

# Course Outline

Engineering and Architecture

REVISED: August/2017

**Job Title:**  
CAD Technician

**Career Pathway:**  
Engineering Design

**Industry Sector:**  
Engineering and Architecture

**O\*NET-SOC CODE:**  
17-3019.00

**CBEDS Title:**  
Technical Drafting

**CBEDS No.:**  
5705

**74-25-60**

## Blueprint Reading

**Credits:** 5

**Hours:** 90

### Course Description:

This competency-based course is designed for blueprint reading and provides students with project-based experiences in drafting and blueprint reading. Instruction includes principles and techniques used in basic drafting, dimensioning, and tolerance drafting. Emphasis is placed on the applications of sectional views, auxiliary views, revolutions, drafting references, and drawing types in drafting as well as in the reading and interpretation of blueprints. The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

### Prerequisites:

None.

**NOTE:** For Perkins purposes this course has been designated as an **introductory** course.

This course cannot be repeated once a student receives a Certificate of Completion.



## **COURSE OUTLINE COMPETENCY-BASED COMPONENTS**

A course outline reflects the essential intent and content of the course described. Acceptable course outlines have six components. (Education Code Section 52506). Course outlines for all apportionment classes, including those in jails, state hospitals, and convalescent hospitals, contain the six required elements:

(EC 52504; 5CCR 10508 [b]; Adult Education Handbook for California [1977], Section 100)

### **COURSE OUTLINE COMPONENTS**

### **LOCATION**

#### **GOALS AND PURPOSES**

Cover

The educational goals or purposes of every course are clearly stated and the class periods are devoted to instruction. The course should be broad enough in scope and should have sufficient educational worth to justify the expenditure of public funds.

The goals and purpose of a course are stated in the COURSE DESCRIPTION. Course descriptions state the major emphasis and content of a course, and are written to be understandable by a prospective student.

#### **PERFORMANCE OBJECTIVES OR COMPETENCIES**

pp. 7-12

Objectives should be delineated and described in terms of measurable results for the student and include the possible ways in which the objectives contribute to the student's acquisition of skills and competencies.

Performance Objectives are sequentially listed in the COMPETENCY-BASED COMPONENTS section of the course outline. Competency Areas are units of instruction based on related competencies. Competency Statements are competency area goals that together define the framework and purpose of a course. Competencies fall on a continuum between goals and performance objectives and denote the outcome of instruction.

Competency-based instruction tells a student before instruction what skills or knowledge they will demonstrate after instruction. Competency-based education provides instruction which enables each student to attain individual goals as measured against pre-stated standards.

Competency-based instruction provides immediate and continual repetition and In competency-based education the curriculum, instruction, and assessment share common characteristics based on clearly stated competencies. Curriculum, instruction and assessment in competency-based education are: explicit, known, agreed upon, integrated, performance oriented, and adaptive.

**COURSE OUTLINE COMPETENCY-BASED COMPONENTS**  
**(continued)**

<b>COURSE OUTLINE COMPONENTS</b>	<b>LOCATION</b>
<b>INSTRUCTIONAL STRATEGIES</b>	p. 14
<p>Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom.</p> <p>Instructional strategies for this course are listed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructional strategies and activities for a course should be selected so that the overall teaching approach takes into account the instructional standards of a particular program, i.e., English as a Second Language, Programs for Adults with Disabilities.</p>	
<b>UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT</b>	Cover
<p>The approximate time devoted to each instructional unit within the course, as well as the total hours for the course, is indicated. The time in class is consistent with the needs of the student, and the length of the class should be that it ensures the student will learn at an optimum level.</p> <p>Units of study, with approximate hours allotted for each unit are listed in the COMPETENCY AREA STATEMENT(S) of the course outline. The total hours of the course, including work-based learning hours (community classroom and cooperative vocational education) is listed on the cover of every CBE course outline. Each Competency Area listed within a CBE outline is assigned hours of instruction per unit.</p>	
<b>EVALUATION PROCEDURES</b>	pp. 14-15
<p>The evaluation describes measurable evaluation criteria clearly within the reach of the student. The evaluation indicates anticipated improvement in performances as well as anticipated skills and competencies to be achieved.</p> <p>Evaluation procedures are detailed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructors monitor students' progress on a continuing basis, assessing students on attainment of objectives identified in the course outline through a variety of formal and informal tests (applied performance procedures, observations, and simulations), paper and pencil exams, and standardized tests.</p>	
<b>REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT</b>	Cover
<p>After a student has completed all the objectives of the course, he or she should not be allowed to reenroll in the course. There is, therefore, a need for a statement about the conditions for possible repetition of a course to prevent perpetuation of students in a particular program for an indefinite period of time.</p>	

