DEPARTMENT OF INDUSTRIAL & ENGINEERING TECHNOLOGY

BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY EDUCATION

The Engineering and Technology Teacher Education program is designed to prepare individuals to teach comprehensive, action-based engineering/technology education programs in the ninth through twelfth grades. The students will develop technical and teaching competencies in communications technology, energy and power technology, construction, and materials and processes technology.

CURRICULUM CHECKLIST

UNIVERSITY STUDIES (53 hours)

- UI 100 First Year Seminar 3
- Artistic Expression (PG284 Photography Fundamentals) 3
- Literary Expression 3
- SC 105 Fundamentals of Oral Communication (Oral Expression) 3
- EN 100 English Composition 3
- EN 140 Rhetoric & Critical Thinking (Written Expression) 3
- PY 222 (Behavioral Systems) 3
- Bi/BS Course (Living Systems) 3
- MA 134 College Algebra (Logical Systems) 3
- CH 181/081/001 Basic Principles of Chemistry (Physical Systems) 5
- US 105 or US 107 (Development of a Major Civilization) 3
- Economic Systems (Recommend MN 220) 3
- PS 103 OR PS 104 (Political Systems) 3
- Social Systems* (Recommend SE275- Required for sec. ed.) 3
- UI 3xx Interdisciplinary University Studies Course (UI319 recommended) 3
- UI 3xx Interdisciplinary University Studies Course 3
- UI 4xx University Studies Senior Seminar 3
- WP003 Writing Proficiency Test (to be taken after completing 75 hours) 0
- MAPP Academic Proficiency & Progress Test (to be taken after completing 75 hours) 0
- CL001 __ CL002 __ CL003 __ CL004 Career Linkages Requirements 0

SECONDARY PROFESSIONAL EDUC. REQUIREMENTS (44 Hours includes 6 hours in University Studies)

Block I:  4 hours
- ED 250 Intro Teaching 2
- ED 251 Intro Technology 2
- PY 222 Development of the Adolescent* (Behavioral Systems) 3

Block II:  14 hours*
- EF 304 School & Society 2
- SE 305 Secondary Block II Field Experience 2
- SE 306 Theories of Learning & Management 2
- SE 307 Teaching Reading/Secondary School 2
- SE 308 Fund of High School Education 3
- SE 275 Diversity in American Schools* (Social Systems) 3

Block III:  10 hours**
- EX 390 Psychology & Education of the Exceptional Child 3
- SE 300 Technology to Enhance Learning 2
- SE 316 Techniques of Teaching Technology Education 3
- SE 370 Secondary Block III Field Experience 2

Block IV:  13 hours
- EF 400 Seminar/Education Issues for Student Teachers 1
- SE 463 Student Teaching Secondary (1)* 6
- SE 464 Student Teaching Secondary (2)* 6

*Enrollment in Block II requires admittance to Teacher Education Program
**Portions of Block III (SE 316 and SE 305) are fall only

ENGINEERING TECHNOLOGY EDUCATION. (36 Hours, 27 required & 9 electives)

15 hours of the major need to be 300-400 level courses. (A grade of “C” or better is required in all courses within the major.)

REQUIRED:

Information and Communications Technologies
- PG 284 Photography Fundamentals (artistic expression) 3
- MN 120 Fundamentals of Engineering Design Process 3

Construction Technologies
- CM 126 Computer Aided Architectural Drafting 3
- CM 243 Construction Methods & Materials 3

Materials and Process Technology
- MN 170 Engineering Materials & Testing 3
- MN 203 Industrial Materials & Processes I 3

Energy, Power, and Transportation Technologies
- ET 160 Basic Electricity & Electronics 3
- AG 303 Agricultural Mechanization 3

Foundations of and Professionalism in Technology and Engineering Education:
- IE 401 Technology Education Management 3
Electives (9 hours) to be chosen from:

**Information and Communications Technologies:**
- GM 180 Introduction to Technical Graphics 3
- GM 200 Vector Bitmapped Graphics for Industry 3
- MN 221 Solid Modeling & Rapid Prototyping 3
- MN 324 Design Modeling & Processes 3

