

# MANUFACTURING ENGINEERING, BACHELOR OF SCIENCE WITH A CONCENTRATION IN ADVANCED MANUFACTURING (B.S.)

## Program Requirements

### Summary Checklist for General Education

Code	Title	Hours
<b>Element 1</b>		
A:	Written Communication ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-1/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-1/</a> )	3
B:	Written Communication ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-1/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-1/</a> )	3
C:	Oral Communication ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-1/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-1/</a> )	3
<b>Element 2</b>		
	Quantitative Reasoning ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-2/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-2/</a> )	3
<b>Element 3</b>		
A:	Arts ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-3/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-3/</a> )	3
B:	Humanities ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-3/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-3/</a> )	3
<b>Element 4</b>		
	Natural Sciences ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-4/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-4/</a> )	6
<b>Element 5</b>		
A:	Historical Science ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-5/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-5/</a> )	3
B:	Social Behavioral Science ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-5/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-5/</a> )	3
<b>Element 6</b>		
	Diversity of Perspectives Experiences ( <a href="http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-6/">http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/element-6/</a> )	6
<b>Total Hours</b>		<b>36</b>

Students are expected to complete Elements 1 and 2 within their first 60 hours of college credit.

## Major

Code	Title	Hours
University Graduation Requirements		
General Education		36
Student Success Seminar		
SCO 100	Student Success Seminar	1
Upper division courses (42 hrs. distributed throughout Major/Supporting/Gen Ed/Free Electives categories)		
Major Requirements		
Core Courses		
AEM 201	Metallic Material Processes	3
AEM 301	Non-Metallic Material Processes	3
MFE 150	Introduction to Manufacturing & Engineering Design	3
MFE 195	Computer Aided Design	3
MFE 202	Introduction to Quality	3
MFE 330	Materials Testing and Metrology	3
MFE 349	Applied Learning in Manufacturing Engineering	1
MFE 407	Fundamentals of Project Management	3
MFE 498	Senior Capstone Project I	3
MFE 499	Senior Capstone Project II	3
PHY 221	Statics	3
PHY 315	Electrical Circuits	4
MFE 360		3
MFE 375		3
MFE 380		3
CSC 174	Introduction to Programming for Science & Engineering	3
<b>Concentrations</b>		
Students must select one of the following Concentrations:		
Quality and Lean Manufacturing		
Advanced Manufacturing		9
Industrial Health and Safety		
<i>Supporting Course Requirements</i>		<i>16-19</i>
CHE 111	General Chemistry ((Element 4)) <sup>G</sup>	
CHE 111L	General Chemistry Lab I ((Element 4)) <sup>G</sup>	
ECO 230	Fundamentals of Microeconomics ((Element 5B)) <sup>G</sup>	
MAT 234	Calculus I ((Element 2)) <sup>G</sup>	
MAT 244	Calculus II	
MAT 353	Differential Equations	
PHY 201	University Physics I ((Element 4)) <sup>G</sup>	
PHY 202	University Physics II ((Element 4)) <sup>G</sup>	
STA 270	Applied Statistics ((Element 2)) <sup>G</sup>	
STA 340	Applied Regression Analysis	
The addition of a certificate of minor to this program is highly recommended.		
Free Electives		4
<b>Total Hours</b>		<b>120</b>

### G

Course also satisfies a General Education element. Supporting hours are included within the 36 hr. General Education requirement above.

## Concentration

Code	Title	Hours
<b>Concentration Courses</b>		
Choose nine hours from the following:		9
MFE 352	Robotics and Automated Systems	
MFE 382	Advanced Material Processing	
MFE 390	3D Parametric Solid Modeling	
MFE 453	Additive Manufacturing	
<b>Total Hours</b>		<b>9</b>