

# BS in Technology & Engineering Studies: Teaching (396547) MAP Sheet

## Engineering and Technology, School of Technology

For students entering the degree program during the 2017-2018 curricular year.

This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to <http://education.byu.edu/ess/licensing.html> or contact Education Student Services, 120 MCKB, (801) 422-3426.



| University Core and Graduation Requirements   |                 |              |                          | Suggested Sequence of Courses  |                  |                                   |             |
|---|-----------------|--------------|--------------------------|--|------------------|-----------------------------------|-------------|
| <b>University Core Requirements:</b>  |                 |              |                          | <b>FRESHMAN YEAR</b>   |                  |                                   |             |
| <b>Requirements</b>   | <b>#Classes</b> | <b>Hours</b> | <b>Classes</b>           | <u>1st Semester</u>  |                  | <b>JUNIOR YEAR</b>                |             |
| <b>Religion Cornerstones</b>  |                 |              |                          | TES 276 A  | 3.5              | <u>5th Semester</u>               |             |
| Teachings and Doctrine of The Book of Mormon  | 1               | 2.0          | REL A 275                | TES 276 B  | 0.5              | Civilization I                    | 3.0         |
| Jesus Christ and the Everlasting Gospel   | 1               | 2.0          | REL A 250                | TES 200  | 3.0              | Advanced Writing                  | 3.0         |
| Foundations of the Restoration  | 1               | 2.0          | REL C 225                | Physical Science   | 3.0              | Arts or Letters                   | 3.0         |
| The Eternal Family  | 1               | 2.0          | REL C 200                | First-Year Writing or A HTG 100  | 3.0              | Religion elective                 | 2.0         |
| <b>The Individual and Society</b>   |                 |              |                          | TES 291R   | 0.5              | SC ED 353                         | 2.0         |
| American Heritage   | 1-2             | 3-6.0        | from approved list       | Religion Cornerstone course  | 2.0              | ENG T 231                         | 3.0         |
| Global and Cultural Awareness   | 1               | 2-3.0        | SC ED 353* or ENG T 231* | <b>Total Hours</b>   | <b>15.5</b>      | <b>Total Hours</b>                | <b>16.0</b> |
| <b>Skills</b>   |                 |              |                          | <u>2nd Semester</u>  |                  | <u>6th Semester</u>               |             |
| First Year Writing  | 1               | 3.0          | from approved list       | First-year Writing or A HTG 100  | 3.0              | Civilization II & Arts or Letters | 3.0         |
| Advanced Written and Oral Communications  | 1               | 3.0          | from approved list       | CE EN 112 or CFM 105   | 3.0              | TES 377                           | 2.0         |
| Quantitative Reasoning  | 1               | 3.0          | MATH 110*                | MATH 110 or 111  | 2-3.0            | TES 378                           | 2.0         |
| Languages of Learning (Math or Language)  | 1-4             | 3-20.0       | from approved list       | TES 229  | 3.0              | CPSE 402                          | 2.0         |
| <b>Arts, Letters, and Sciences</b>  |                 |              |                          | TES 291R   | 0.5              | TES Technical Elective            | 3.0         |
| Civilization 1  | 1               | 3.0          | from approved list       | Religion Cornerstone course  | 2.0              | Minor/Elective                    | 3.0         |
| Civilization 2  | 1               | 3.0          | from approved list       | Religion elective  | 2.0              | <b>Total Hours</b>                | <b>15.0</b> |
| Arts  | 1               | 3.0          | ARTH C 202 recommended   | <b>Total Hours</b>   | <b>15.5-16.5</b> | <b>SENIOR YEAR</b>                |             |
| Letters   | 1               | 3.0          | from approved list       | <u>3rd Semester</u>  |                  | <u>7th Semester</u>               |             |
| Biological Science  | 1               | 3-4.0        | from approved list       | TES 125  | 3.0              | SC ED 375                         | 3.0         |
| Physical Science  | 1-2             | 3-7.0        | from approved list       | CS 142   | 3.0              | TES Technical Elective            | 3.0         |
| Social Science  | 1               | 3.0          | ENG T 231*               | TES 340  | 3.0              | TES Technical Elective            | 3.0         |
| <b>Core Enrichment: Electives</b>   |                 |              |                          | TES 225  | 3.0              | TES Technical Elective            | 2.0         |
| Religion Electives  | 3-4             | 6.0          | from approved list       | TES 291R   | 0.5              | Religion Elective                 | 2.0         |
| Open Electives  | Variable        | Variable     | personal choice          | TES 291R   | 0.5              | <b>Total Hours</b>                | <b>16.0</b> |
| FOR UNIVERSITY CORE QUESTIONS CONTACT THE COLLEGE ADVISEMENT CENTER IN 242 CB<br>FOR PROGRAM QUESTIONS SEE YOUR ADVISOR IN 250 SNLB |                 |              |                          | TECH 312   | 1.0              | <u>8th Semester</u>               |             |
| *THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (8-9 hours overlap)   |                 |              |                          | Religion Cornerstone course  | 2.0              | TES 476                           | 12.0        |
| <b>Graduation Requirements:</b>   |                 |              |                          | <b>Total Hours</b>   | <b>15.5</b>      | <b>Total Hours</b>                | <b>12.0</b> |
| Minimum residence hours required  |                 | 30.0         |                          | <u>4th Semester</u>  |                  |                                   |             |
| Minimum hours needed to graduate  |                 | 120.0        |                          | TES 255  | 3.0              |                                   |             |
|   |                 |              |                          | TES 330  | 3.0              |                                   |             |
|   |                 |              |                          | Biology  | 3.0              |                                   |             |
|   |                 |              |                          | TES 291R   | 0.5              |                                   |             |
|   |                 |              |                          | Languages of Learning  | 3.0              |                                   |             |
|   |                 |              |                          | Religion Cornerstone course  | 2.0              |                                   |             |
|   |                 |              |                          | <b>Total Hours</b>   | <b>14.5</b>      |                                   |             |
|   |                 |              |                          | Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate. |                  |                                   |             |

