ENGINEERING MANAGEMENT CURRICULUM
MANUFACTURING ENGINEERING TECHNICAL SPECIALTY
2006-2007
130 Total Hours Required for the Degree

(130 hours minimum – depending on selection of thematic sequence)

All required engineering, chemistry, physics, mathematics, statistics, computer science, English, and business courses must be taken for a grade.

English (9 hours) **6.5%**

ENG 111 College Composition
ENG 112 Composition and Literature
ENG 313 Intro to Technical Writing

Mathematics/Statistics & Computer Science (16 hours) **11.5%**

MTH 151 Calculus I
MTH 251 Calculus II
MTH 245 Differential Equations for Engineers
STA 368 Introduction to Statistics

Fine Arts, Humanities, & Social Science (12 hours) **8.6%**

ECO 201 Principles of Microeconomics*
ECO 202 Principles of Macroeconomics*
Miami Plan Fine Arts Elective
COM 135 Public Express/Critical Inquiry

(COM 136 or 231 may be substituted for COM 135 for the major but they do not fulfill the humanities requirement.)

U.S. and World Cultures (6 hours) **4.3%**

Miami Plan World Cultures Elective
Miami Plan U.S. Cultures Elective

Natural Science (18 hours) **13%**

CHM 141,144 College Chemistry and Lab
PHY 181, 182 The Physical World
PHY 183, 184 The Physical World Lab
Miami Plan Biological Science

Thematic Sequence (9 hours) **6.5%**

Liberal Education sequence outside your major, focused around a theme.

Business Core Courses* (18 hours) **13%**

ACC 221 Introduction to Financial Accounting
MGT 291 Organizational Behavior and Theory
MGT 302 Operations Management
MKT 291 Principles of Marketing
MGT Tracks (select one track):

- Materials Management Track
  - MGT 432 Purchasing and Materials Management
  - MKT 431 Logistics Management
- Operations Management Track
  - MGT 451 Operations Planning & Scheduling
  - MGT 453 Productivity Improvement
- Purchasing/Procurement Track
  - MGT 305 Principles of Supply Chain Management
  - MGT 432 Purchasing & Materials Management
- Human Resources Track
  - MGT 303 Human Resources Management
  - MGT 405 Labor Relations & Conflict Management
- Entrepreneurship Track
  - BUS 467 Entrepreneurship: New Ventures
  - MKT 481 Technology, Products, & Ventures

*ECO 201,202 under Social Science are also Business Core

1. Engineering-Science (15 hours) **10.8%**

These courses are fundamental to all ABET accredited engineering programs and disciplines. (There are total of 2.25 hours of design incorporated in courses marked *.)

ECE 205	Electric Circuit Analysis*	3
MME 211	Static Modeling of Mechanical Systems*	3
MME 223	Engineering Materials*	3
MME 312	Mechanics of Materials*	3
MME/PCE 314	Engineering Thermodynamics*	3

2. Manufacturing Engineering Core (32 hours) **23%**

These courses give the student an in-depth study in methods to design and manufacture quality products at a competitive cost. (There are total of 5 hours of design incorporated in courses marked *.)

EAS 101	Computing Engineering & Society	1
EAS 102	Problem Solving & Design	3
MME 143	Engineer Design/Computer Graphics*	3
MME 231	Manufacturing Processes*	3
MME/ECE 303	Computer Aided Experimentation*	4
EGM/MGT 311	Project Management*	3
MME 334	Quality Planning and Control*	3
MME/PCE 341	Engineering Economics	3
MME 434	Advanced Manufacturing*	3
MME 437	Computer-Integrated Mfg Systems*	3
CSA 372	Analysis of Stochastic Systems	3

3. Senior Capstone Engineering Design (4 hrs) **2.9%**

MME/ECE 448, 449 Senior Design Project I, II 2, 2

This is a year-long capstone design experience in which seniors select and complete open-ended projects, many of which involved working with industry.

Engineering Design Threads in Engineering Science, Manufacturing Core, and Senior Capstone. *Design is integrated into the curriculum through five unified threads among the engineering science, manufacturing courses, and capstone courses. Since MME 211 is utilized in two different sequences the total design content in the curriculum is 12 hours.*

T1: MME 143, 211 (1 hr)
T2: MME 223, 231, 334, 434, 437 (3.5 hrs)
T3: MME 211, 312 (1 hrs)
T4: ECE 205, MME/ECE 303 (1.5 hrs)
T5: MME/ECE 448, 449 (4 hrs)

Note: Computing is integrated into the curriculum through:

EAS 102	*MME 341*
ECE 205	*MME 434*
MME 143	*MME 437*
MME/ECE 303	*MME/ECE 448, 449*

SAMPLE CURRICULUM
ENGINEERING MANAGEMENT
MANUFACTURING ENGINEERING TECHNICAL SPECIALTY
2006-07

Please consult your adviser before scheduling classes. Actual course offerings may vary.