## **ACKNOWLEDGMENTS**

Thanks to ALEJANDRA SALCEDO and LUZ GRANADOS for developing and editing this curriculum. Acknowledgment is also given to ERICA ROSARIO for designing the original artwork in the course cover designs.

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# **CALIFORNIA CAREER TECHNICAL EDUCATION MODEL CURRICULUM STANDARDS**

## ***Engineering and Design Industry Sector***

### ***Knowledge and Performance Anchor Standards***

#### **1.0 Academics**

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Engineering and Architecture academic alignment matrix for identification of standards.

#### **2.0 Communications**

Acquire and accurately use Engineering and Architecture sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

#### **3.0 Career Planning and Management**

Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

#### **4.0 Technology**

Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Engineering and Architecture sector workplace environment.

#### **5.0 Problem Solving and Critical Thinking**

Conduct short, as well as more sustained research projects to create alternative solutions to answer a question or solve a problem unique to the Engineering and Architecture sector using critical and creative thinking; logical reasoning, analysis, inquiry, and problem-solving techniques.

#### **6.0 Health and Safety**

Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Engineering and Architecture sector workplace environment pertaining to the Occupational Safety and Health Administration (OSHA).

#### **7.0 Responsibility and Flexibility**

Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Engineering and Architecture sector workplace environment and community settings.

#### **8.0 Ethics and Legal Responsibilities**

Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

#### **9.0 Leadership and Teamwork**

Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the SkillsUSA career technical student organization.

#### **10.0 Technical Knowledge and Skills**

Apply essential technical knowledge and skills common to all pathways in the Engineering and Architecture sector, following procedures when carrying out experiments or performing technical tasks.

#### **11.0 Demonstration and Application**

Demonstrate and apply the knowledge and skills contained in the Engineering and Architecture anchor standards, pathway standards, and performance indicators in classroom, laboratory and workplace settings, and through the SkillsUSA career technical student organization.

## ***Engineering and Architecture Pathway Standards***

### **C. Engineering Design Pathway**

The Engineering Design pathway provides learning opportunities for students interested in preparing for careers in the design and production of visual communications.

Sample occupations associated with this pathway:

- ◆ Mechanical/Electrical Drafter
- ◆ Design Engineer
- ◆ Manufacturing Design Engineer
- ◆ Project Architect

C1.0 Understand historical and current events related to engineering design and their effects on society.

C2.0 Understand the effective use of engineering design equipment.

C3.0 Understand the sketching process used in concept development.

C4.0 Understand measurement systems as they apply to engineering design.

C5.0 Use proper projection techniques to develop orthographic drawings.

C6.0 Understand the applications and functions of sectional views.

C7.0 Understand the applications and functions of auxiliary views.

C8.0 Understand and apply proper dimensioning standards to drawings.

C9.0 Understand the tolerance relationships between mating parts.

C10.0 Understand the methods of applying text to a drawing.

C11.0 Understand the methods of creating both written and digital portfolios.

