

**ENGINEERING MANAGEMENT CURRICULUM
MANUFACTURING ENGINEERING TECHNICAL SPECIALTY
2009-2010**

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%	1. Engineering-Science (15 hours)	10.8%
ENG 111 College Composition		These courses are fundamental to all ABET accredited engineering programs and disciplines. (There is design incorporated in courses marked *.)	
ENG 112 Composition and Literature		ECE 205 Electric Circuit Analysis*	
ENG 313 Intro to Technical Writing		MME 211 Static Modeling of Mechanical Systems*	
		MME 223 Engineering Materials*	
		MME 312 Mechanics of Materials*	
		MME/PCE 314 Engineering Thermodynamics*	
Mathematics/Statistics & Computer Science (16 hours)	11.5%	2. Manufacturing Engineering Core (32 hours)	23%
MTH 151 Calculus I		These courses give the student an in-depth study in methods to design and manufacture quality products at a competitive cost. (There is design incorporated in courses marked *.)	
MTH 251 Calculus II		EAS 101 Computing Engineering & Society	
MTH 245 Differential Equations for Engineers		EAS 102 Problem Solving & Design*	
STA 368 Introduction to Statistics		MME 213 Computational Methods in Engineering*	
		MME 231 Manufacturing Processes*	
		MME/ECE 303 Computer Aided Experimentation*	
		EGM/MGT 311 Project Management	
		MME 334 Quality Planning and Control*	
		MME/PCE 341 Engineering Economics	
		MME 434 Advanced Manufacturing*	
		MME 437 Computer-Integrated Mfg Systems*	
		CSA 372 Analysis of Stochastic Systems	
Fine Arts, Humanities, & Social Science (12 hours)	8.6%	3. Senior Capstone Engineering Design (4 hrs)	2.9%
ECO 201 Principles of Microeconomics*		MME/ECE 448, 449 Senior Design Project I, II	
ECO 202 Principles of Macroeconomics*		This is a year-long capstone design experience in which seniors select and complete open-ended projects, many of which involved working with industry.	
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 Intro to Operations & Supply Chain Mgt			
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			
MIS 303 Enterprise Systems			
MGT 432 Purchasing & Materials Management			
Human Resources Track			
MGT 303 Human Resources Management			
MGT 405 Labor Relations & Conflict Management			
Entrepreneurship Track			
ESP 467 Entrepreneurship: New Ventures			
ESP 481 Technology, Products, & Ventures			

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

Note: Computing is integrated into the curriculum through:

EAS 102	MME 341
ECE 205	MME 434
MME 213	MME 437
MME/ECE 303	MME/ECE 448, 449

**SAMPLE CURRICULUM
ENGINEERING MANAGEMENT
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2009-10**

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

Freshman Year

<u>First Semester</u>			<u>Second Semester</u>		
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

<u>First Semester</u>			<u>Second Semester</u>		
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:

MME 213	Computational Methods in Engineering	3
MME 211	Static Modeling of Mechanical Systems	3
MME 223	Engineering Materials	3
ECE 205	Electric Circuit Analysis	3
		17

Choose two of the following:

MME 213	Computational Methods in Engineering	3
MME 211	Static Modeling of Mechanical Systems	3
MME 223	Engineering Materials	3
ECE 205	Electric Circuit Analysis	3
		16

Junior Year

<u>First Semester</u>			<u>Second Semester</u>		
MME 231	Manufacturing Processes	3	MME 334	Quality Planning & Control	3

Any of the following courses may be taken in either semester – you should be sure and review the prerequisites to insure that you stay on track to graduate in your preferred time frame.

CSA 372	Analysis of Stochastic Systems	3	MKT 291	Principles of Marketing	3
EGM/MGT 311	Project Management	3	MME/ECE 303	Computer-Aided Experimentation	4
ENG 313	Introduction to Technical Writing	3	MME 312	Mechanics of Materials	3
MGT 291	Organizational Behavior and Theory	3	MME/PCE 341	Engineering Economics	3
MGT 302	Operations Management	3			16-18
		16-18			

Senior Year

<u>First Semester</u>			<u>Second Semester</u>		
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 fulfills 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 130 hours is required for degree completion.