

MaDE Degree Worksheet

For Students Following Catalog Year 2007-08 Requirements

Course	Course Name	Prerequisites	Notes
Mathematics Requirement (4 credits)			
Math 220	Differential Calculus – Univariate	---	
Math 224	Integral Calculus – Univariate	Math 220	
Math 230	Differential Calculus – Multivariate	Math 224	
Math 234	Integral Calculus – Multivariate	Math 230	
Engineering Analysis and Computer Proficiency (4 credits)			
Gen Eng 205-1	EA 1 – Linear Algebra and Matlab	---	EECS 110 or 101
Gen Eng 205-2	EA 2 – Statics and Dynamics	Gen Eng 205-1	Civ Eng 212
Gen Eng 205-3	EA 3 – System Dynamics	Gen Eng 205-2	Phys 135-1/Math 219
Gen Eng 205-4	EA 4 – Differential Equations	Gen Eng 205-3	Math 221 or ES APPM 253
Basic Sciences (4 credits)			
Physics 135-2	General Physics	Gen Eng 205-3 <i>or</i> Physics 135-1	
Physics 135-3	General Chemistry	Physics 135-2	
Chem 101	General Inorganic Chemistry		Chem 171 & 172 can substitute for 101-103; Chem 171 can sub. for Chem 101 & 102 with approval of WCAS Dean
Chem 102	General Physical Chemistry	Chem 101	
Design and Communications (3 credits)			
IDEA 106-1	EDC	---	Eng. Design
IDEA 106-2	EDC	IDEA 106-1	English
GEN CMN 102 or 103	Public Speaking /Analysis & Perf of Lit		
Basic Engineering (5 credits)			
IEMS 326	Economics for Engineering I	Math 234	
Mat Sci 201	Principles of the Properties of Materials	Chem 102	
Civ Eng 216	Mechanics of Materials I		
EECS 202 or EECS 203	Intro to Electrical Engineering/ Intro to Computer Engineering		
5th Basic Eng.			
Social Science-Humanities (7 credits)			
		<i>Plan A: Many Different Interests (3-2-2)</i> 3 courses in same category (FAL, HSV, SBS) 2 course minimum in any category 3 course maximum at 100-level except if FAL	
		<i>Plan B: Specific Area of Interest (5-2)</i> 5 courses related thematically 5 course maximum in any category (FAL, HSV, SBS)	
Unrestricted Electives (5 credits)			
		No credit allowed for Physics 130, even by AP credit.	

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Course	Course Name	Prerequisites	Notes
Major Program Core (10 credits)			
IEMS 201 or IEMS 303	Introduction to Statistics Statistics I	Not open to IE degree students IEMS 202	Fall/Spring Winter/Spring
IEMS 310	Operations Research		Winter
IEMS 305 or IEMS 307	Statistical Methods for Quality Imprvmnt Quality Imprvmnt by Experimental Design	IEMS 303 or 201 IEMS 303 or 201	Winter Fall
IDEA 344	Manufacturing Engineering Design	Mech Eng 340-1 or consent of instructor	Spring
IEMS 382	Production Planning and Scheduling	IEMS 201 or 202 and IEMS 310 or 313	Fall
Mat Sci 318	Materials Selection (formerly 317)	Mat Sci 201	Winter
Mech Eng 240	Intro to Mechanical Design & Manufacturing	Mat Sci 201 and Concurrent registration in Civil Eng 216 or Mech Eng 262	Spring
Mech Eng 340-1	Computer-Integrated Mfg: Mfg Processes	Mech Eng 240	Fall
Mech Eng 340-2 or Mech Eng 340-3	Computer-Integrated Mfg: CAD/CAM	Mech Eng 340-1; 262 or Civil Eng 216	Winter Spring
IDEA 308 or Mech. Eng. 315	Human Centered Product Design, or Theory of Machines – Design of Elements	IDEA 106-1,2 and Soph./Jun./Sen. ME 240 and CIV ENG 216	Spring Spring
Senior Design Project (2 credits)			
IDEA 398	Interdisciplinary Design Project	Senior standing	Winter/Spring
*IDEA 298, IEMS 391-1, or Mech Eng 398	Industrial Engineering Design Project; Engineering Design		Fall/Winter (298)
*or a design course approved by the MaDE curriculum committee by petition. IDEA 298/398 is recommended as a sequence.			
Major Program Technical Electives (4 credits) See the MaDE Coordinator for the list of pre-approved courses.			