

MECHATRONICS ENGINEERING TECHNOLOGY, BACHELOR OF SCIENCE (5015)

Program Coordinator

Bryan Reaka, bryan.reaka@wku.edu, (270) 745-7032

This program prepares individuals to apply basic engineering principles and advanced manufacturing technical skills in support of industrial operations. The major includes instruction in optimization theory, human factors, organizational behavior, industrial processes, industrial planning procedures, systems integration, quality, and project management. Graduates achieve positions of leadership in business and industry while practicing innovation in the global marketplace.

Program Description

A minor or second major is not required. Course requirements for the major are shown below. Students should consult with an advisor in planning their course schedules and career goals.

Project Lead the Way

The School of Engineering and Applied Sciences (SEAS) agrees to grant college level credit for secondary school students from certified Project Lead the Way (PLTW) schools who satisfy the following requirements:

First, students must complete the following two (2) PLTW courses with a grade of B or above and a 6 or above on the End of Course college credit exam: 1. Introduction to Engineering Design; and 2. Principles of Engineering

Second, students must complete two (2) of the following PLTW courses with a grade of B or above and a 6 or above on the End of Course college credit exam: Aerospace Engineering; Biological Engineering; Civil Engineering and Architecture; Computer Integrated Manufacturing; Computer Science and Software Engineering; Digital Electronics; Capstone Course – Engineering Design and Development

Third, students must meet the requirements for admission to Western Kentucky University and enroll in the Bachelor of Science in Manufacturing Engineering Technology program within SEAS. Finally, students requesting the credit must provide a written statement from the instructor of the PLTW program and the principal or guidance counselor, stating the student has successfully completed the program with the above specifications. In addition to the written statement, an official transcript should be submitted for verification.

If the previous four conditions are met, the following three (3) courses will be articulated to the student's Western Kentucky University record:

Code	Title	Hours
MFGE 120	Basic Electricity	3
MFGE 205	CADD for Manufacturing	3
AMS EL-L (Lower Level Undergraduate Technical Elective)		6
Total Hours		12

Program Requirements (67 hours)

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php. (https://www.wku.edu/registrar/degree_certification.php)

Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: <https://www.wku.edu/colonnade/colonnaderequirements.php>. (<https://www.wku.edu/colonnade/colonnaderequirements.php>)

Code	Title	Hours
Technical Core Courses		
Select one Finance Elective:		3
ACCT 110	Accounting for Decision Makers	
or ECON 202	Principles of Economics (Micro)	
or ECON 203	Principles of Economics (Macro)	
or FIN 161	Personal Finance	
or MKT 220	Basic Marketing Concepts	
AGMC 371 & AGMC 372	Agricultural Mechanics and Agricultural Mechanics Laboratory	3
MFGE 120	Basic Electricity	3
MFGE 205	CADD for Manufacturing	3
MFGE 217	Industrial Materials	3
MFGE 227	Introduction to Manufacturing Methods	3
MFGE 271	Industrial Statistics	3
MFGE 328	Robotics and Machine Vision	3
MFGE 342	Manufacturing Operations	3
MFGE 343	Automated Systems	3
MFGE 370	Computer Numerical Control	3
MFGE 490A	Senior Research for Manufacturing Engineering Technology	3
SEAS 398	Internship I	1
or SEAS 401	Contemporary Issues in Architecture and Manufacturing	
Total Hours		37
Management Core		
MFGE 310	Safety in Industry	3
MFGE 355	System Design	3
MFGE 365	Systems Operation	3
MFGE 371	Quality Assurance	3
MFGE 390	Project Management	3
MFGE 394	Lean	3
MFGE 396	Introduction to Supply Chain Management	3
MFGE 430	Technology Management / Supervision / Team Building	3
Select one Communications Elective:		3
COMM 345	Advanced Presentational Speaking	
or COMM 330	Leadership Communication	
or COMM 346	Persuasion	

or COMM 348	Interpersonal Communication	
or COMM 349	Small Group Communication	
or COMM 362	Organizational Communication	
or MGT 261	Business Communication Fundamentals	
Select one Business Law Elective:		3
MGT 301	Business Law	
or MGT 333	Management of Nonprofit Organizations	
Total Hours		30

Code	Title	Hours
Additional Program Requirements:		
Select one of the following Chemistry sequences:		4-5
CHEM 105 & CHEM 106	Fundamentals of General Chemistry and Fundamentals of General Chemistry Laboratory	
OR		
CHEM 120 & CHEM 121	College Chemistry I and College Chemistry I Laboratory	
MATH 117	Trigonometry (or higher)	3
PHYS 231 & PHYS 232	Introduction to Physics and Biophysics I and Laboratory for Physics and Biophysics I	4
Total Hours		11-12

† Please consult with your advisor regarding courses within your major that can overlap with Colonnade Program requirements (such as CHEM 105/106 and CHEM 120/121 [E-NS/SL], COMM 349 [K-SY], ECON 202 and 203 [E-SB], and FIN 161 [E-SB]).

Finish in Four Plan

First Year			
Fall	Hours	Spring	Hours
CHEM 105 & CHEM 106		4 COMM 145	3
ENG 100		3 HIST 101 or HIST 102	3
MATH 117		3 MFGE 217	3
MFGE 120		3 MFGE 271	3
MFGE 205		3 Finance Elective	3
	16		15
Second Year			
Fall	Hours	Spring	Hours
MFGE 227		3 ENG 200	3
MFGE 371		3 MFGE 342	3
PHYS 231 & PHYS 232		4 MGT 301 or MGT 333	3
Colonnade - Social & Behavioral Sciences		3 Colonnade - Arts & Humanities	3
General Elective		3 General Elective	3
	16		15
Third Year			
Fall	Hours	Spring	Hours
AGMC 371 & AGMC 372		3 MFGE 310	3
MFGE 328		3 MFGE 343	3
MFGE 355		3 MFGE 370	3
Communications Elective		3 MFGE 390	3

Connections - Social and Cultural	3	Connections - Local to Global	3
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
ENG 300		3 MFGE 365	3
MFGE 396		3 MFGE 394	3
MFGE 430		3 MFGE 490A	3
SEAS 398		1 General Elective	3
Connections - Systems		3 General Elective	3
	13		15
Total Hours 120			