**Construction Technologies:**
- CM 226 Residential Architectural Drafting and Design 3
- CM 310 Construction Building Costs 3
- CM 320 Construction Cost Estimating 3

**Materials and Process Technology:**
- MN 304 Industrial Materials & Processes II 3
- MN 350 Machine Design 3
- MN 354 Computer Aided Manufacturing 3

**Energy, Power, and Transportation Technologies:**
- ET 245 Logic Circuits 3
- TN 255 Microcomputer Maintenance and Troubleshooting 3
- TN 275 Network Fundamentals 3
- TN 375 Network Routing Protocols and Concepts 3

**Foundations of and Professionalism in Technology and Engineering Education:**
- IE 192 Selection & Organization of Subject Matter 3
- IE 193 Principles & Practices of Technical Subjects 3
- IE 196 Foundations of Career and Technical Education 3
- IE 197 Coordination of Cooperative Education 3
- IE 590 Assessment for Career and Technical Education 3

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**EXAMPLE PROGRAM OF STUDY**

**BSE – Engineering Technology Education**

**FRESHMAN FALL SEMESTER (15 hrs)**
EN 100  English Comp
MA 134  College Algebra
PY 222  Development of the Adolescent
MN 120  Fund of Eng. Design Processes
UI 100  First Year Seminar
CL001  Career Linkages 1\(^{st}\) Requirement

**FRESHMAN SPRING SEMESTER (15 hrs)**
CH 181/081/001 Basic Principles of Chemistry
EN 140 Rhetoric & Critical Thinking
ED 250 Intro to Teaching
ED 251 Intro to Technology
MN 170 Industrial Materials and Testing
CL002  Career Linkages 2\(^{nd}\) Requirement

**SOPHOMORE FALL SEMESTER (15 hrs)**
Elective
SC 105  Fundamentals Oral Communication
ET 160  Basic Electricity & Electronics
MN 203  Industrial Materials & Processes I
TN 255 Microcomputer Maint. & Troubleshooting
CL001  Career Linkages 1\(^{st}\) Requirement

**SOPHOMORE SPRING SEMESTER (15 hrs)**
Artistic Expression   (PG284)
Living Systems (Choose a BS/BI course
CM126 Comp. Aided Arch. Drafting
Social Systems (SE 275)
Literary Expression

**JUNIOR FALL SEMESTER (15 hrs)**
Elective
***IE 401 Technology Education Management
PS 103 or PS104 (Political Systems)
US 105 or US 107 (Dev of Major Civilization)
CM 243 Construction Methods and Materials
CL003 Career Linkages 3\(^{rd}\) Requirement

**JUNIOR SPRING SEMESTER (17 hrs)**
EF 304  School & Society
SE 275 Diversity in American Schools
* SE 305 Sec Block II Fld Exp
SE 306  Theory of Learning & Mgt
SE 307  Teaching Reading Sec School
SE 308  Fund of High School Education
Economic Systems (MN 220 Also counts as Elective)
WP003 Writing Proficiency Exam

**SENIOR FALL SEMESTER (16 hrs)**
EX 390  Psy & Ed Exceptional Child
SE 300  Technology to Enhance Learning
**SE 316 Tech of Teaching Techn Education
**SE 370 Secondary Block III Field Exp
UI 3xx  (UI 319 Recommended)
UI 3xx  University Studies
CL004 Career Linkages 4\(^{th}\) Requirement
MAPP Academic Proficiency & Progress Test
(after completing 90 hours)

**SENIOR SPRING SEMESTER (16 hrs)**
EF 400  Seminar/Educ Issues for Student Teachers
SE 463  Student Teaching Exp I
SE 464  Student Teaching Exp II
UI 4xx  University Studies

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124 Hours

*Enrollment in Secondary Block II requires admittance to teacher education program.
** SE-316 and SE-370 are fall – only courses. Please plan accordingly
*** IE-401 is taught in fall/alternating years

For More information on the College of Education and degree requirements see:  http://www.semo.edu/cea/