

**2007-2008 Catalog Pre-Requisite Structure Industrial Engineering Option**

<b>Lower Division Courses</b>		
<b>COURSE NUMBER</b>	<b>Title</b>	<b>Pre Requisite</b>
CHEM 1601 (or 1605)	Basic Chemistry for the Health Sciences	
CS 1160	Intro to Computer Science and Programming	Math 1300 or equivalent
ECON 2301	Principles of Microeconomics	
ENGR 1010	Introduction to Engineering	
ENGR 1420	Engineering Graphics	
ENGR 2010	Electric Circuit Theory	Phys 1002 Co-requisite
ENGR 2060	Materials Science	Chem 1601 or 1605 and Math 1304
ENGR 2070	Fundamentals of Manufacturing	Engr 1010 and 2060
MATH 1304	Calculus I	Math 1300 or Dept. Permission
MATH 1305	Calculus II	Math 1304
MATH 2304	Calculus III	Math 1305
PHYS 1001	Physics I	Math 1304 Pre- or Co-req
PHYS 1002	Physics II	Math 1305 Pre- or Co-req & Phys 1001
PHYS 1003	Physics III	Math 2304 Pre- or Co-req & Phys 1002
PSYC 1005 (or one of 1000, 1001, 2004, or 2009)	General Psychology for Healthier Living	
<b>Upper Division Core Courses</b>		
ENGR 3020	Work Design and Measurement	Engr 2070
ENGR 3101	Statics and Dynamics	Phys 1003
ENGR 3140	Engineering Economy	Econ 2301, Math 1304
ENGR 3190	Human Factors Engineering	Psyc 1000; Stat/Engr 3601 or Stat 1000
ENGR 3841	Operations Research I	Math 2304
ENGR 4100	Production Planning and Control	Engr 2070, 3841; Stat/Engr 3601
ENGR 4200	Systems Simulation	Cs 1160, Engr 3601 & co-requisite Engr 3841
ENGR 4280	Design & Mgmt of Human Work Systems	Engr 3020, 3190
ENGR 4300	Quality Engineering	Engr 2070, Stat/Engr 3601
ENGR 4350	Reliability Engineering	Engr 3841 and 4300
ENGR 4400	Manufacturing Systems Engineering	Engr 3841; 4100 or Dept. Approval
ENGR 4430	Facilities Planning and Design	Engr 3020, 3841
ENGR 4440	Computer Integrated Manufacturing	Engr 2070 and 3140
ENGR 4610	Senior Design I	Senior standing, pre or co-requisite any three of ENGR 4100, 4200, 4300, 4430, and Departmental approval.
ENGR 4620	Senior Design II	Engr 4610
MATH 3331	Differential Equations	Math 2304
STAT/ENGR 3601	Stat & Probability for Sci & Engr I	Math 1305
STAT/ENGR 3602	Stat & Probability for Sci & Engr II	Stat/Engr 3601 or Stat 3502
STAT/ENGR 4603	Operations Research II	Math 3401 or Stat/Engr 3601
<b>ELECTIVES: 12 units from below</b>		
<i>Select four (4) units from the following</i>		
BIOL 3020	Genetics, Evolution, & Humanity	Biol 1001, 1002 or equivalent
BIOL 4020	Contemporary Human Biology	
MATH 2101	Elements of Linear Algebra	Math 1305 or 1820
MATH 3750	Numerical Analysis	Cs 1160, Math 2101 and 2304
<i>Select eight (8) units from the following (or other 3000 and 4000 level courses with department approval)</i>		
CIS/ENGR 3281	Systems Analysis and Design	CIS 3270 or any programming language approved by the instructor
ENGR 3090	Industrial Costs & Control	Engr 2070
ENGR 3898	Co-Op Education	At least 2.5 GPA, Junior or Senior Standing, and Dept Approval
ENGR 4090	Economic Decision Making	Engr 3140, Stat/Engr 3601
ENGR 4180	Product-Process Design	Engr 2070, 3140
ENGR 4330	Advanced Work Measurement	Engr 3020, Cs 1160, Stat 3601
ENGR 4900	Independent Study	Instructor approval
ENGR 4990	Special Topics	Instructor approval
MATH/ENGR 4841	Topics In Optimization	Math 3841
MGMT/ENGR 3110	Applications of Decision Making	Mgmt 3100 or instructor permission
MGMT/ENGR 3600	Theories of Management	
PHYS/ENGR 3280	Electronics & Semi Conductor Manufacturing	Phys 1003