0	___	___	General Physics III.....(MTH 230, PHY 240, PHY 204c, PHY 244Rc)	•	X	a	•
PHY 204	1.0	wi	___	General Physics III Laboratory.....(PHY 244c)	•	X	a	•
GEN ED___	4.0	___	___	Choose one from Area II.....(Note 10)	X	a	a	a
Credit Hours Per Quarter in the Model Program					18	15	18	0

Third Year	Qtr	Grade	(52 credit hours)	Pre-requisites	Fa	Wi	Sp	Su
MTH 232	5.0	___	___	Calculus IV.....(MTH 231)	X	a	a	a
ME 314	4.0	___	___	Experimental Measurements & Instr.....(EE 301, ME 199, ME 213, ME 314Lc, MTH 235)	X	a	a	•
ME 316 d	4.0	___	___	Thermodynamics II.....(ME 315 and Note 12)	X	a	•	•
ME 317 d	4.0	___	___	Fluid Dynamics.....(ME 213, ME 315 and Note 12)	•	X	a	•
ME 318 d	4.0	___	___	Heat Transfer.....(ME 317, MTH 235)	•	a	X	•
ME 360	4.0	___	___	System Dynamics.....(EE 301, ME 213, ME 313, ME 317c, MTH 235)	•	X	a	•
ME 370	4.0	___	___	Materials Engineering Science: Intro.....(CHM 121, PHY 244)	X	a	a	•
ME 371 d	3.0	___	___	Structure & Properties of Engineering Materials.....(ME 313, ME 370)	a	X	a	•
ME 412 d	4.0	___	___	Finite Element Analysis.....(ME 313, MTH 235, ME 412Lc)	•	X	•	a
ME 414 d	4.0	___	___	Mechanical Design I.....(ME 313)	a	•	X	•
ME 460 d	4.0	___	___	Mechanical Vibrations.....(ME 360, ME 460Lc)	a	•	X	•
GEN ED___	4.0	___	___	Choose one from Area III.....(Note 10)	a	X	a	a
GEN ED___	4.0	___	___	Choose one from Area IV.....(Note 10)	a	a	X	a
Credit Hours Per Quarter in the Model Program					17	19	16	0

Fourth Year	Qtr	Grade	(48 credit hours)	Pre-requisites	Fa	Wi	Sp	Su
STT 363	3.0	—	—	Engineering Statistics (MTH 232, Note 6)	X	a	a	a
ME 410 d	4.0	—	—	Computational Methods for Mechanical Engineering (ME 318, ME 360)	X	•	a	a
EE 413 d	3.0	—	—	Control Systems I (ME 213, EE 321 or ME 360, EE 414c)	•	a	X	a
EE 414	1.0	—	—	Control Systems I Laboratory (EE 413c)	•	a	X	a
ME 408 d	3.0	—	—	Design Optimization (ME 313, ME 318, ME 360)	a	•	X	•
ME 415 d	4.0	—	—	Mechanical Design II (ME 414)	X	a	•	•
ME 490 d	4.0 wi	—	—	Engineering Design (Department Permission)	X	a	•	•
ME 491 d	4.0 wi	—	—	Engineering Design (ME 490)	•	X	a	•
ME 49_d	2.0	—	—	Senior Lab I (Note 11)	a	X	a	•
ME 49_d	2.0	—	—	Senior Lab II (Note 11)	a	a	X	•
—	3.0	—	—	Technical Elective (Note 7)	a	a	X	a
—	3.0	—	—	Technical Elective (Note 7)	X	a	a	a
—	4.0	—	—	Technical Elective (Note 7)	a	X	a	a
GEN ED	4.0	—	—	Choose one from Area II, III, or IV (Note 10)	a	X	a	a
GEN ED	4.0	—	—	Choose one from Area II, III, or IV (Note 10)	a	a	X	a
Credit Hours Per Quarter in the Model Program					18	14	16	0

TOTAL PROGRAM CREDIT HOURS

201.0

NOTES:

