

**Faculty**

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**Bachelor of Science Degree Requirements**

*Industrial Technology Major*      *Units*

**Major requirements ..... 68**

**Technical Core.....(29)**

IT 52, 74, 102, 104, 114, 115, 196, 199; DS 73; CHEM 3A

**Management Core ..... (18)**

IT 92, 107, 117, 118, 137, 148

**Specialty Area ..... (21)**

Consult with a department adviser to develop 21 units of electives to satisfy the “specialty” requirements. Electives should be chosen from the following list with adviser approval: IT 30, 41, 58, 63, 110, 112, 116, 120, 121, 122, 127, 129, 131, 133, 134, 144, 146, 147, 156, 164, 165, 177, 184, 190, 191T, 194.

*Emphases:*

- CAD/CAM Systems Management
- Industrial Control Systems Management
- Quality Systems Management
- Transportation Systems Management
- Networking Systems Management

**General Education requirements ..... 51**

(Includes 12 upper-division units, to be taken no sooner than the term in which 60 units of coursework are completed.)

**Additional requirements ..... 1**

Upper-division writing skills: Students must pass the Upper-Division Writing Exam or complete IT 198W (recommended); PHYS 2A, IT 20. (*Note:* PHYS 2A and IT 20 satisfy two G.E. area requirements [B1 and D3]. Consult the

*Class Schedule* for a current list of approved G.E. courses).

**Total units..... 120\***

\*This total indicates that PHYS 2A and IT 20 also may be applied to G.E. area requirements, and it presumes that the student has fulfilled the Upper-Division Writing Skills requirement by passing the Upper-Division Writing Exam for zero units. Contact the department chair or faculty adviser for additional details.

*Advising Notes*

1. All courses (except IT 194) required for the major must receive a letter grade.
2. Students must pass the upper-division writing exam or complete IT 198W with a grade of C or higher (to be taken no sooner than the term in which 60 units are completed) to fulfill the upper-division writing skills graduation requirement.

See the *General Catalog* Web Site for recommended program at [www.csufresno.edu/catoffice/current/industrec.html](http://www.csufresno.edu/catoffice/current/industrec.html).

**Industrial Technology Minor**

The Minor in Industrial Technology consists of 20 units of which 9 must be upper-division. At least 12 units must be taken in one of these specialized areas of study: CAD/CAM systems management, industrial control systems management, networking systems management, quality systems management, or transportation systems management.

*Note:* The Industrial Technology Minor also requires a 2.0 GPA and 6 upper-division units in residence.

**Certificate in Network Routing and Internetworking Technology**

The Certificate in Network Routing and Internetworking consists of 16 units in industrial technology courses. The student is required to take IT 58, 63, 164, and 165. In addition, 3 units must be selected from the following: IT 116, 146, 190, 194.

**Certificate in Computer Process Control Network Administration**

The Certificate in Computer Process Control Network Administration consists of 19 units in industrial technology coursework. The student is required to take IT 58, 112, 117, and 133. In addition, 3 units must be selected from the following: IT 116, 134, 156, 177, 190, or 194.

**Industry and Technology Teaching Credential Waiver Program**

The following course of study will prepare students for entry into the teacher education program. Students will complete the 120 unit requirement for the Bachelor of Science in Industrial Technology (BSIT) with teacher credentialing as their optional emphasis.

1. Complete the BSIT General Education requirement (51 units)
2. Complete the BSIT Technical Core (29 units)
3. Complete the BSIT Management Core (18 units)
4. Complete the Teacher Education Credential Core (15 units):  
IT 12, 30, 58, 80; EHD 50
5. Area of emphasis (6 units)  
Select one area of emphasis below and take a minimum of 6 units in that area.

- Engineering Design Technology: IT 41, 116, 144, 147, 177
- Communication Technology: IT 63, 103, 116, 146, 164, 165
- Manufacturing Technology: IT 112, 131, 133, 134, 156, 177, 184
- Power, Energy, and Transportation: IT 106, 110, 120, 122, 127, 129

6. Additional requirements (1 unit)

Upper-division writing skills as noted under the BSIT requirements.

**Master of Science Degree Requirements**

The Master of Science in Industrial Technology is a 30-unit program which offers graduate study in both industrial and educational related professional and technical fields. Emphasis is directed toward the attainment of advanced competency in the areas of industrial and technology education as well as manufacturing technology. Through selected courses, within the department and other disciplines, knowledge and experience can be acquired in research and development, management and administration, technological studies, and educational studies that are related to all areas of the field.

**Admission Requirements.** The Master of Science degree program in Industrial Technology assumes preparation equivalent to a CSU undergraduate major in technol-