

# Mechanical Engineering Technology

- Bachelor of Science (B.S.)
- Program Curriculum



## Mathematics/Science coursework 15 cr.

CHEM 1020 - Chemical Technology <b>or</b>	4 cr.
CHEM 1110 - General Chemistry	
• course also satisfies UNIFI Scientific Reasoning requirement.	
CS 1510 - Introduction to Computing <b>or</b>	3 cr.
CS 1160 - C/C++ Programming	
MATH 1420 - Calculus I	4 cr.
• course also satisfies UNIFI Quantitative Reasoning requirement.	
PHYSICS 1511 - General Physics I <b>or</b>	4 cr.
PHYSICS 1701 - Physics I for Science & Engineering	
• course also satisfies UNIFI Scientific Reasoning requirement.	

## Technical Core 58 cr.

ENGR 1000 - Intro. to Engineering & Professional Practices	3 cr.
PHIL 1560 - Science, Technology & Ethics	3 cr.
• course also satisfies UNIFI Responsibility requirement.	
TECH 1008 - Basic Manufacturing Processes	3 cr.
TECH 1010 - Fundamentals of Metal Removal	3 cr.
TECH 1024 - Engineering Design with CAD	3 cr.
TECH 2024 - Technical Drawing with GD&T	3 cr.
TECH 2036 - Power Technology	3 cr.
TECH 2065 - Industrial Robotics	3 cr.
TECH 2072 - Engineering Materials	3 cr.
ENGR 2080 - Statics	2 cr.
ENGR 2180 - Strengths of Materials	2 cr.
TECH 3024 - Solid Modeling & Additive Manuf. for Design	3 cr.
TECH 3127 - Applied Thermodynamics	3 cr.
TECH 3135 - Product Design	3 cr.
TECH 3136 - Principles of Metal Casting	3 cr.
TECH 3148 - Machine Design	3 cr.
TECH 4137 - Tooling Practices in Metal Casting	3 cr.
TECH 4162 - Hydraulics & Pneumatics	3 cr.
ENGR 4500 - Senior Design	3 cr.
ENGLISH 3772 - Technical Writing for Eng. Technologists	3 cr.

## UNI Foundational Inquiry 37 cr.

Written Communications	3 cr.
Oral Communications	3 cr.
Quantitative Reasoning	3 cr.
• requirement completed with MATH 1420.	
Human Condition (Domestic)	3 cr.
Human Condition (Global)	3 cr.
Scientific Reasoning	4 cr.
• requirement completed with PHYSICS 1511.	
Human Expression	3 cr.
Responsibility	3 cr.
• requirement completed with PHIL 1560.	
UNIFI Elective	3 cr.
• requirement completed with CHEM 1020.	
UNIFI Elective	3 cr.
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Inspired by the University of Northern Iowa mission to engage students in high-quality and high-impact learning experiences within a challenging and supportive environment, UNI's new general education requirements are designed to ensure that students' foundational learning experiences lead to a lifetime full of potential. For more information, visit [unifi.uni.edu](http://unifi.uni.edu).

## Credit Totals

Math/Science coursework	15 cr.
Technical Core coursework	58 cr.
UNI Foundational Inquiry (UNIFI)	37 cr.
Credits counted twice (major & UNIFI)	-13 cr.
<b>Total</b>	<b>97 cr.</b>
University Electives needed	23 cr.
<b>Grand Total</b>	<b>120 cr.</b>

## Department of Applied Engineering & Technical Management

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 25 Industrial Technology Center  
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## Important ALEKS Test Information

The ALEKS test is a math placement test that all UNI students must complete prior to enrolling in certain math & science courses. Below are the scores required for the math & science requirements in this program:

- PHYSICS 1511: 45
- MATH 1420: 76

# Mechanical Engineering Technology

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## Example course sequence for *first-year, freshmen* students

