Technology and Engineering Education - Teaching B.S.

Technology and Engineering Education - Teaching Major

The B.S. Technology and Engineering Education-Teaching major requires a minimum of 120 total hours to graduate. This total includes UNIFI/General Education requirements, the Professional Experiences requirements, Educator Essentials requirements, and the following specified major requirements, to complete the minimum of 120 hours.

This major leads to Iowa BOEE endorsement #140: 5-12 Industrial Technology.

Math and Science:

CHEM 1020	Chemical Technology	4
PHYSICS 1000 & PHYSICS 1010	Physics in Everyday Life and Physics in Everyday Life Laboratory ^	4
or PHYSICS 1511	General Physics I	
MATH 1140	Precalculus ^	4
or MATH 1150	Calculus for Technology	

Required Core:

TECH 1008	Basic Manufacturing Processes	3
TECH 1010	Fundamentals of Metal Removal	3
TECH 1024	Engineering Design with CAD	3
CONSTR 1000	Fundamentals of Construction Management Materials & Methods	3
TECH 1055	Graphic Communications Foundations	3
TECH 1037	Introduction to Circuits	3
or TECH 3164	Programmable Logic Controllers (PLCs)	
or TECH 2036	Power Technology	
TECH 2065	Industrial Robotics	3
TECH TEE 2020	Transportation Technology	3
Total Hours		**36**

^ Has prerequisite of satisfactory score on ALEKS exam or subsequent remediation.

Professional Experiences

Required:

EDUC 2341	Teaching Methods l: Industrial Technology Curriculum Planning *	3
EDUC 2441	Teaching Internship l: Industrial Technology Instruction l	3
EDUC 3541/5541	Teaching Methods ll: Industrial Technology Lab Management *, @	3
EDUC 3641/5641	Teaching Internship ll: Industrial Technology Instruction ll	3
EDUC 4138	Secondary School Teaching	12
Total Hours		**24**

* A grade of C (2.00) or higher is required for all Methods courses.
@EDUC 3541/5541 meets the Bachelor of Science degree undergraduate research course requirement.

Educator Essentials

Required: *
Select one of the following in each category:

Category 1: The Learner		**3**
EDPSYCH 1500	Reflections on Learning	
EDPSYCH 2068	Development and Learning in Sociocultural Contexts	
EDPSYCH 2100	Creativity and Higher Order Thinking in the Classroom	
SOCFOUND 2243	Rethinking the Learning Society: Education and Its Future(s)	
Category 2: Social Contexts of Learning		**3**
SOCFOUND 2119	Social & Cultural Foundations of Education	
SOCFOUND 2134	A Modern History of Education in the United States	
SOCFOUND 2334	Education Policy and Politics of Education	
TESOL 2015	Language Today	
Category 3: Education for All		**3**
KINES 4152	Adapted Physical Education	
SOCFOUND 3334	Education, Power, and Change	
SOCFOUND 3434	Social Movements and Education	
SPIE 3140	Interdisciplinary and Intersectional Study of Education for All	
SPIE 3150	Meeting the Needs of Diverse Learners in Classrooms	
TESOL 3710	Content Area Strategies for English Language Learners	
Category 4: The Classroom Environment		**3**
EDPSYCH 3200	Deeper Motivation and the Highly Engaged Classroom	

EDPSYCH 3300	Level Up: Gamified Learning Environments	
ECIE 4151	Early Childhood Curriculum Development and Organization	
RTNL 3360	Playful Learning and Project-Based Experiences: Techniques for Ed and Recreational Environments	
SOCFOUND 3219	Critical Perspectives on Technology and Education	
Category 5: Effective Pedagogy		**3**
ARTED 4600	Expressive Learning Assessment	
LRNTECH 3600	Technology, Pedagogy, and Learning in the Digital Age	
MEASRES 3510	Assessment for Learning	
TEACHING 3500	Effective Teaching through Differentiation, Technology and Assessment	
Category 6: The Professional Educator		**3**
ECIE 3149	Child, Family, School and Community Relationships	
SOCFOUND 3519	Teacher Leadership & Educational Change	
TEACHING 3177	Collaborative Partnerships for Educators	
Total Hours		**18**

* A grade of C (2.00) or higher is required in each Educator Essentials course.

Four-Year Plan

Technology and Engineering Education Teaching, B.S.

This is a sample plan of study with a suggested sequencing of classes for the major. University electives may be applied to earn additional academic majors, minors, or certificates. Students should regularly meet with their academic advisor to plan their specific semester schedule to include UNIFI/General Education program and/or university elective hours required.

Course	Title	Hour
Freshman		
Fall		
TECH 1008	Basic Manufacturing Processes	3
TECH 1055	Graphic Communications Foundations	3
TECH TEE 1000	Introduction to Technology and Engineering Education	3
UNIFI/General Education or University Electives		3
Educator Essentials Course		3
	Hours	**15**
Spring		
MATH 1140	Precalculus	4
TECH 1010	Fundamentals of Metal Removal	3
UNIFI/General Education or University Electives		6
Educator Essentials Course		3
	Hours	**16**
Sophomore		
Fall		
PHYSICS 1000	Physics in Everyday Life	3
PHYSICS 1010	Physics in Everyday Life Laboratory	1
TECH 1024	Engineering Design with CAD	3
CONSTR 1000	Fundamentals of Construction Management Materials & Methods	3
UNIFI/General Education or University Electives		3
Educator Essentials Course		3
	Hours	**16**
Spring		
EDUC 2341	Teaching Methods l: Industrial Technology Curriculum Planning	3
EDUC 2441	Teaching Internship l: Industrial Technology Instruction l	3
UNIFI/General Education or University Electives		6
Educator Essentials Course		3
	Hours	**15**
Junior		
Fall		
CHEM 1020	Chemical Technology	4
TECH 2065	Industrial Robotics	3
UNIFI/General Education or University Electives		6
Educator Essentials Course		3
	Hours	**16**
Spring		
TECH 3164	Programmable Logic Controllers (PLCs)	3
TECH TEE 2020	Transportation Technology	3
UNIFI/General Education or University Electives		6
	Hours	**12**
Senior		
Fall		
SOCFOUND 2119	Social & Cultural Foundations of Education	3
EDUC 3541/5541	Teaching Methods ll: Industrial Technology Lab Management	3
EDUC 3641/5641	Teaching Internship ll: Industrial Technology Instruction ll	3
UNIFI/General Education or University Electives		6
Educator Essentials Course		3
	Hours	**18**
Spring		
EDUC 4138	Secondary School Teaching	12
	Hours	**12**
	Total Hours	**120**

Learning Outcomes

Technology and Engineering Education Teaching, B.S.

Program Educational Objectives (PEOs):

- Financial responsibilities
- Diverse learners & student documents
- Conducting yourself as a professional educator
- Post secondary advisor to students

Student Learning Objectives (SLOs):

- Design and deliver curriculum plan in Technology and Engineering Education.
- Evaluate laboratory spaces in Technology and Engineering Education.
- Apply skills in Manufacturing as related to Technology and Engineering Education.
- Apply skills in Construction as related to Technology and Engineering Education.
- Apply skills in Energy and Power as related to Technology and Engineering Education.
- Apply skills in Graphic Communications as related to Technology and Engineering Education.
- Ability to apply skills in Transportation as related to Technology and Engineering Education.

Related Programs

- Manufacturing Engineering Technology B.S.
- Technology Education - Teaching Minor