

MANUFACTURING SYSTEMS ENGINEERING, BS

This B.S. program will provide graduates the skills and knowledge for successful careers in manufacturing systems and processes with practical applications ranging from manufacturing processes to cyber-physical systems.

Manufacturing jobs have become a major staple in the state economy, and our department, joining forces by the College of Engineering and The University of Alabama, is doing what it can to supply a pipeline of workers. A manufacturing facility has been built as part of an initiative oriented to develop a premier hub for multidisciplinary research and education in intelligent and advanced manufacturing systems and processes.

Freshman

Fall	Hours	Spring	Hours
CH 101 or 117 or CH 100	4	PH 105 or 125 MATH 126 or 146	4
MATH 125 or 145	4	ENGR 103	3
ME 121 or MFE 190	1	ENGR 161	1
History (HI) or social behavioral science (SB) elective	3	EN 102	3
EN 101 or 103	3		
15		15	

Sophomore

Fall	Hours	Spring	Hours
PH 106 or 126	4	MTE 271	3
MATH 227 or 247	4	MATH 238	3
AEM 201	3	AEM 250	3
ME 215	3	AEM 251	1
MFE 200-level Electives ¹	3	Humanities (HU), literature (L), or fine arts (FA) elective MFE 290	3
17		16	

Junior

Fall	Hours	Spring	Hours
ME 383	3	MFE 385	4
ECE 320	3	AEM 264 or 311	3
History (H) or social behavioral sciences (SB) elective	3	MFE 342	3
GES 400	3	MFE 332	3
MFE 200/300-level Elective ²	3	Humanities (H), literature (L), fine arts (FA) elective	3
15		16	

Senior

Fall	Hours	Spring	Hours
MFE 390 or ME 489	3	MFE 490 or ME 490	3
MFE 483	3	Approved Science Elective ⁴	4
MFE 442	3	MFE 473	3
MFE 485	3	Humanities (H), literature (L), fine arts (FA) elective	3

MFE 300/400-level elective ³	3 History (H) or social behavioral sciences (SB) elective	3
15		16

Total Hours: 125

Footnote 1 - MFE 200-level Electives

	Hours
MFE 201 Basics of Robotics	1
MFE 202 Basics of PLC	1
MFE 203 Basics of Auto & Matl Handling	1
CS 200 Software Design & Engineering	4
CS 201 Data Structures and Algorithms	0 or 4
CS 202 Web Foundations	0 or 3
CS 285 Spreadsheet Applications	0 or 3
MTE 275 Engineering Materials Lab	0 or 3
ST 260 Statistical Data Analysis	3

Other electives may be substituted for any of the above courses but require permission and approval of the program advisor and coordinator.

Footnote 2 - MFE 200/300-level Electives

	Hours
MFE 222 Robotic Welding	1
MFE 224 Industrial Auto with Robotics	1
MFE 226 Instrumentation for Automation	1
MFE 232 Flex Manufacturing Sys	1
MFE 262 Intro Industrial Internt Thngs	1
CS 302 Database Applications	0 or 3
CS 385 Advanced Spreadsheet Appl	3
ME 360 Contrl Instrumnt Components	0 or 3
ME 380 Engineering Leadership I	1
MTE 380 Synthesis,Proc & Mfg Matls.	3

Other electives may be substituted for any of the above courses but require permission and approval of the program advisor and coordinator.

Footnote 3 - MFE 300/400-level Electives

	Hours
MFE 302 Advanced PLC	1
MFE 303 Adv Auto & Matl Handling	1
MFE 326 Process Monitoring and Control	1
MFE 338 Introduction to Industry 4.0	1
CE 414 Information Systems Design	3
CE 417 Advanced Project Management	3
CE 418 Engineering Management	3
CS 305 Adv. Comp. Database Systems	3
ECE 438 Intgr Circuit Fabr Prin	3
ME 421 Reliability & Maint. Engr.	3
ME 424 Automotive Manufacturing	3
ME 430 Fuzzy Set Theory & Application	3
ME 440 Failure of Engr Materials	3
ME 456 Mechatronics	3
ME 484 Product Innovation	3
MTE 455 Mech Behavior Of Mtls	4

Other electives may be substituted for any of the above courses but require permission and approval of the program advisor and coordinator.

Footnote 4 - Approved Science Electives **Hours**

Select from the following:

AY 101	Intro To Astronomy
& AY 102	and Intro Astronomy Lab
AY 203	Observational Astronomy
& AY 204	and Solar System Astronomy
BSC 108	Intro Biology Non Maj I
BSC 109	Intro Biology Non Maj II
BSC 114	Principles Of Biology I
& BSC 115	and Laboratory Biology I
BSC 118	Honors General Biology I
CH 102	General Chemistry
CH 118	Honors General Chemistry
GEO 101	The Dynamic Earth
GEO 102	The Earth Through Time
GEO 105	Sustainable Earth
GY 101	Atmospheric Proc & Patterns
GY 102	Earth Surface Processes
GY 207	Field Water and Climate
PH 253	Intro Modern Physics
& PH 255	and Modern Physics Lab

Learn more about opportunities in this field at the Career Center

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