

B.S. in Mechanical Engineering Technology

(120 credits minimum)

First Year

| 1st Semester | | Credits |
|-----------------------|---|----------------|
| MATH 138 | General Calculus I | 3 |
| PHYS 102 | General Physics I | 3 |
| PHYS 102A | General Physics I Lab | 1 |
| MET 103 | Introduction to Engineering Technology Design | 2 |
| ENGL 101 | English Composition: Introduction to Academic Writing | 3 |
| ET 101 | Introduction to Engineering Technology | 0 |
| SDET 101 or CS 106 | Fundamentals of Software and Data Technologies ¹ or Introduction to Computing | 3 |
| FYS SEM | First-Year Student Seminar | 0 |
| Term Credits | | 15 |

2nd Semester

| | | |
|---|---|-----------|
| MATH 238 | General Calculus II | 3 |
| PHYS 103 | General Physics II | 3 |
| PHYS 103A | General Physics II Lab | 1 |
| MET 105 | Applied Computer Aided Design | 2 |
| ENGL 102 | English Composition: Introduction to Writing for Research | 3 |
| Social Science Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/) | | 3 |
| Term Credits | | 15 |

Second Year**1st Semester**

| | | |
|--|---------------------------------------|-----------|
| CHEM 121 | Fundamentals of Chemical Principles I | 3 |
| CHEM 125A | General Chemistry Lab I | 1 |
| MET 235 | Statics for Technology | 3 |
| ECET 201 | Circuit Analysis DC and AC | 3 |
| History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/) | | 3 |
| Technical Elective (100 or 200 level) | | 3 |
| Term Credits | | 16 |

2nd Semester

| | | |
|----------------------------------|--|-----------|
| MET 236 | Dynamics for Technology | 2 |
| MET 237 | Strength of Materials for Technology | 3 |
| Free Elective (100 or 200 level) | | 3 |
| MNET 215 | Materials and Processes for Technology | 3 |
| MET 205 | Advanced Computer Aided Design | 3 |
| Term Credits | | 14 |

Third Year**1st Semester**

| | | |
|---------------------------------------|---|-----------|
| MET 301 | Analysis and Design of Machine Elements I | 3 |
| MET 303 | Applied Thermodynamics | 3 |
| MET 314 | Dynamics of Machinery | 3 |
| COM 313 | Technical Writing | 3 |
| Technical Elective (300 or 400 level) | | 3 |
| Term Credits | | 15 |

2nd Semester

| | | |
|---------|--|---|
| MET 302 | Analysis and Design of Machine Elements II | 3 |
|---------|--|---|

| | | |
|--|--------------------------------|------------|
| MET 304 | Applied Fluid Mechanics | 3 |
| ECET 329 | Analog and Digital Electronics | 3 |
| Free Elective (300 or 400 level) | | 3 |
| MNET 315 | Industrial Statistics | 3 |
| Term Credits | | 15 |
| Fourth Year | | |
| 1st Semester | | |
| MET 403 | Applied Thermodynamics II | 3 |
| MET 415 | Automatic Control Systems | 3 |
| History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/) | | 3 |
| Technical Elective (300 or 400 level) | | 3 |
| Technical Elective (300 or 400 level) | | 3 |
| Term Credits | | 15 |
| 2nd Semester | | |
| MNET 414 | Industrial Cost Analysis | 3 |
| MET 450 | Mech Design Capstone Project | 3 |
| Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/) | | 3 |
| Technical Elective (300 or 400 level) | | 3 |
| Technical Elective (300 or 400 level) | | 3 |
| Term Credits | | 15 |
| Total Credits | | 120 |

¹ This Computing Literacy GER can be satisfied with any course from this link: [Computing Literacy GER](#)

Free Electives

Consult the program coordinator. Students entering with fewer than 9 credits in humanities/social science must take an appropriate humanities/social science course to fulfill the NJIT GER. MATH 107/108/110 cannot be used to satisfy any free electives.

