



**WRIGHT STATE
UNIVERSITY**

B.S. in Mechanical Engineering

Program Guide: 2007-2008

Student's Name _____ UID# _____

First Year	Qtr	Grade	(51 credit hours)	Pre/Co-requisites	Fa	Wi	Sp	Su
CHM 121	5.0	___	___	General Chemistry 1(CHM 125c)	X	a	•	•
CHM 125	0.0	___	___	General Chemistry Laboratory 1.....(CHM 121c)	X	a	•	•
EGR 101	5.0	___	___	Introductory Mathematics for Engineering Applications.....(Note 8, Note 9)	X	a	a	a
EGR 190 d	4.0 wi	___	___	Engineering Fundamentals.....(Note 6, Note 8)	X	a	a	•
EGR 153 d	4.0	___	___	FORTRAN Programming.....(EGR 101 or MTH 229c, Note 6, Note 9)	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)	a	•	X	a
PHY 200	1.0	___	___	General Physics I Laboratory.....(EGR 101 or MTH 229, PHY 240c)	a	•	X	a
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	17	16	0

Second Year	Qtr	Grade	(51 credit hours)	Pre/Co-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.....(EGR 153 OR CEG 220, ME 212)	a	X	a	a
ME 313 d	4.0	___	___	Strength of Materials.....(EGR 153 OR CEG 220, ME 212)	a	a	X	•
ME 315	4.0	___	___	Thermodynamics I.....(EGR 101, 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.....(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 230 or EGR 101, PHY 240, PHY 202c)	X	a	•	a
PHY 202	1.0	___	___	General Physics II Laboratory.....(PHY 242c)	X	a	•	a
PHY 244	5.0	___	___	General Physics III.....(MTH 230 or EGR 101, PHY 242, PHY 204c)	•	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/Co-requisites	Fa	Wi	Sp	Su
MTH 232	5.0	___	___	Calculus IV.....(MTH 231)	X	a	a	a
ME 314	4.0	___	___	Experimental Measurements and Instrumentation.....(EE 301, ME 213, MTH 235)	X	a	a	•
ME 316 d	4.0	___	___	Thermodynamics II.....(ME 315)	X	a	•	•
ME 317 d	4.0	___	___	Fluid Dynamics.....(ME 213, ME 315, EGR 102)	•	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)	•	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)	•	X	•	a
ME 414 d	4.0	___	___	Mechanical Design I.....(ME 313)	a	•	X	•
ME 460 d	4.0	___	___	Mechanical Vibrations.....(ME 360)	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/Co-requisites	Fa	Wi	Sp	Su
STT 363	3.0	___	___	Engineering Statistics (MTH 232, Note 6)	a	X	a	a
CS 316 d	4.0	___	___	Numerical Methods for Digital Computers..... (EGR 153, MTH 231, MTH 235)	X	•	a	a
EE 413 d	3.0	___	___	Control Systems I (ME 213, EE 321 or ME 360, EE 414c)	a	a	X	•
EE 414	1.0	___	___	Control Systems I Laboratory (EE 413c)	a	a	X	•
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 wi	___	___	Senior Lab I (Note 11)	a	X	a	•
ME 49_ d	2.0 wi	___	___	Senior Lab II (Note 11)	a	a	X	•
___	3.0	___	___	Technical Elective..... (Note 7)	a	a	X	a
___	3.0	___	___	Technical Elective..... (Note 7)	a	X	a	a
___	4.0	___	___	Technical Elective..... (Note 7)	X	a	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					16	16	16	0

TOTAL PROGRAM CREDIT HOURS

202.0

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.** Such a number followed by "c", such as (PHY ###c), denotes a co-requisite (taken at the same time) and a number followed by "b", denotes a pre/co-requisite (must be taken before or concurrently).
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:** CEG 220 is an allowable substitution for EGR 153. 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 and MTH 131 or Trigonometry in High School.
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 371b), **Materials Lab I ME 497** (Prerequisite ME 370).

Approved List of Technical Electives (TE)					Fa	Wi	Sp	Su
EE 303 d	3.0	___	___	Circuit Analysis II (EE 301, EE 302)	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)	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 213, ME 315)	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	•	•
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	3.0	___	___	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)	a	•	•	•
ME 499	1-4.0	___	___	Special Problems.....	a	a	a	a