

APPLIED MANUFACTURING ENGINEERING - AUTOMATION AND ROBOTICS (BACHELOR OF SCIENCE)

Applied Engineering Core

| Course | Title | Credits |
|--------------------|--------------------------------------------|-----------|
| EH 322 | Technical Writing (WI) | 3 |
| or CBA 350 | Business Communications (WI) | |
| CS 201 | Introduction to Information Technology | 3 |
| AE 210 | Manufacturing Fundamentals | 3 |
| AE 211 | AC/DC Circuits | 3 |
| AE 343 | Engineering and Technology Management | 3 |
| or MGT 301 | Principles of Management | |
| AE 344 | Engineering Economy and Cost Analysis | 3 |
| AE 372 | Statistical Analysis for Quality Control | 3 |
| AE 380 | Industrial Safety and Health | 3 |
| AE 393 | Applied Engineering Junior Seminar | 1 |
| AE 494 | Applied Engineering Senior Internship (WI) | 2 |
| Total Hours | | 27 |

Applied Manufacturing Engineering Major

| Course | Title | Credits |
|--------------------|-------------------------------------|-----------|
| AE 251 | Computer-Aided Design | 3 |
| AE 361 | Materials and Processes of Industry | 3 |
| AE 366 | Control Systems Technology | 3 |
| AE 440 | Manufacturing Management Systems | 3 |
| Total Hours | | 12 |

Automation and Robotics Concentration

| Course | Title | Credits |
|--------------------------------------------------|---------------------------------------|-----------|
| EG 255 | Engineering Computation | 3 |
| AE 252 | Programmable Controllers | 3 |
| AE 416 | Manufacturing Automation and Robotics | 3 |
| AE 451 | Advanced Programmable Controllers | 3 |
| Select either Manufacturing or Electrical focus: | | 12 |
| Total Hours | | 24 |

Manufacturing Focus Requirements

| Course | Title | Credits |
|--------------------|----------------------------------|-----------|
| AE 355 | Advanced Computer-Aided Design | 3 |
| AE 365 | Strength of Industrial Materials | 3 |
| AE 460 | Computer-Aided Manufacturing | 3 |
| AE 477 | Additive Manufacturing | 3 |
| Total Hours | | 12 |

Electrical Focus Requirements

| Course | Title | Credits |
|--------------------|--------------------------------|-----------|
| AE 225 | Solid State Devices I | 4 |
| AE 311 | Digital Circuits | 4 |
| AE 326 | Solid State Devices II | 4 |
| & AE 327 | and Solid State Devices II Lab | |
| Total Hours | | 12 |

In addition to courses noted below, candidates for graduation must successfully complete all JSU Academic Regulations. **More information about general education requirements can be found in the Summary of Degrees/Requirements (<https://catalog.jsu.edu/undergraduate/summary-degrees-requirements/>) section of the catalog.**

Freshman

| Fall | Hours | |
|-------------------------|----------------------------------------|---|
| EH Composition sequence | 3 | |
| History sequence | 3 | |
| CS 201 | Introduction to Information Technology | 3 |
| MS 125 | Calculus I | 4 |
| AE 210 | Manufacturing Fundamentals | 3 |
| SSC 101 | First Year Experience | 0 |
| Hours | 16 | |

Spring

| | | |
|-------------------------|----------------|---|
| EH Composition sequence | 3 | |
| Fine Arts | 3 | |
| History sequence | 3 | |
| AE 211 | AC/DC Circuits | 3 |
| General Electives | 3 | |
| Hours | 15 | |

Sophomore

| Fall | Hours | |
|-------------------|------------------------------------------|---|
| EH 141 | Speech | 3 |
| EC 221 | Principles of Microeconomics | 3 |
| AE 251 | Computer-Aided Design | 3 |
| AE 372 | Statistical Analysis for Quality Control | 3 |
| General Electives | 3 | |
| Hours | 15 | |

Spring

| | | |
|-------------------------------------------------------------|------------------------------|---|
| Literature | 3 | |
| Natural Science ¹ | 4 | |
| Social/Behavioral Science | 3 | |
| AE 380 | Industrial Safety and Health | 3 |
| Manufacturing Focus or Electrical Focus Course ² | 3,4 | |
| Hours | 16-17 | |

Junior

| Fall | Hours | |
|-------------------------------------------------------------|-------------------------------------|---|
| Natural Science | 4 | |
| AE 252 | Programmable Controllers | 3 |
| AE 361 | Materials and Processes of Industry | 3 |
| AE 393 | Applied Engineering Junior Seminar | 1 |
| Manufacturing Focus or Electrical Focus Course ² | 3,4 | |
| Hours | 14-15 | |

Spring

| | | |
|--------------|---------------------------------------|---|
| EH 322 | Technical Writing (WI) | 3 |
| or CBA 350 | or Business Communications (WI) | |
| AE 343 | Engineering and Technology Management | 3 |
| or MGT 301 | or Principles of Management | |
| AE 366 | Control Systems Technology | 3 |
| AE 451 | Advanced Programmable Controllers | 3 |
| EG 255 | Engineering Computation | 3 |
| Hours | 15 | |

2 Applied Manufacturing Engineering - Automation and Robotics (Bachelor of Science)

Senior

Fall

| | | |
|------------------------------------------------------|---------------------------------------|-----------|
| Literature | | 3 |
| AE 344 | Engineering Economy and Cost Analysis | 3 |
| AE 416 | Manufacturing Automation and Robotics | 3 |
| Manufacturing Focus or General Elective ² | | 3 |
| General Elective | | 3 |
| Hours | | 15 |

Spring

| | | |
|-------------------------------------------------------------|--------------------------------------------|--------------|
| AE 440 | Manufacturing Management Systems | 3 |
| AE 494 | Applied Engineering Senior Internship (WI) | 2 |
| Manufacturing Focus or Electrical Focus Course ² | | 3,4 |
| General Electives | | 6,3 |
| Hours | | 14-12 |
| Total Hours | | 120 |

The student must have earned an overall grade point average of 2.75 based upon a 4.00 scale to include all AE courses and MS courses with a "C" or better.

¹ Select from: CY 105 General Chemistry I (3), CY 106 General Chemistry II (3), CY 107 General Chemistry Laboratory I (1), and CY 108 General Chemistry Laboratory II (1) or PHS 201 College Physics I (3), PHS 202 College Physics II (3), PHS 203 College Physics Laboratory Techniques I (1), and PHS 204 College Physics Laboratory Techniques II (1).

² Please refer to the Program Requirements tab for the listing of Focus courses.