Manufacturing Engineering B.S.Mfg.E.

Degree Requirements: 130 Credit Hours

See Core Curriculum for required courses in Area A1 through Area E.

General Requirements (Core Areas A-E) 1 42

Additional Requirements 4

Area F - Courses Appropriate to Major
CHEM 1310 Comprehensive General Chemistry 4
MENG 2139 Numerical Methods in Engineering 3
MFGE 2142 Fundamentals of Engineering Mechanics 4
MFGE 2534 Applied Computing in Manufacturing Engineering 3
PHYS 2212K Principles of Physics II 4

Specific Requirements

Carryover from Area A2 2 1
Carryover from Area D 1
ENGR 2131 Electronics and Circuit Analysis 3
MFGE 2239 Engineering Modeling and Mathematical Analysis 3
STAT 2231 Introduction to Statistics I 3

Major Requirements

ENGR 1133 Engineering Graphics 3 3
MENG 1310 Manufacturing Processes Lab 1
MFGE 2421 Introduction to Additive Manufacturing Studio 2
MFGE 2531 Materials Science Studio for Manufacturing Engineering 3
MFGE 2533 Manufacturing Processing 2 Studio 3
MFE 3011 Design for Manufacturability, Assembly, Sustainability 3
MFE 3132 Quality and Statistical Process Control for Engineers 3
MFGE 3337 Hydraulics and Electro-mechanical Systems 3
MFGE 3421 Industrial Controls and Networking Studio 2
MFGE 3423 Facilities Design 2
MFGE 3531 Advanced Materials Processing 3
MFGE 3541 Energy Science Studio 4
MFGE 4135 Lean MFG Principals and Engineering Project Management 3
MFGE 4321 Manufacturing Engineering Capstone I 2
MFGE 4322 Manufacturing Engineering Capstone II 2
MFGE 4533 Industrial Robotics and Automation 3
MFGE 4614 Senior Seminar: Professional Skills and Leadership 1

Select 9 hours from one of the following Specialization Areas: 4 9

Lean and Six Sigma
MFGE 5131 Lean and Six Sigma 1
MFGE 5132 Lean and Six Sigma 2

Manufacturing Automation
MENG 5331 Automation and Computer Integrated Manufacturing Systems
MFGE 5235 Facilities Maintenance
MFGE 5331 Advanced Robotics for Manufacturing
MFGE 5332 Manufacturing Floor Control
MFGE 5333 Additive Manufacturing Studio
MFGE 5334 Additive Manufacturing of Lightweight Structures

Materials Process
MENG 5138 Composite Materials: Manufacturing, Analysis, and Design
MFGE 5531 Advanced CNC Machining and Programming
MFGE 5532 Introduction to MEMS
MFGE 5534 Packaging
MFGE 5535 NanoManufacturing
MFGE 5536 Characterization of Advanced Manufacturing Materials
MFGE 5537 Design for Environment and Green Manufacturing

SAP 5
CISM 3333 ERP Systems Using SAP
CISM 4237 Business Intelligence
CISM 4333 Human Resource Information Systems
CISM 4335 Advanced Business Applications Programming (ABAP) for the SAP/ERP System
CISM 4336 ERP and Enterprise Performance
CISM 4434 Enterprise System Configuration
CISM 4435 ERP Web Portal Customization and Collaboration using SAP NetWeaver

Occupational Health and Safety
TSEC 5331 Occupational Safety
TSEC 5333 Industrial Hygiene and Ergonomics
TSEC 5334 Hazardous Waste Management
TSEC 5335 Systems Safety in Manufacturing
TSEC 5336 Environmental Law

General Manufacturing Engineering
Choose any combination of three courses (9 credits) from any combination of specialization areas above with the advanced approval of your advisor and the department chair 6 9

Free Elective
Select 3 credit hours of Free Electives 3

1 MATH 2242 Calculus II and PHYS 2211 are recommended in Area D
2 While Calculus I (MATH 1441) is 4 credit hours, only 3 credit hours will count toward fulfilling Area A2. The remaining credit hour will be applied toward Specific Requirements.
3 College credits can be given for high school pre-engineering program Project Lead The Way’s (PLTW’s) Introduction to Engineering Design (IED) course as a possible substitution for Engineering Graphics (ENGR 1133), if the following three conditions are satisfied:
   • student scores 80% or above overall in the course and
   • an approval of the PLTW affiliate director faculty member at Georgia Southern.
4 The SAP Specialization requires additional prerequisite courses. Consult with your academic advisor.
Manufacturing Engineering Co-Op (MFGE 4091) (1 credit) may also be used to satisfy elective credit(s) and taken for repeat credit with an established co-op rotation of the same employer with advanced approval of the department chair.

Other Program Requirements
At least 33 semester hours of approved Engineering courses must be taken at Georgia Southern.

Advisement
Allen E. Paulson College of Engineering and Computing
CEC Office of Student Services, Room 1208
Telephone: (912) 478-4877