2015-2016 Catalogue

ENGINEERING MANAGEMENT B.S.EM.

All students must meet the University Requirements .

The curriculum leading to the degree of Bachelor of Science in Engineering Management is offered in cooperation with the School of Business Administration. Engineering management is a broad discipline concerned with the art and science of planning, organizing, directing, and controlling activities that have technical components. Designing, producing, selling, and servicing products in the marketplace require managers with both the ability to apply engineering principles and the skills to manage technical projects and people. The curriculum is designed to combine a basic education in an engineering discipline with the study of management concepts and techniques. The curriculum also includes the study of economics, along with coursework in other social science and/or humanities fields. Candidates for this degree must earn a minimum of 123 credits.

PLAN OF STUDY

The Engineering Management major offers three concentrations:

Civil and Environmental Engineering Concentration

Electrical Engineering Concentration

Mechanical Engineering Concentration

CIVIL AND ENVIRONMENTAL ENGINEERING CONCENTRATION

First Year		Credits
	Fall	Spring
CHEM 031 General Chemistry 1[1]	4	
EC 011 Principles of Macroeconomics	3	
ENGR 002 Graphical Communication	2	
ENGS 001 Written Expression	3	
MATH 021 Calculus I[1]	4	
CE 003 Intro to Civil & Envir Engr		2
CS 020 Programming for Engineers[1]		3
EC 012 Principles of Microeconomics		3
MATH 022 Calculus II[1]		4
PHYS 030 Physics Problem Solving I (Optional)		0-1
PHYS 031 Physics for Engineers I[1]		4
Year Total:	16	16-17

Sophomore		Credits
	Fall	Spring
BSAD 060 Financial Accounting	3	
CE 001 Statics	3	
CE 010 Geomatics	4	
MATH 121 Calculus III	4	
MATH 122 Applied Linear Algebra	3	
BSAD 061 Managerial Accounting		3
CE 132 SU: Environmental Systems		3
MATH 271 Adv Engineering Mathematics		3
STAT 143 Statistics for Engineering or STAT 211 Statistical Methods I		3
Gen Ed Elective[2]		3
Year Total:	17	15

Junior		Credits
	Fall	Spring
BSAD 180 Managerial Finance	3	
CE 100 Mechanics of Materials	3	
CE 133 Transportation Systems	3	
CE 134 Sustainable Eng. Economics	3	
CE 160 Hydraulics	3	
CE 162 Hydraulics Lab	2	
BSAD 120 Leadership & Org Behavior		3
BSAD 141 Info,Technology & Bus Systems		3
BSAD 173 Operations Management		3
CE 151 SU: Water & Wastewater Engr		3
CE 170 Structural Analysis		3
Year Total:	17	15

Senior		Credits
	Fall	Spring
EMGT 185 Senior Project	3	
STAT 224 Stats for Quality&Productivity	3	
Choose two CE Concentration Electives[3]	6	
Gen Ed Elective[2]	3	3

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BSAD 270 Quant Anyl for Managerial Dec		3
Choose 2 EMGT Electives[4]		6
Year Total:	15	12
Total Credits in Sequence:		**123-124**

1 Pre-Engineering Technical (PET) requirement: PET courses must be completed with C- or better by the third semester of enrollment in order to continue in engineering coursework.

2 General Education: Nine credits of approved Gen Ed Electives, including the University diversity requirement (three credits of D1 and three credits of D1 or D2).

3 CE Concentration Electives: CE 172, CE 172, CE 173, CE 180, any 200-level CE course.

4 Engineering Management Electives: BSAD 138, BSAD 143, BSAD 144, BSAD 145, BSAD 192, BSAD 268; and STAT 221, STAT 223, STAT 225, STAT 229, STAT 231, STAT 233, STAT 237, STAT 253. (Additional course options with advisor approval).

ELECTRICAL ENGINEERING CONCENTRATION

First Year		**Credits**
	Fall	**Spring**
CHEM 031 General Chemistry 1[1]	4	
EC 011 Principles of Macroeconomics	3	
ENGR 002 Graphical Communication	2	
ENGS 001 Written Expression	3	
MATH 021 Calculus I[1]	4	
CS 020 Programming for Engineers[1]		3
EC 012 Principles of Microeconomics		3
EE 001 First-year Design Experience		2
MATH 022 Calculus II[1]		4
PHYS 030 Physics Problem Solving I (Optional)		0-1
PHYS 031 Physics for Engineers I[1]		4
Year Total:	16	16-17

Sophomore		**Credits**
	Fall	**Spring**
BSAD 060 Financial Accounting	3	
CS 031 C Programming	1	
EE 003 Linear Circuit Analysis I	3	
EE 081 Linear Circuits Laboratory I	2	
MATH 121 Calculus III	4	
Gen Ed Elective[2]	3	
BSAD 061 Managerial Accounting		3
EE 004 Linear Circuit Analysis II		3
EE 082 Linear Circuits Laboratory II		2
MATH 271 Adv Engineering Mathematics		3
PHYS 123 Physics Problem Solving II (Optional)		0-1
PHYS 125 Physics for Engineers II		3
Year Total:	16	14-15