**CBE**  
**Competency-Based Education**

**COMPETENCY-BASED COMPONENTS**  
**for the Blueprint Reading Course**

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>A. ORIENTATION AND SAFETY</p> <p>Understand, apply, and evaluate classroom and workplace policies and procedures used in accordance with federal, state, and local safety and environmental regulations.</p> <p>(2 hours)</p>	<ol style="list-style-type: none"> <li>1. Describe the scope and purpose of the course.</li> <li>2. Describe the overall course content as a part of the Linked Learning Initiative.</li> <li>3. Describe classroom policies and procedures.</li> <li>4. Identify classroom and workplace first aid and emergency procedures based on the American Red Cross (ARC) standards.</li> <li>5. Describe the different occupations in the Engineering and Design Industry Sector which have an impact on the role of blueprint readers.</li> <li>6. Describe the opportunities available for promoting gender equity and the representation of non-traditional populations in blueprint reading.</li> <li>7. Explain the impact of Environmental Protection Agency (EPA) legislation on Engineering and Design Industry Sector practices in protecting and preserving the environment.</li> <li>8. Describe and demonstrate the procedures for contacting proper authorities for the removal of hazardous materials based on the EPA standards.</li> <li>9. Describe and demonstrate the use of the Material Safety Data Sheet (MSDS) as it applies to blueprint reading.</li> <li>10. Describe the provisions of the California Title 24 Energy Efficiency Standards (a.k.a. 2008 California Green building Standards Code) as they relate to the Engineering and Design Industry Sector.</li> <li>11. Describe the California Occupational Safety and Health Administration (Cal/OSHA) and its laws governing blueprint reading.</li> <li>12. Describe how each of the following insures a safe workplace:               <ol style="list-style-type: none"> <li>a. employees' rights as they apply to job safety</li> <li>b. employees' obligations as they apply to safety</li> <li>c. safety laws applying to electrical tools</li> </ol> </li> <li>13. Pass the safety test with 100% accuracy.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 5, 12</p> <p><b>CTE Anchor:</b> Communications: 2.5 Career Planning and Management: 3.4 Problem Solving and Critical Thinking: 5.2, 5.4 Health and Safety: 6.1, 6.2, 6.7</p> <p><b>CTE Pathway:</b> C1.0, C2.0, C3.0, C4.0, C5.0, C6.0, C7.0, C8.0, C9.0</p>
<p>B. BASIC DRAFTING TECHNIQUES</p> <p>Understand, apply, and evaluate basic drafting techniques.</p>	<ol style="list-style-type: none"> <li>1. Define the following:           <ol style="list-style-type: none"> <li>a. orthographic projections</li> <li>b. isometric drawings</li> <li>c. dimensioning</li> <li>d. pictorial drawing</li> </ol> </li> </ol>	<p><b>Career Ready Practice:</b> 2</p> <p><b>CTE Anchor:</b> Communications: 2.5</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 hours)	<ol style="list-style-type: none"> <li>2. Identify and describe the following:               <ol style="list-style-type: none"> <li>a. purpose of dimensioning</li> <li>b. purpose of pictorial drawing</li> </ol> </li> <li>3. Describe and demonstrate general drafting practices.</li> </ol>	Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1  <b>CTE Pathway:</b> C2.1, C2.2, C2.3, C10.1, C10.2, C10.3, C10.4
<p>C. DIMENSIONING</p> <p>Understand, apply, and evaluate dimensioning techniques on drawings.</p> <p>(5 hours)</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ol style="list-style-type: none"> <li>a. unidirectional dimensioning</li> <li>b. aligned dimensions</li> <li>c. decimal dimensions</li> <li>d. baseline dimensions</li> <li>e. tabular dimensions</li> </ol> </li> <li>2. Describe and demonstrate the following:               <ol style="list-style-type: none"> <li>a. adding unidirectional (Mil-Std. 8B) dimensioning to an object</li> <li>b. adding aligned dimensions to an object</li> <li>c. adding decimal dimensions to an object</li> <li>d. adding baseline dimensions to an object</li> <li>e. adding tabular dimensions to an object</li> </ol> </li> </ol>	<b>Career Ready Practice:</b> 2  <b>CTE Anchor:</b> Communications: 2.5 Health and Safety: 6.4 Technical Knowledge and Skills: 10.1, 10.3 Demonstration and Application: 11.1  <b>CTE Pathway:</b> C4.1, C4.2, C8.1, C8.2
<p>D. TOLERANCE</p> <p>Understand, apply, and evaluate the importance of tolerance drafting.</p> <p>(5 hours)</p>	<ol style="list-style-type: none"> <li>1. Define tolerance.</li> <li>2. Describe the following:               <ol style="list-style-type: none"> <li>a. need for tolerance allowances in drafting</li> <li>b. limits on how tolerances should be set</li> <li>c. specialized terminology used in setting tolerances</li> <li>d. different classes of fit – American Standards Association (ASA) Standard</li> </ol> </li> <li>3. Describe and demonstrate the following:               <ol style="list-style-type: none"> <li>a. proper tolerance notations on drawings</li> <li>b. proper tolerance locations on drawings</li> </ol> </li> </ol>	<b>Career Ready Practice:</b> 2  <b>CTE Anchor:</b> Communications: 2.5 Technical Knowledge and Skills: 10.1  <b>CTE Pathway:</b> C9.1, C9.2, C9.3