1. **Quarterly advising is mandatory in order to assure timely completion of the program.** Please see a department advisor as soon as possible to ensure enrollment in the proper courses.
2. **In the right hand columns, (X)** denotes the typical schedule for a full-time student, **(a)** denotes "tentatively available", and **(•)** denotes "not available".
3. **The course number in parentheses denotes a prerequisite course.** A number followed by "c", such as (PHY ###c), denotes a co-requisite (taken at the same time).
4. **Courses with "d" designations contain design,** the process of devising a system, component, or process to meet some desired need. The course work provides experience in open-ended problem solving by combining decision making and creative thought with basic and engineering sciences. The design experience is incorporated across a variety of subject areas and increases in amount and complexity.
5. Students admitted or readmitted Fall 1996 or later are subject to **Writing Across the Curriculum (WAC)** regulations. Refer to the university catalog for additional information. WAC courses are indicated by "wi." In addition to ENG 101 and 102, 4 general education courses must be Writing Intensive. These may include the "wi" courses EGR 190 and PHY 204.
6. **Substitutions:** ISE 301 is an allowable substitution for STT 363. ISE 210 is an allowable substitution for EGR 190.
7. **(TE) denotes "Technical Elective," 10 hours minimum,** to be selected from approved list on the Mechanical and Materials Engineering Department web page at <http://www.engineering.wright.edu/mme>. A list of courses approved at the time of this printing is below and is subject to change.
8. Open to Freshman/Sophomore students only. Junior/Senior students replace with additional Technical Elective hours.
9. MPL 5 or MTH 131, Trigonometry.
10. See the Undergraduate Catalog for General Education requirements.
11. For senior lab I and II, two of the following three lab courses must be taken: **Thermal-Fluids Lab ME 495** (Prerequisite ME 314, ME 316 and 318), **Engineering Mechanics Lab ME 496** (Prerequisite ME 313, 314, and 371c), **Materials Lab I ME 497** (Prerequisite ME 370).
12. A grade of **"C" or higher** is required in the following courses: EGR 100/199, ME 212, ME 315 in order to satisfy the designated pre-requisites.

Approved List of Technical Electives (TE)					Fa	Wi	Sp	Su
EE 303 d	3.0	—	—	Circuit Analysis II (EE 301, EE 302, EE 304c)	a	a	a	•
EE 304 d	1.0	—	—	Circuit Analysis II Laboratory (EE 303c)	a	a	a	•
EE 322 d	4.0	—	—	Linear Systems II (EE 321)	a	a	a	a
EE 415 d	3.0	—	—	Control Systems II (EE 413, EE 414, EE 416c)	a	•	a	•
EE 416 d	1.0	—	—	Control Systems II Laboratory (EE 415c)	a	•	a	•
ME 405 d	4.0	—	—	Kinematics and Design of Mechanisms (ME 213)	•	•	a	•
ME 409 d	4.0	—	—	Aerospace Structures (ME 313)	•	•	a	•
ME 417 d	3.0	—	—	Mechanics of Viscous Fluids (ME 317)	•	a	•	•
ME 423 d	4.0	—	—	Energy Conversion (ME 315)	•	•	a	•
ME 424 d	4.0	—	—	Solar Engineering (ME 318)	•	•	a	•
ME 430 d	4.0	—	—	Aeronautics (ME 317)	a	•	•	•
ME 431 d	4.0	—	—	Aerospace Propulsion (ME 317)	a	•	•	•
ME 432 d	4.0	—	—	Flight Control Systems (EE 413)	•	•	a	•
ME 433 d	4.0	—	—	Compressible Fluid Flow (ME 317)	a	•	•	•
ME 434	4.0	—	—	Computational Fluid Dynamics (ME 317)	a	•	•	•
ME 442 d	3.0	—	—	Vehicle Engineering (ME 213)	•	a	a	•
ME 444 d	4.0	—	—	Internal Combustion Engines (MTH 235, ME 316, ME 317)	•	•	•	a
ME 456 d	4.0	—	—	Introduction to Robotics (MTH 235; senior standing; Prof. in FORTRAN, Pascal or C)	a	•	•	a
ME 464 d	4.0	—	—	Mechanical System Modeling and Design (ME 213)	•	•	a	•
ME 470 d	4.0	—	—	Failure Analysis (ME 313, ME 371)	•	a	•	•
ME 474 d	4.0	—	—	Materials Selection for Mechanical Design (ME 313, ME 370)	•	a	•	•
ME 477 d	4.0	—	—	Mechanical Behavior Materials (ME 313, ME 371)	a	•	•	•
ME 486 d	4.0	—	—	Deformation Processing (ME 313, ME 371)	•	•	a	•
ME 487 d	4.0	—	—	Machining (ME 371, ME 487Lc)	a	•	•	•
ME 499	1-4.0	—	—	Special Problems (Department Permission)	a	a	a	a