Junior		**Credits**
	Fall	**Spring**
BSAD 141 Info,Technology & Bus Systems	3	
EE 120 Electronics I	3	
EE 131 Fundamentals of Digital Design	3	
STAT 143 Statistics for Engineering or STAT 211 Statistical Methods I	3	
Gen Ed Elective[2]	3	3
BSAD 173 Operations Management		3
BSAD 180 Managerial Finance		3
EE 121 Electronics II		3
EE 134 Microcontroller Systems		4
Year Total:	15	16

Senior		**Credits**
	Fall	**Spring**
BSAD 120 Leadership & Org Behavior	3	
EE 163 Solid State Phys Electronics I or EE 171 Signals & Systems	4	
EMGT 185 Senior Project	3	
STAT 224 Stats for Quality&Productivity	3	
Gen Ed Elective[2]	3	
BSAD 270 Quant Anyl for Managerial Dec		3
Choose two EE Concentration Electives[3]		6

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Choose two EMGT Electives[4]		6
Year Total:	16	15
Total Credits in Sequence:		**124-126**

1 Pre-Engineering Technical (PET) requirement: PET courses must be completed with C- or better by the third semester of enrollment in order to continue in engineering coursework.

2 General Education: Nine credits of approved Gen Ed Electives, including the University diversity requirement (three credits of D1 and three credits of D1 or D2).

3 EE Concentration Electives: EE 113, EE 141, EE 163 (if not used to fulfill another requirement), EE 171 (if not used to fulfill another requirement), EE 174, both EE 183 & EE 184, any 200-level EE course. (At least 3 credits must be at the 200 level or higher).

4 Engineering Management Electives: BSAD 138, BSAD 143, BSAD 144, BSAD 145, BSAD 192, BSAD 268; and STAT 221, STAT 223, STAT 225, STAT 229, STAT 231, STAT 233, STAT 237, STAT 253; EMGT 175. (Additional course options with advisor approval).

MECHANICAL ENGINEERING CONCENTRATION

First Year		**Credits**
	Fall	**Spring**
CHEM 031 General Chemistry 1[1]	4	
EC 011 Principles of Macroeconomics	3	
ENGR 002 Graphical Communication	2	
ENGS 001 Written Expression	3	
MATH 021 Calculus I[1]	4	
CS 020 Programming for Engineers[1]		3
EC 012 Principles of Microeconomics		3
MATH 022 Calculus II[1]		4
ME 001 First-Year Design Experience		2
PHYS 030 Physics Problem Solving I (Optional)		0-1
PHYS 031 Physics for Engineers I[1]		4
Year Total:	16	16-17
Sophomore		**Credits**
	Fall	**Spring**
BSAD 060 Financial Accounting	3	
CE 001 Statics	3	
MATH 121 Calculus III	4	
ME 081 Mech Engr Shop Experience	1	
PHYS 123 Physics Problem Solving II (Optional)	0-1	
PHYS 125 Physics for Engineers II	3	
BSAD 061 Managerial Accounting		3
MATH 271 Adv Engineering Mathematics		3
ME 012 Dynamics		3
ME 040 Thermodynamics		3
ME 083 Computational Mech. Engr. Lab		1
Gen Ed Elective[2]		3
Year Total:	14-15	16
Junior		**Credits**
	Fall	**Spring**
EE 100 Electrical Engr Concepts	4	
MATH 124 Linear Algebra	3	
ME 111 System Dynamics	3	
ME 161 Modern Manufacturing Processes	3	
STAT 143 Statistics for Engineering or STAT 211 Statistical Methods I	3	
BSAD 141 Info,Technology & Bus Systems		3
BSAD 173 Operations Management		3
BSAD 180 Managerial Finance		3
ME 014 Mechanics of Solids		3
Gen Ed Elective[2]		3
Year Total:	16	15
Senior		**Credits**
	Fall	**Spring**
BSAD 120 Leadership & Org Behavior	3	
EMGT 185 Senior Project	3	
ME 101 Materials Engineering	3	
STAT 224 Stats for Quality&Productivity	3	
Gen Ed Elective[2]	3	
BSAD 270 Quant Anyl for Managerial Dec		3

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ME 171 Design of Elements		3
ME Concentration Elective[3]		3
Choose two EMGT Electives[4]		6
Year Total:	15	15
Total Credits in Sequence:		**123-125**

1 Pre-Engineering Technical (PET) requirement: PET courses must be completed with C- or better by the third semester of enrollment in order to continue in engineering coursework.

2 General Education: Nine credits of approved Gen Ed Electives, including the University diversity requirement (three credits of D1 and three credits of D1 or D2).

3 ME Concentration Electives: All 200-level or higher ME courses.

4 Engineering Management Electives: BSAD 138, BSAD 143, BSAD 144, BSAD 145, BSAD 192, BSAD 268; and STAT 221, STAT 223, STAT 225, STAT 229, STAT 231, STAT 233, STAT 237, STAT 253; EMGT 175. (Additional course options with advisor approval).