## BS in Technology & Engineering Studies: Teaching (396547)

### 2017-2018 Program Requirements (65.5 - 77 Credit Hours)

*For students accepted into the major after August 1, 2014, grades below C in any required coursework in a teaching major or teaching minor will not be accepted. Teacher candidates must maintain a total GPA of 3.0 or higher throughout the program and to qualify for student teaching. For details on admission and retention requirements for teaching majors and teaching minors, see Educator Preparation Program Requirements in the Undergraduate Catalog.*

**REQUIREMENT 1** Complete 3 options

**OPTION 1.1** Complete 1 course

|  |     |
|--|-----|
| CE EN 112 - Engineering Drafting with CAD Applications           | 3.0 |
| CFM 105 - Introduction to Construction and Facilities Management | 3.0 |

**OPTION 1.2** Complete 1 course

|                             |     |
|-----------------------------|-----|
| *MATH 110 - College Algebra | 3.0 |
| MATH 111 - Trigonometry     | 2.0 |

**OPTION 1.3** Complete 12 courses

**NOTE: FINGERPRINTING AND FBI CLEARANCE MUST BE COMPLETED PRIOR TO ENROLLING IN TES 276A,B.**

|  |     |
|--|-----|
| C S 142 - Introduction to Computer Programming                 | 3.0 |
| *ENG T 231 - Foundations of Global Leadership                  | 3.0 |
| TECH 312 - Exploration in Innovation Design Techniques         | 1.0 |
| TES 125 - Communication Technologies and Systems               | 3.0 |
| TES 200 - Processes and Prototyping with Wood                  | 3.0 |
| TES 225 - Electronics for Technology and Engineering Teachers  | 3.0 |
| TES 229 - Processes and Manufacturing with Metals and Polymers | 3.0 |
| TES 255 - Visual Communication Design                          | 3.0 |
| TES 276A - Exploration of Teaching A                           | 3.5 |
| TES 276B - Exploration of Teaching B                           | 0.5 |
| TES 330 - Creativity, Engineering, and Problem Solving         | 3.0 |
| TES 340 - Principles of Technology and Engineering             | 3.0 |

**REQUIREMENT 2** Complete 4 courses

**COMPLETE FOUR REGISTRATIONS OF THE FOLLOWING (EXCEPT WHEN ENROLLED IN TES 476):**

|                                  |     |
|----------------------------------|-----|
| TES 291R - Undergraduate Seminar | 0.5 |
|----------------------------------|-----|

*You may take this course up to 4 times.*

**REQUIREMENT 3**

**TECHNICAL EMPHASIS ELECTIVES:**

*Complete 14 hours from one or more of the following areas: engineering (courses from engineering departments); technology (courses from the School of Technology); graphic design and multimedia (courses from Digital Humanities, Design, Communications); computer programming (courses from Computer Science department); business management, entrepreneurship, marketing (courses from Business Management department); non-core TES courses; or other courses with TES faculty approval. For specific courses, please visit [www.et.byu.edu/tte](http://www.et.byu.edu/tte) or contact the School of Technology advisement center in 250 SNLB.*