<p><b>Fall 1</b></p> <p>UNIFI Written Communication course 3 cr.</p> <p>PHYSICS 1511 - General Physics I 4 cr.</p> <p>ENGR 1000 - Introduction to Engineering &amp; Professional Practices<sup>FO</sup> 3 cr.</p> <p>TECH 1008 - Basic Manufacturing Processes<sup>FO</sup> 3 cr.</p> <p>TECH 1024 - Engineering Design with CAD<sup>FO</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 16 cr.</b></p>	<p><b>Spring 1</b></p> <p>UNIFI Oral Communication course 3 cr.</p> <p>MATH 1420 - Calculus I 4 cr.</p> <p>PHIL 1560 - Science, Technology &amp; Ethics 3 cr.</p> <p>TECH 1010 - Fundamentals of Metal Removal<sup>SO</sup> 3 cr.</p> <p>TECH 2024 - Technical Drawing with GD&amp;T<sup>SO</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 16 cr.</b></p>
<p><b>Fall 2</b></p> <p>UNIFI Human Condition (Domestic) course 3 cr.</p> <p>CHEM 1020 - Chemical Technology 4 cr.</p> <p>CS 1510 - Introduction to Computing 3 cr.</p> <p>ENGR 2080 - Statics<sup>^</sup> 2 cr.</p> <p>University elective course 3 cr.</p> <p style="text-align: right;"><b>Total: 15 cr.</b></p>	<p><b>Spring 2</b></p> <p>UNIFI Human Expression course 3 cr.</p> <p>TECH 2036 - Power Technology<sup>SO</sup> 3 cr.</p> <p>TECH 2072 - Engineering Materials<sup>SO</sup> 3 cr.</p> <p>ENGR 2180 - Strengths of Materials<sup>^</sup> 2 cr.</p> <p>University elective course 3 cr.</p> <p style="text-align: right;"><b>Total: 14 cr.</b></p>
<p><b>Fall 3</b></p> <p>TECH 2065 - Industrial Robotics<sup>FO</sup> 3 cr.</p> <p>TECH 3024 - Solid Modeling &amp; Additive Manufacturing for Design<sup>FO</sup> 3 cr.</p> <p>TECH 3136 - Principles of Metal Casting<sup>FO</sup> 3 cr.</p> <p>ENGLISH 3772 - Technical Writing for Engineering Technologists<sup>^</sup> 3 cr.</p> <p>University elective course 3 cr.</p> <p style="text-align: right;"><b>Total: 15 cr.</b></p>	<p><b>Spring 3</b></p> <p>UNIFI Human Condition (Global) course 3 cr.</p> <p>TECH 3127 - Applied Thermodynamics<sup>SO</sup> 3 cr.</p> <p>TECH 3135 - Product Design<sup>SO</sup> 3 cr.</p> <p>University elective course 3 cr.</p> <p>University elective course 3 cr.</p> <p style="text-align: right;"><b>Total: 15 cr.</b></p>
<p><b>Fall 4</b></p> <p>UNIFI elective course 3 cr.</p> <p>UNIFI elective course 3 cr.</p> <p>TECH 3148 - Machine Design<sup>FO</sup> 3 cr.</p> <p>TECH 4162 - Hydraulics &amp; Pneumatics<sup>FO</sup> 3 cr.</p> <p>University elective course 3 cr.</p> <p style="text-align: right;"><b>Total: 15 cr.</b></p>	<p><b>Spring 4</b></p> <p>UNIFI elective course 3 cr.</p> <p>TECH 4137 - Tooling Practices in Metal Casting<sup>SO</sup> 3 cr.</p> <p>ENGR 4500 - Senior Design<sup>^</sup> 3 cr.</p> <p>University elective course 3 cr.</p> <p>University elective course 2 cr.</p> <p style="text-align: right;"><b>Total: 14 cr.</b></p>

## Example course sequence for *transfer students with an A.A. or A.S. degree*

<p><b>Fall 1</b></p> <p>CHEM 1020 - Chemical Technology 4 cr.</p> <p>PHYSICS 1511 - General Physics I 4 cr.</p> <p>ENGR 1000 - Introduction to Engineering &amp; Professional Practices<sup>FO</sup> 3 cr.</p> <p>TECH 1008 - Basic Manufacturing Processes<sup>FO</sup> 3 cr.</p> <p>TECH 1024 - Engineering Design with CAD<sup>FO</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 17 cr.</b></p>	<p><b>Spring 1</b></p> <p>MATH 1420 - Calculus I 4 cr.</p> <p>TECH 1010 - Fundamentals of Metal Removal<sup>SO</sup> 3 cr.</p> <p>TECH 2024 - Technical Drawing with GD&amp;T<sup>SO</sup> 3 cr.</p> <p>TECH 2072 - Engineering Materials<sup>SO</sup> 3 cr.</p> <p>ENGLISH 3772 - Technical Writing for Engineering Technologists<sup>^</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 16 cr.</b></p>
<p><b>Fall 2</b></p> <p>CS 1510 - Introduction to Computing 3 cr.</p> <p>TECH 2065 - Industrial Robotics<sup>FO</sup> 3 cr.</p> <p>ENGR 2080 - Statics<sup>^</sup> 2 cr.</p> <p>TECH 3136 - Principles of Metal Casting<sup>FO</sup> 3 cr.</p> <p>TECH 3024 - Solid Modeling &amp; Additive Manufacturing for Design<sup>FO</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 14 cr.</b></p>	<p><b>Spring 2</b></p> <p>TECH 2036 - Power Technology<sup>SO</sup> 3 cr.</p> <p>ENGR 2180 - Strengths of Materials<sup>^</sup> 2 cr.</p> <p>TECH 3127 - Applied Thermodynamics<sup>SO</sup> 3 cr.</p> <p>TECH 3135 - Product Design<sup>SO</sup> 3 cr.</p> <p>TECH 4137 - Tooling Practices in Metal Casting<sup>SO</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 14 cr.</b></p>
<p><b>Fall 3</b></p> <p>PHIL 1560 - Science, Technology &amp; Ethics 3 cr.</p> <p>TECH 3148 - Machine Design<sup>FO</sup> 3 cr.</p> <p>TECH 4162 - Hydraulics &amp; Pneumatics<sup>FO</sup> 3 cr.</p> <p>ENGR 4500 - Senior Design<sup>^</sup> 3 cr.</p> <p style="text-align: right;"><b>Total: 12 cr.</b></p>	<div data-bbox="1149 1713 1484 1837" style="border: 1px solid black; padding: 5px;"> <p><b>Legend</b></p> <p><sup>^</sup> - course requires a prerequisite.</p> <p><sup>%</sup> - course requires a co-requisite.</p> <p><sup>FO</sup> - course is only offered in the fall.</p> <p><sup>SO</sup> - course is only offered in the spring.</p> </div>

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