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>E. SECTIONAL VIEWS</p> <p>Understand and apply sectional view in drafting.</p> <p>(10 hours)</p>	<ol style="list-style-type: none"> <li>1. Define sectional views.</li> <li>2. Describe the following:               <ol style="list-style-type: none"> <li>a. types of sectional views</li> <li>b. applications for sectional views</li> <li>c. conventional breaks</li> <li>d. use of rotation in sectional views</li> </ol> </li> <li>3. Describe and demonstrate drawing sectional views by hand.</li> </ol>	<p><b>Career Ready Practice:</b> 2</p> <p><b>CTE Anchor:</b> Communications: 2.5 Technical Knowledge and Skills; 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> C6.1, C6.2</p>
<p>F. AUXILIARY VIEWS</p> <p>Understand and apply auxiliary view in drafting.</p> <p>(10 hours)</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ol style="list-style-type: none"> <li>a. auxiliary views</li> <li>b. secondary auxiliary views</li> </ol> </li> <li>2. Identify and describe the following:               <ol style="list-style-type: none"> <li>a. applications for auxiliary views</li> <li>b. use of secondary auxiliary views</li> </ol> </li> <li>3. Draw an object using an auxiliary view.</li> </ol>	<p><b>Career Ready Practice:</b> 2</p> <p><b>CTE Anchor:</b> Communications: 2.5 Technical Knowledge and Skills; 10.1 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> C7.1, C7.2</p>
<p>G. REVOLUTIONS</p> <p>Understand, apply, and evaluate the proper use of revolutions.</p>	<ol style="list-style-type: none"> <li>1. Define the following:               <ol style="list-style-type: none"> <li>a. revolution</li> <li>b. axis of revolution</li> </ol> </li> <li>2. Describe the following:               <ol style="list-style-type: none"> <li>a. function of revolutions</li> <li>b. use of successive revolutions</li> </ol> </li> <li>3. Draw various objects with revolutions.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2</p> <p><b>CTE Anchor:</b> Communications: 2.5 Technical Knowledge and Skills; 10.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 hours)		Demonstration and Application: 11.1  <b>CTE Pathway:</b> C4.2, C5.4, C5.5
<b>H. DRAFTING REFERENCES</b>  Understand, apply, and evaluate various drafting references used in the Engineering and Design industry.  (5 hours)	<ol style="list-style-type: none"> <li>1. Identify the following:               <ol style="list-style-type: none"> <li>a. types of drafting references available</li> <li>b. types of trade publications</li> <li>c. types of web-based drafting references</li> </ol> </li> <li>2. Identify and describe the functions of the following:               <ol style="list-style-type: none"> <li>a. American National Standards Institute (ANSI) publications</li> <li>b. American Institute of Architects (AIA) drawing and design standards</li> <li>c. Military (MS) publication applications</li> </ol> </li> </ol>	<b>Career Ready Practice:</b> 2  <b>CTE Anchor:</b> Communications: 2.5  <b>CTE Pathway:</b> C1.1, C1.2
<b>I. DRAWING TYPES</b>  Understand, apply, and evaluate the different drawing types used in drafting.  (15 hours)	<ol style="list-style-type: none"> <li>1. Define the following:               <ol style="list-style-type: none"> <li>a. working drawing</li> <li>b. assembly drawing</li> </ol> </li> <li>2. Describe and demonstrate the following by hand and utilizing CAD techniques:               <ol style="list-style-type: none"> <li>a. drawing a working drawing</li> <li>b. drawing a pictorial assembly drawing</li> <li>c. drawing an orthographic assembly drawing</li> <li>d. drawing an isometric drawing</li> </ol> </li> </ol>	<b>Career Ready Practice:</b> 2  <b>CTE Anchor:</b> Communications: 2.5 Demonstration and Application: 11.1  <b>CTE Pathway:</b> C10.4
<b>J. BLUEPRINT READING</b>  Understand, apply, and evaluate how to read basic blueprints.	<ol style="list-style-type: none"> <li>1. Define the following:               <ol style="list-style-type: none"> <li>a. blueprint</li> <li>b. scale</li> <li>c. sketches</li> <li>d. plans</li> <li>e. shop drawings</li> <li>f. elevation</li> <li>g. section</li> <li>h. details</li> <li>i. specifications</li> </ol> </li> <li>2. Describe the following as they apply to blueprints:               <ol style="list-style-type: none"> <li>a. sketches</li> <li>b. plans</li> <li>c. shop drawings</li> <li>d. elevation</li> </ol> </li> </ol>	<b>Career Ready Practice:</b> 1, 2, 5  <b>CTE Anchor:</b> Communications: 2.5 Demonstration and Application: 11.1  <b>CTE Pathway:</b> C1.2, C3.1, C4.1, C4.2, C5.3, C6.1, C7.1, C8.1, C9.2

