

Manufacturing Engineering Technology

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



Mathematics/Science coursework 15 cr.

CHEM 1020 - Chemical Technology or	4 cr.
CHEM 1110 - General Chemistry	
• course also satisfies UNIFI Scientific Reasoning requirement.	
CS 1510 - Introduction to Computing or	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 or	4 cr.
PHYSICS 1701 - Physics I for Science & Engineering	
• course also satisfies UNIFI Scientific Reasoning requirement.	

Technical Core 61 cr.

ENGR 1000 - Intro. to Engineering & Professional Practice	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 3113 - Manufacturing Tooling	3 cr.
TECH 3136 - Principles of Metal Casting	3 cr.
TECH 3142 - Statistical Quality Control	3 cr.
TECH 3143 - Managing Operations & Manuf. Systems	3 cr.
TECH 3147 - Computer-Aided Manufacturing	3 cr.
TECH 3177 - Advanced Manufacturing Processes	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.

Credit Totals

Math/Science coursework	15 cr.
Technical Core coursework	61 cr.
UNI Foundational Inquiry (UNIFI)	37 cr.
Credits counted twice (major & UNIFI)	-13 cr.
Total	100 cr.
University Electives needed	20 cr.
Grand Total	120 cr.

Department of Applied Engineering

University of Northern Iowa
Applied Engineering Building
Cedar Falls, IA 50614-0178
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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

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

Fall 1		Spring 1	
UNIFI Written Communication course	3 cr.	UNIFI Oral Communication course	3 cr.
PHYSICS 1511 - General Physics I [^]	4 cr.	MATH 1420 - Calculus I [^]	4 cr.
ENGR 1000 - Introduction to Engineering & Professional Practice ^{FO}	3 cr.	CS 1160 - C/C++ Programming	3 cr.
TECH 1008 - Basic Manufacturing Processes ^{FO}	3 cr.	TECH 1010 - Fundamentals of Metal Removal ^{SO}	3 cr.
TECH 1024 - Engineering Design with CAD ^{FO}	3 cr.	TECH 2024 - Technical Drawing with GD&T ^{SO}	3 cr.
Total: 16 cr.		Total: 16 cr.	
Fall 2		Spring 2	
UNIFI Human Condition (Domestic) course	3 cr.	UNIFI Human Expression course	3 cr.
CHEM 1020 - Chemical Technology	4 cr.	TECH 2036 - Power Technology ^{SO}	3 cr.
TECH 2065 - Industrial Robotics ^{FO}	3 cr.	TECH 2072 - Engineering Materials ^{SO}	3 cr.
ENGR 2080 - Statics [^]	2 cr.	ENGR 2180 - Strengths of Materials [^]	2 cr.
University elective course	3 cr.	University elective course	3 cr.
Total: 15 cr.		Total: 14 cr.	
Fall 3		Spring 3	
PHIL 1560 - Science, Technology & Ethics	3 cr.	UNIFI Human Condition (Global) course	3 cr.
TECH 3136 - Principles of Metal Casting ^{FO}	3 cr.	TECH 3113 - Manufacturing Tooling ^{SO}	3 cr.
TECH 3142 - Statistical Quality Control [^]	3 cr.	TECH 3143 - Managing Operations & Manufacturing Systems [^]	3 cr.
ENGLISH 3772 - Technical Writing for Engineering Technologists [^]	3 cr.	TECH 3147 - Computer Aided Manufacturing ^{SO}	3 cr.
University elective course	3 cr.	University elective course	3 cr.
Total: 15 cr.		Total: 15 cr.	
Fall 4		Spring 4	
UNIFI elective course	3 cr.	UNIFI elective course	3 cr.
UNIFI elective course	3 cr.	TECH 4137 - Tooling Practices in Metal Casting ^{SO}	3 cr.
TECH 3177 - Advanced Manufacturing Processes ^{FO}	3 cr.	ENGR 4500 - Senior Design [^]	3 cr.
TECH 4162 - Hydraulics & Pneumatics ^{FO}	3 cr.	University elective course	3 cr.
University elective course	3 cr.	University elective course	2 cr.
Total: 15 cr.		Total: 14 cr.	

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

Fall 1		Spring 1	
CHEM 1020 - Chemical Technology	4 cr.	PHYSICS 1511 - General Physics I [^]	4 cr.
MATH 1420 - Calculus I [^]	4 cr.	CS 1160 - C/C++ Programming	3 cr.
ENGR 1000 - Introduction to Engineering & Professional Practice ^{FO}	3 cr.	TECH 1010 - Fundamentals of Metal Removal ^{SO}	3 cr.
TECH 1008 - Basic Manufacturing Processes ^{FO}	3 cr.	TECH 2024 - Technical Drawing with GD&T ^{SO}	3 cr.
TECH 1024 - Engineering Design with CAD ^{FO}	3 cr.	TECH 2072 - Engineering Materials ^{SO}	3 cr.
Total: 17 cr.		Total: 16 cr.	
Fall 2		Spring 2	
TECH 2065 - Industrial Robotics ^{FO}	3 cr.	TECH 2036 - Power Technology ^{SO}	3 cr.
ENGR 2080 - Statics [^]	2 cr.	ENGR 2180 - Strengths of Materials [^]	2 cr.
TECH 3136 - Principles of Metal Casting ^{FO}	3 cr.	TECH 3113 - Manufacturing Tooling ^{SO}	3 cr.
TECH 3142 - Statistical Quality Control [^]	3 cr.	TECH 3147 - Computer Aided Manufacturing ^{SO}	3 cr.
ENGLISH 3772 - Technical Writing for Engineering Technologists [^]	3 cr.	TECH 4137 - Tooling Practices in Metal Casting ^{SO}	3 cr.
Total: 14 cr.		Total: 14 cr.	
Fall 3			
PHIL 1560 - Science, Technology & Ethics	3 cr.		
TECH 3143 - Managing Operations & Manufacturing Systems [^]	3 cr.		
TECH 3177 - Advanced Manufacturing Processes ^{FO}	3 cr.		
TECH 4162 - Automation-Pneumatics & Hydraulics ^{FO}	3 cr.		
ENGR 4500 - Senior Design [^]	3 cr.		
Total: 15 cr.			

Legend

- [^] - course requires a prerequisite.
- [%] - course requires a co-requisite.
- ^{FO} - course is only offered in the fall.
- ^{SO} - course is only offered in the spring.

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