

### **4.13 Technology Education (Grades 7-12)**

To be endorsed in technology education, an applicant shall hold an earned bachelor's or higher degree from an accepted institution of higher education; have completed an approved teacher preparation program including prescribed field experience and student teaching requirements; have completed an approved program in technology education; and have demonstrated the competencies specified below:

4.13(1) Knowledge: The beginning technology educator shall have:

- 4.13(1)(a) a basic understanding of the history of technology education and the historical development and trends of technology and technology education.
- 4.13(1)(b) extensive preparation in technology systems and processes and demonstrate applied knowledge with respect to the following areas:
  - 4.13(1)(b)(i) communication/information including verbal, written, graphic and electronic components;
  - 4.13(1)(b)(ii) transportation including power, energy and mechanical systems; and
  - 4.13(1)(b)(iii) production including construction, manufacturing, authoring, design and prototyping.
- 4.13(1)(c) additional preparation and demonstrated applied knowledge in the natural physical sciences, including environmental science, as used in technological systems and processes.
- 4.13(1)(d) additional preparation and demonstrated applied knowledge in mathematics as used in technological systems and processes.
- 4.13(1)(e) extensive preparation in the principles of contextual learning methodology.
- 4.13(1)(f) a knowledge and understanding of workforce preparation documents and employability skills and standards.
- 4.13(1)(g) a basic understanding of the principles of high-productivity organizations from business and industry.
- 4.13(1)(h) a basic understanding of the economic, political and legal consequences inherent within the application of technological systems and processes to our society.
- 4.13(1)(i) extensive preparation in application of the various tools accessible by students to facilitate improved self-learning.
- 4.13(1)(j) a basic understanding of the methodologies of research into projected developments and applications of emerging technologies.
- 4.13(1)(k) an understanding of good questioning skills and techniques to be used with students and peers to collect, organize and interpret information.
- 4.13(1)(l) the knowledge and understanding to organize and manage a student organization.

4.13(2) Performance: The beginning technology educator is able to:

- 4.13(2)(a) manage all student work areas in a safe and prudent manner and guide students in the safe use of tools, systems and processes in school-based and work-based learning sites.
  - 4.13(2)(b) guide students to become knowledgeable in:
    - 4.13(2)(b)(i) the application of academic concepts from math, science and communications as they apply to technological systems and processes;
    - 4.13(2)(b)(ii) the allocation of resources such as time, money, materials, facilities and human resources;
    - 4.13(2)(b)(iii) the acquisition, evaluation, organization, interpretation and communication of information related to technological systems and processes;
    - 4.13(2)(b)(iv) the selection and application of technology appropriate to tasks;
    - 4.13(2)(b)(v) the maintenance of systems of information, technology and records; and
    - 4.13(2)(b)(vi) the application of relevant conflict resolution techniques as applied to the workplace.
  - 4.13(2)(c) work as a team member in conjunction with academic and other occupational educators to develop systems that support learning across curricular disciplines.
  - 4.13(2)(d) demonstrate competency in the management of equipment, materials, supplies and people.
  - 4.13(2)(e) demonstrate good questioning skills and techniques to be used with students and peers to collect, organize and interpret information.
  - 4.13(2)(f) employ interpersonal and organizational skills to develop an ongoing working relationship with community business and industry partners.
  - 4.13(2)(g) communicate the possible career pathways for students entering an occupation in the communications, transportation, architecture, construction, manufacturing and environmental areas.
  - 4.13(2)(h) guide students in the use of communication technologies to research occupational clusters occupational opportunities.
  - 4.13(2)(i) guide students to develop problem-solving techniques or adopt problem-solving techniques from other sources.
  - 4.13(2)(j) demonstrate the proper use of tools, systems and processes appropriate to the course content with respect to the acceptable standards of business and industry.
  - 4.13(2)(k) construct individual and cooperative learning experiences which integrate school-based and work-based learning for students utilizing student-centered approaches.
  - 4.13(2)(l) reinforce the academic concepts by demonstrating their practical applications.
- 4.13(3) The technology educator shall self-assess the effectiveness of instruction based on the achievement of students and pursue continuous professional development through appropriate activities, coursework and participation in relevant professional organizations.