Suggested Free Electives

| Code | Title | Credits |
|----------|--|---------|
| BMET 311 | Applications in Healthcare Industry Sector I | 1 |
| BMET 312 | Applications in Healthcare Industry Sector II | 1 |
| BMET 313 | Applications in Healthcare Industry Sector III | 1 |
| ENGR 211 | Professional Skills for Engineers I | 1 |
| ENGR 220 | Introduction to Manual Machining | 2 |
| ENGR 221 | Intro to CNC Machining | 2 |
| ENGR 222 | Introduction to Wood Working | 1 |
| ENGR 223 | Introduction to CNC Routing | 1 |
| ENGR 224 | Introduction to Welding | 1 |
| ENGR 225 | Introduction to Physical Metrology | 1 |
| ENGR 312 | Professional Skills for Engineers II | 1 |

Approved Technical Electives

| Code | Title | Credits |
|----------|--|---------|
| BMET 231 | Medical Networks, Data Security, and Privacy | 3 |
| BMET 320 | Applied Biomedical Data Acquisition | 3 |
| BMET 415 | Biomedical Mechatronics | 3 |
| BMET 440 | Biomedical Experiential Learning | 3 |
| CET 314 | Principles of Building Construction | 3 |
| CET 317 | Construction Computing | 3 |

| | | |
|----------|--|---|
| CET 322 | Construction Codes and Regulations | 3 |
| CET 423 | Construction Safety | 3 |
| CMT 452 | Mechanical and Electrical Systems for Construction | 3 |
| ECET 205 | Fundamentals of Analog Electronics | 3 |
| ECET 211 | Computer Architecture and Embedded Systems | 3 |
| ECET 215 | Introduction to Digital Electronics | 3 |
| ECET 230 | Electronics Design for Manufacturing and Production | 3 |
| ENGR 301 | Engineering Applications of Data Science | 3 |
| ENGR 320 | Prototyping Essentials | 3 |
| ENGR 330 | Applications of Microcontrollers and IoT devices | 3 |
| ENGR 350 | Intellectual Property for Engineers | 3 |
| ENGR 360 | Geometric Dimensioning and Tolerancing and Applied Metrology | 3 |
| ENGR 423 | Drone Science Fundamentals | 3 |
| ENGR 424 | Robotics Science Fundamentals | 3 |
| ENGR 430 | Engineering for Quality and Reliability | 3 |
| ET 400 | Professional Engineer (PE) Preparation | 3 |
| IE 224 | Production Process Design | 3 |
| IET 416 | Applied Operations and Project Management | 3 |
| MATH 309 | Mathematical Analysis for Technology | 4 |
| MATH 322 | Differential Equations for Applications | 3 |
| MET 307 | Plastics Technology | 3 |
| MET 308 | Plastics Processing Techniques | 3 |
| MET 395 | Co-op Work Experience I | 3 |
| MET 404 | Applied Heat Transfer | 3 |
| MET 407 | Structural Design | 3 |
| MET 409 | AirConditioning and Refrigeration | 3 |
| MET 495 | Co-op Work Experience II | 3 |
| MNET 300 | Concepts In Machining | 3 |
| MNET 303 | Advanced Techniques in CAD/CAM | 3 |
| MNET 318 | Mnfg Process Design | 3 |
| MNET 405 | Numc Control Machn Tools | 3 |
| MNET 422 | Tool Design | 3 |
| MNET 420 | Quality Systems | 3 |
| SDET 102 | Applications of Software Engineering Technology | 3 |
| SDET 201 | Data Engineering | 3 |
| SDET 330 | Software Web Applications for Engineering Technology I | 3 |
| SDET 341 | Visual Basic.NET for Engineering Technology | 3 |
| SET 200 | Introduction To Geomatics | 2 |
| SET 200A | Introduction to Geomatics Lab | 1 |

Additional courses from other departments may be substituted as Technical Electives after obtaining prior approval from the MET Program Coordinator. MATH 107/108/110 cannot be used to satisfy any technical electives.

Co-op

Co-op courses must be approved by the MET Program Coordinator and Career Development Services. MET 395 Co-op Work Experience I is taken as an elective for degree credit. Students taking full time Co-op may only register for a maximum of 9 credits including Co-op. Students taking part time Co-op may only register for a maximum of 15 credits.

See the **General Education Requirements** "Refer to the General Education Requirements for specific information for GER courses"

This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits.

First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.