Freshman Year

First Semester			*Second Semester*		
EAS 101	Computing, Engineering & Society	1	EAS 102	Problem Solving & Design	3
ENG 111	College Composition (MPF I)	3	ENG 112	Composition and Literature (MPF I)	3
MTH 151	Calculus I (MPF V)	5	MTH 251	Calculus II	4
PHY 181	The Physical World (MPF IVB)	4	PHY 182	The Physical World (MPF IVB)	4
PHY 183	The Physical World Lab (MPF IVB)	1	PHY 184	The Physical World Lab (MPF IVB)	1
Miami Plan U.S. Cultures Course (MPF IIIA)		3	Miami Plan Fine Arts Course (MPF IIA)		3
		17			18

Sophomore Year

First Semester			*Second Semester*		
CHM 141	College Chemistry (MPF IVB)	3	ACC 221	Introduction to Financial Accounting	3
CHM 144	College Chemistry Lab (MPF IVB)	2	ECO 202	Principles of Macroeconomics (MPF IIC)	3
ECO 201	Principles of Microeconomics (MPF IIC)	3	STA 368	Introduction to Statistics	4
MTH 245	Differential Equations for Engineers	3			
	Choose two of the following:			***Choose two of the following:***	
MME 143	Engineering Design & Computer Graphics	3	MME 143	Engineering Design & Computer Graphics	3
MME 211	Static Modeling of Mechanical Systems	3	MME 211	Static Modeling of Mechanical Systems	3
MME 223	Engineering Materials	3	MME 223	Engineering Materials	3
ECE 205	Electric Circuit Analysis	3	ECE 205	Electric Circuit Analysis	3
		17			16

Junior Year

First Semester			*Second Semester*		
MME 312	Mechanics of Materials	3	MME/ECE 303	Computer-Aided Experimentation	4
EGM/MGT 311	Project Management	3	MME 334	Quality Planning & Control	3
ENG 313	Introduction to Technical Writing	3	MME/PCE 341	Engineering Economics	3
MME 231	Manufacturing Processes	3	MGT 291	Organizational Behavior and Theory	3
MGT 302	Operations Management	3	CSA 372	Analysis of Stochastic Systems	3
MKT 291	Principles of Marketing	3			16
		18			

Senior Year

First Semester			*Second Semester*		
COM 135	Public Expression & Critical Inq (MPF IIB)	3	MME 437	Computer-Integrated Manufacturing Sys	3
MME 434	Advanced Manufacturing	3	MME/ECE 449	Senior Design Project (MPC)	2
MME/PCE 314	Engineering Thermodynamics	3	Miami Plan World Cultures Course (MPF IIIB)+		3
MME/ECE 448	Senior Design Project (MPC)	2	Management Track		3
Management Track		3	Miami Plan Biological Science Course (MPF IVA)		3
Miami Plan Thematic Sequence Course (MPT)*		3	Miami Plan Thematic Sequence Course (MPT)*		3
		17			17

+The School of Engineering & Applied Science and its external Advisory Council suggest you consider taking IDS 159, Strength Through Cultural Diversity, to meet the World Cultures (MPF IIIB) requirement.

The Miami Plan for Liberal Education Foundation (MPF) requirement includes 6 hours of English Composition (ENG 111-112 fulfills this requirement); 12 hours in Fine Arts, Humanities, and Social Science with a minimum of 3 hours in each (COM 135 fulfills 3 hours of the humanities requirement; ECO 201, 202 fulfills 6 hours of the social science requirement); 6 hours in U.S. and World Cultures; 9 hours of Natural Science, including one laboratory course with a minimum of 3 hours in Biological Science and 3 hours in Physical Science (PHY 181-182, 183-184 and CHM 141-144 more than fulfill the Physical Science requirement; however, a biological science course is still required); 3 hours of Mathematics, Formal Reasoning or Technology (MTH 151 fulfill this requirement). At least one of these foundation courses must provide a historical perspective (H). The actual order in which you take these courses is up to you. The outline above is just one sample of how the courses might be arranged. You must also complete 12 hours of Focus: Advanced Liberal Learning courses, including 9 hours in an approved Thematic Sequence (MPT) and a 3 hour Senior Capstone Experience (MPC) (MME/ECE 448/449 fulfills this capstone requirement).

This sample curriculum lists 6 hours of the 9-hour thematic sequence requirement. It is assumed that the first 3 hours are utilized as a Miami Plan foundation requirement. Selection of some thematic sequences may reduce overall number of hours required from that shown above. Minimum of 128 hours is required for degree completion.