**REQUIREMENT 4** Complete 2 options

**PROFESSIONAL EDUCATION COMPONENT:**

*Licensure requirements: Contact the Education Advisement Center, 120 MCKB, 422-3426, to schedule the final interview to clear your application for the secondary teaching license. You should be registered for your last semester at BYU prior to the scheduled appointment.*

**OPTION 4.1** Complete 5 courses

|  |     |
|--|-----|
| CPSE 402 - Educating Students with Disabilities in Secondary Classroom | 2.0 |
| SC ED 353 - Multicultural Education for Secondary Education            | 2.0 |
| SC ED 375 - Adolescent Development and Classroom Management            | 3.0 |
| TES 377 - Teaching Methods in Technology Education                     | 2.0 |
| TES 378 - Practicum in Technology Education                            | 2.0 |

**Note: Fingerprinting and FBI clearance must be kept updated.**

**OPTION 4.2** Complete 12.0 hours from the following course(s)

|                                      |      |
|--------------------------------------|------|
| TES 476 - Secondary Student Teaching | 12.0 |
|--------------------------------------|------|

**Student teachers/interns must complete three forms in their LiveText accounts (PIBS, CDS, FED) and attach their TWS to the LiveText account for their program. All four must be completed to be cleared for graduation.**

**REQUIREMENT 5**

Complete department packet and exit interview.

**THE DISCIPLINE:**

Students graduating from the technology and engineering studies program at Brigham Young University are prepared to engage in a breadth of technology and engineering-related careers, become creators and builders of technology, pursue additional education through graduate studies, and provide technical training in industrial settings. In addition, students in the technology and engineering education emphasis are prepared to teach middle school and high school technology and engineering courses as designated by the Utah State Board of Education (<http://www.schools.utah.gov/cte/tech/>). Students in the program are required to take core courses in visual communications, production technologies, and the engineering design process. In addition, students will complete a series of depth courses designed to provide a conceptual understanding of engineering and technological systems, experiences in creativity and design, technological expertise, and pedagogy. Finally, students are provided with field-based experiences including

internships for TES general majors and a semester-long supervised student teaching experience for those pursuing teaching licensure.

**ACADEMIC QUALITY:**

*Facilities* - The department offers some of the most advanced and innovative technology education laboratories in the nation. Facilities in drafting, metalwork, woodwork, and multi-media are also comparable with the best in the nation.

*Special programs* - The department hosts a variety of special activities during the year, including workshops in technology education for teachers and administrators in secondary schools, colleges, and universities.

*Faculty expertise* - The department has 3 faculty members with a wide range of interests and expertise. Because of the broad scope of the program, it incorporates course work from other disciplines and integrates the expertise of University faculty.

Graduating majors commonly comment that the faculty are friendly and have personal interest in them as students and offer excellent program advisement. The faculty are involved in writing for professional journals and in making presentations at regional and national conventions.

**THE EXPERIENCE:**

*Pre-professional training* - Student teaching for careers in education.

**PROFESSIONAL AND HONOR SOCIETIES:**

Student chapter of Vocational Industrial Clubs of America (VICA) and Technology Education Collegiate Association (TECA).

**STUDENT TEACHING:**

Students are provided an opportunity to improve their teaching skills through a student teaching experience in the public secondary schools.

**FINANCING:**

Scholarships are available. Also a number of upperdivision

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2017-2018

students are hired as laboratory assistants and teaching assistants.

### **CAREER OPPORTUNITIES:**

The dramatic pace of technological innovation makes this a vital major. The current need for STEM professionals is excellent both in industry and in teaching. The degree provides a strong foundation for numerous technical and teaching-related careers, including corporate, grades 6-12, and higher education.

### Career Options for TES Graduates with Teaching Emphasis:

Secondary Education Teaching License from USBE: Technology and Engineering Education

### **GRADUATE SCHOOL:**

There will be an increasing need for technology educators at all levels. A Master's of Science degree is offered within the department.

### **MAP DISCLAIMER**

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

### **DEPARTMENT INFORMATION**

Technology and Engineering Studies  
School of Technology  
230 Snell Building  
Brigham Young University Provo, UT 84602  
Telephone: (801) 422-2021

### **ADVISEMENT CENTER INFORMATION**

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