

Vermont Department of Education  
**CTE Program Competencies**  
Engineering 3 / 4  
CIP: 14.0101

**Occupational Skills**

The student demonstrates the specified level of competency in occupational skills:

0	1	2	3	4
No Exposure	Introduced	Practiced	Entry Level	Competency

Students will study and master core (\*) content standards and then select one of either Architectural Drawing or Mechanical Drawing.

**0 1 2 3 4**

**A. WORK PLACE BEHAVIORS**

- \*A.001 Maintain an acceptable attendance record.
- \*A.002 Work well independently, showing pride and interest in work assignments.
- \*A.003 Demonstrate aptitude for creativity.
- \*A.004 Plan and perform work accurately, neatly and efficiently.
- \*A.005 Show personal growth as a worker, evaluating own work.
- \*A.006 Follow directions from supervisors and are willing to ask questions for clarification.
- \*A.007 Develop good oral and written communication skills.
- \*A.008 Cooperate with co-workers and supervisors.
- \*A.009 Demonstrate teamwork as a contributing team member.
- \*A.010 Develop personal career goals.
- \*A.011 Demonstrates positive attitude toward work.

**B. SAFETY**

- \*B.001 Understands and applies safety requirements of the work place.
- \*B.002 Recognizes any unsafe working conditions and reports them to the supervisor, understanding ethical and safety issues involved.
- \*B.003 Follows proper hazardous material handling and disposal procedures, according to state and federal regulations.

**C. ARCHITECTURAL DRAWING**

- C.001 Identify various architectural styles.
- C.002 Properly locate house on and draw site plans.
- C.003 Properly layout and draw residential floor plans.
- C.004 Properly draw elevation views.
- C.005 Dimension architectural drawings as necessary.
- C.006 Construct 3 dimensional model of house.

**D. MECHANICAL DRAWING**

- D.001 Draws various threads and fasteners.
- D.002 Draws cams
- D.003 Draws springs.
- D.004 Draws gears.
- D.005 Draws detail drawings.
- D.006 Draws assemble drawings.
- D.007 Depicts shop processes in working drawings (casting, welds, etc.).
- D.008 Calculates tolerance limits and applies them to drawings.
- D.009 Demonstrates advanced dimensioning techniques (holes, tolerancing, etc.).

**PRINCIPLES OF TECHNOLOGY AND MATHEMATICS**

- ' ' ' ' ' \*A. Force, work, rate and resistance in mechanical systems
- ' ' ' ' ' \*B. Pressure, work, rate, and resistance in fluid systems
- ' ' ' ' ' \*C. Voltage, work, rate, and resistance in electrical systems
- ' ' ' ' ' \*D. Temperature, rate, and resistance in thermal systems
- ' ' ' ' ' \*E. Technical mathematics