

COMPUTER-AIDED DESIGN: MECHANICAL (90 Hours)

Course No.: 74-25-80

COMPETENCY CHECKLIST

Student Name _____

Teacher Name _____ School Site _____

Start Date _____ Completion Date _____ Certificate Date _____

Teacher Signature _____ Student Signature _____

(Signatures verify completion of course competencies)

A. **ORIENTATION AND SAFETY** (3 hrs)

- _____ 1. Scope and purpose of course
- _____ 2. Course content as part of Linked Learning
- _____ 3. Classroom policies and procedures
- _____ 4. Class/workplace emergency procedures
- _____ 5. Industry occupations with impact on CAD
- _____ 6. Opportunities for gender equity
- _____ 7. EPA legislation and engineering industry
- _____ 8. EPA standards for hazardous waste disposal
- _____ 9. MSDS as it applies to mechanical CAD
- _____ 10. Title 24 as they relate to industry
- _____ 11. OSHA rules and regulations for industry
- _____ 12. Responsibilities to insure a safe workplace
- _____ 13. Pass safety test

B. **RESOURCE MANAGEMENT REVIEW** (1 hr)

- _____ 1. Review listed terms related to topic
- _____ 2. Importance of managing resources in CAD
- _____ 3. Examples of effective management
- _____ 4. Benefits of effective resource management
- _____ 5. Economic/environmental benefits/liabilities

C. **CAD INTRODUCTION** (5 hrs)

- _____ 1. CAD file management basics/commands
- _____ 2. Use of absolute & relative coordinates
- _____ 3. Demonstrate basic CAD techniques
- _____ 4. Pass quiz on intro concepts/commands

D. **TRADE MATHEMATICS** (3 hrs)

- _____ 1. Complete pre-test to assess basic math skills
- _____ 2. Basic whole #, fraction, & decimal problems
- _____ 3. Complex fraction, exponent, & power/roots
- _____ 4. Metric, geometry, & pre-algebra ratio/scale
- _____ 5. Pass quiz on applied math review

E. **MECHANICAL TERMINOLOGY, DRAFTING STANDARDS AND METHODS** (20 hrs)

- _____ 1. Design as essential to creative process

- _____ 2. ANSI Standards for listed items
- _____ 3. Features/functions of listed items
- _____ 4. Discuss & demo listed techniques
- _____ 5. Pass quiz on terms, standards, & methods

F. **COMPUTER FUNDAMENTALS** (15 hrs)

- _____ 1. Identify/discuss listed items
- _____ 2. Project documentation/file management
- _____ 3. Pass quiz on computer fundamentals

G. **CAD BASICS** (15 hrs)

- _____ 1. Draw tool/Modify tool menus & program
- _____ 2. Demo modification techniques
- _____ 3. Pass quiz on mechanical CAD basics

H. **INTERMEDIATE CAD** (15 hrs)

- _____ 1. Discuss & demo listed techniques
- _____ 2. Pass quiz on intermediate mechanical CAD

I. **ADVANCED CAD** (10 hrs)

- _____ 1. Demo listed techniques related to topic
- _____ 2. Pass quiz on advance mechanical CAD

J. **EMPLOYABILITY SKILLS REVIEW** (3 hrs)

- _____ 1. Employer requirements in an employee
- _____ 2. Identify potential employers in job search
- _____ 3. Electronic social networking in the job search
- _____ 4. Finalize résumé and cover letters
- _____ 5. Accurate/legible/complete job application
- _____ 6. Common mistakes made on job application
- _____ 7. Sample job application
- _____ 8. Enthusiasm for job
- _____ 9. Appropriate appearance on job
- _____ 10. Continuous upgrading of job skills
- _____ 11. Customer service to build business
- _____ 12. Appropriate interview techniques
- _____ 13. Resources to use for successful interview
- _____ 14. Sample follow-up interview letters
- _____ 15. Appropriate follow-up procedures