## Manufacturing Engineering, BS

**ABET accredited**

Course offerings subject to change

Major Credits: 151-155 (GURs not included)

Pre-major coursework in grey areas

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### 2023-2024 Academic Year

**Fall** | **Winter** | **Spring**
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**First Year**

MATH 124 (5) Calculus I, **WS**

MATH 125 (5) Calculus II, **FWS**

MATH 224 (5) Multiv. Calc and Geom., **FWS**

PHYS 161 (5) Physics w/ Calculus I, **F**

PHYS 162 (5) Physics w/ Calculus II, **W**

PHYS 163 (5) Physics w/ Calculus III, **F**

ENGR 101 (2) Eng., Design, & Society, **F**

ENGR 115 (4) Innovation Design, **WS**

CHEM 161 (5) Gen. Chemistry I, **FWS**

**Second Year**

MATH 204 (4) Elem. Linear Algebra, **FWS**

ENGR 170 (4) Intro Material Science, **FW**

ENGR 214 (4) Statics, **FW**

ENGR 225(4) Mechanics of Materials, **FWS**

MATH 345 (4) Engineering Statistics, **FWS**

MFGE 231 (4) Intro to Manuf. Processes, **FS**

MFGE 250 (4) Intro to Automation, **S**

**Third Year**

PME 371 (5) Intro to Plastics, **F**

ENGR 351 (4) Electronics for Engineers, **F**

MFGE 332 (4) Intro to CAM & CNC, **FW**

MFGE 340 (4) Numerical Methods, **W**

MFGE 365 (4) Machine Design, **W**

**Fourth Year**

MFGE 491 (3) Project Research (WP), **F**

MFGE 492 (3) Project Proposal (WP), **W**

MFGE 493 (4) Project Implementation, **S**

MFGE 463 (4) Design of Tooling, **F**

MFGE 465 (4) Design of Tooling, **W**

MFGE 453 (4) Industrial Robotics, **F**

Tech Elective

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**Apply to Major**

MFE 341(4) Quality & Cont. Improvement, **FWS**

MFE 351(4) Design for Manufacture, **W**

MFE 340(4) Numerical Methods, **W**

**Major Courses Begin**

MFGE 231 (4) Intro to Manuf. Processes, **FWS**

MFGE 250 (4) Intro to Automation, **S**

MFGE 381 (4) Manufacturing Process Plan, **S**

ENGR 352 (4) Intro Automation & Control, **S**

MFGE 365 (4) Machine Design, **W**

**Choose one of: MFGE 454 or MFGE 462 - if both then one is a tech elective**

**Tech Electives: 6-10 credits required**

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### Notes and Exceptions

- Students must complete General University Requirements in addition to major courses.
- Students not enrolled in MATH 124 and PHYS 161 fall quarter, may not finish in four years.
- Math 341 may be substituted for MATH 345.
- Students must complete at minimum 6 credits of technical electives.
- *Students must complete one of MFGE 454 or 462. If more than one, then count as tech elective.*

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**Engineering & Design**

516 High Street, Bellingham, WA 98229

ENGD@wwu.edu | 360.650.3380

http://engineeringdesign.wwu.edu

**Pre-major Advisor:**

Lisa Ochs | lisa.ochs@wwu.edu
## Manufacturing Engineering, BS

### Major Admissions

Students must first be accepted by the university. **The program accepts major applications during winter quarter.** Accepted students start major coursework spring quarter. Transfer students may apply at the same time if pre-requisite coursework is completed or in progress.

<table>
<thead>
<tr>
<th>Required coursework to apply</th>
<th>Required short answer portion</th>
<th>Admissions statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 124 Calculus I</td>
<td>Applicants are required to answer a set of short answer questions. The questions ask about the applicant's career goals, interest in the program, leadership and teamwork experience, and academic challenges and/or successes.</td>
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<tr>
<td>MATH 125 Calculus II</td>
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<tr>
<td>MATH 224 Multivariable Calculus &amp; Geometry I</td>
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<td>MATH 204 Linear Algebra</td>
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<td>CHEM 161 General Chemistry I</td>
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<td>PHYS 161 Physics w/ Calculus I</td>
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<tr>
<td>PHYS 162 Physics w/ Calculus II</td>
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<tr>
<td>ENGR 101* Engineering, Design, and Society</td>
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<tr>
<td>ENGR 115 Engineering, Innovation, &amp; Design</td>
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<tr>
<td>ENGR 170 Intro to Materials Science &amp; Engineering</td>
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<tr>
<td>ENGR 214 Statics</td>
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<tr>
<td>* waived for transfer students</td>
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</tbody>
</table>

**Students may be enrolled in no more than 4 of the required courses at time of application.**

<table>
<thead>
<tr>
<th>Recommended but not required to apply</th>
<th>Transfer students</th>
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</thead>
<tbody>
<tr>
<td>ENGR 225 Mechanics of Materials</td>
<td>Transfer students are encouraged to contact the pre-major advisor to discuss course equivalencies and recommended time to transfer.</td>
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<tr>
<td>MATH 331 Differential Equations</td>
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<tr>
<td>MATH 345 or 341 Engineering Statistics</td>
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<tr>
<td>PHYS 163 Physics w/ Calculus III</td>
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</table>

### Applications due: Winter Quarter

Applications due the first Friday in February every year. Accepted students start major coursework spring quarter. Applicants are notified of decisions before spring quarter registration begins.

**38-45 applicants**  
**average 3.1 pre-major GPA (not a cut off)**  
**24 accepted**

### Technical Electives

Students are required to complete 6-10 credits of technical electives. See website for approved list of courses. Faculty advisors must approve courses not on this list.

### Faculty Contact Information

- Associate Professor David Gill, gilld2@wwu.edu
- Associate Professor Sura Alqudah, alqudas@wwu.edu
- Associate Professor Tarek Algeddawy, algeddt@wwu.edu
- Professor Derek Yip-Hoi, yiphoid@wwu.edu

*updated: April 2023*