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(25 hours)	<ul style="list-style-type: none"> <li>e. sections</li> <li>f. details</li> </ul> <p>3. Define/identify and describe the following:</p> <ul style="list-style-type: none"> <li>a. four information blocks <ul style="list-style-type: none"> <li>i. title block</li> <li>ii. change block</li> <li>iii. notes</li> </ul> </li> <li>b. views or projections</li> <li>c. types of lines <ul style="list-style-type: none"> <li>i. outline or visible</li> <li>ii. section</li> <li>iii. hidden</li> <li>iv. center</li> <li>v. dimension</li> <li>vi. cutting plane</li> <li>vii. break lines</li> </ul> </li> <li>d. dimension using the following terms: <ul style="list-style-type: none"> <li>i. fractional</li> <li>ii. decimal</li> <li>iii. angular</li> </ul> </li> <li>e. tolerance using the following terms: <ul style="list-style-type: none"> <li>i. fractional</li> <li>ii. decimal</li> <li>iii. angular</li> </ul> </li> <li>f. symbols and abbreviations used in blueprint reading</li> </ul> <p>4. Describe and demonstrate the following:</p> <ul style="list-style-type: none"> <li>a. drawing a blueprint for a simple object</li> <li>b. drawing a simple object at 1/8 the scale</li> <li>c. drawing a simple object at 1/4 the scale</li> <li>d. drawing a simple object at triple the scale (3X)</li> <li>e. drawing a simple object at half the scale (1/2X)</li> <li>f. calculating area of an object using the dimensions from a blueprint</li> <li>g. distinguishing different types of specifications found in blueprints</li> </ul>	
<p>K. EMPLOYABILITY SKILLS</p> <p>Understand, apply, and evaluate the employability skills required in the computer drafting field.</p>	<ul style="list-style-type: none"> <li>1. Summarize employer requirements for the following: <ul style="list-style-type: none"> <li>a. punctuality</li> <li>b. attendance</li> <li>c. attitude toward work</li> <li>d. quality of work</li> <li>e. teamwork</li> <li>f. responsibility</li> <li>g. timeliness</li> <li>h. communication skills</li> </ul> </li> <li>2. Identify potential employers through traditional and internet sources.</li> <li>3. Describe the role of social media in job search.</li> </ul>	<p><b>Career Ready Practice:</b> 2</p> <p><b>CTE Anchor:</b> Communications: 2.5</p> <p><b>CTE Pathway:</b> C11.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(3 hours)	<ol style="list-style-type: none"> <li>4. Design sample résumés and cover letters.</li> <li>5. Describe the importance of filling out a job application legibly, with accurate and complete information.</li> <li>6. Describe the common mistakes that are made on job applications.</li> <li>7. Complete sample job application forms correctly.</li> <li>8. State the importance of enthusiasm in the interview and on a job.</li> <li>9. State the importance of appropriate appearance in the interview and on a job.</li> <li>10. State the importance of the continuous upgrading of job skills.</li> <li>11. Describe customer service as a method of building permanent relationships between the organization and the customer.</li> <li>12. Describe and demonstrate appropriate interviewing techniques.</li> <li>13. Identify the informational materials and resources needed to be successful in an interview.</li> <li>14. Design sample follow-up letters.</li> <li>15. Describe and demonstrate appropriate follow-up procedures.</li> </ol>	

## ***SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES***

### **TEXTBOOKS**

Bennett, A.E. and Louis J. Sily. Blueprint Reading for Welders, 8<sup>th</sup> Edition. Cengage Learning, 2010.

Duval, Concetta and Joe Larkin. Practical Problems in Mathematics for Drafting and CAD, 4<sup>th</sup> Edition. Cengage Learning, 2012.

Joyce, Michael A. Blueprint Reading and Drafting for Plumbers, 2<sup>nd</sup> Edition. Cengage Learning, 2009.

Kubba, Sam. Blueprint Reading: Construction Drawings for the Building Trades. McGraw-Hill Companies, 2008.

Thomas P. Olivo and C. Thomas Olivo. Basic Blueprint and Sketching, 9<sup>th</sup> Edition. Cengage Learning, 2010.

Schultz, Russ and Larry Smith. Blueprint Reading for the Machine Trades, 6<sup>th</sup> Edition. Prentice Hall, 2008.

Taylor, David L. Elementary Blueprint Reading for Machinists, 5<sup>th</sup> Edition. Cengage Learning, 2003.

Warren Hammer. Blueprint Basics: Manufacturing Print Reading, 3<sup>rd</sup> Edition. Industrial Press, Inc., 2001.

### **RESOURCES**

Employer Advisory Board members

CTE Model Curriculum Standards

<http://www.cde.ca.gov/ci/ct/sf/documents/enginearchit.pdf>

[Accrediting Commission of Career Schools and Colleges of Technology \(ACCCT\)](#), 2101 Wilson Blvd., Suite 302, Arlington, VA 22201. Phone: (703) 247-4212. Fax: (703) 247-4533.

[American Design Drafting Association \(ADDA\)](#), 105 E. Main St., Newbern, TN 38059. Phone: (731) 627-0802. Fax: (731) 627-9321.

### **COMPETENCY CHECKLIST**

## ***TEACHING STRATEGIES and EVALUATION***

### **METHODS AND PROCEDURES**

- A. Lecture and discussion
- B. Multimedia presentations
- C. Demonstrations and participations
- D. Individualized instruction
- E. Peer teaching
- F. Role-playing
- G. Guest speakers
- H. Field trips and field study experiences
- I. Projects

### **EVALUATION**

SECTION A – Orientation and Safety – Pass the safety test with 100% accuracy.

SECTION B – Basic Drafting Techniques – Pass all assignments and exams on basic drafting techniques with a minimum score of 80% or higher.

SECTION C – Dimensioning – Pass all assignments and exams on dimensioning with a minimum score of 80% or higher.

SECTION D – Tolerance – Pass all assignments and exams on tolerance with a minimum score of 80% or higher.

SECTION E – Sectional Views – Pass all assignments and exams on sectional views with a minimum score of 80% or higher.

SECTION F –Auxiliary Views – Pass all assignments and exams on auxiliary views with a minimum score of 80% or higher.

SECTION G – Revolutions – Pass all assignments and exams on revolutions with a minimum score of 80% or higher.

SECTION H – Drafting References – Pass all assignments and exams on drafting references with a minimum score of 80% or higher.

SECTION I – Drawing Types – Pass all assignments and exams on drawing types with a minimum score of 80% or higher.

SECTION J – Blueprint Reading – Pass all assignments and exams on blueprint reading with a minimum score of 80% or higher.

SECTION K –Employability Skills – Pass all assignments and exams on employability skills with a minimum score of 80% or higher.

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### Statement for Civil Rights

All educational and vocational opportunities are offered without regard to race, color, national origin, gender, or physical disability.

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