**I.** **COURSE** **TITLE**: Technical Drawing

**COURSE** **NUMBER**: 2235 **CATALOG** **PREFIX**: ENDS

**II.**  **PREREQUISITES**: ENDS 1142 or equivalent

**COREQUISITE**: None

**III.** **CREDIT** **HOURS**: 3 **LECTURE** **HOURS**: 3

**LABORATORY** **HOURS**: 0 **OBSERVATION** **HOURS**: 0

**IV.** **COURSE** **DESCRIPTION**:

Students learn to draft illustrations of machine parts, exploded pictorial assemblies, parts catalogs, plant layouts, and elevations. The use of color and shading are introduced. Pictorial drawings combine elements of both technical and artistic drawing to convey all the information necessary to be used as guides by people involved in manufacturing, maintenance, or sales where a complex part or process would be difficult to visualize when only orthographic views are given. Technical illustration is an important communication skill.

**V.** **ADOPTED** **TEXT**:

TECHNICAL DRAWING

By: Goetsch, Chalk, and Rickman

7th edition, 2015, Cengage

ISBN: 978-1-285-17301-6

Technical Illustration Workbook

By: Earle

2001, Creative Publishing

ISBN: 978-0-932702-65-4

**VI.** **COURSE** **OBJECTIVES**:

* + To reinforce the student’s spatial visualization ability.
  + Student will explain the purpose of pictorial drawings and their advantages.
  + Demonstrate proficiency in developing oblique drawings, including cabinet and cavalier.
  + Demonstrate proficiency in developing isometric drawings.
  + Demonstrate proficiency in drawing circles, curves, and irregular shapes in isometric and
  + on flat and inclined surfaces.
  + Demonstrate proficiency in developing one-, two-, and three-point perspective drawings.
  + Illustrate partial auxiliary views and enlarged auxiliary views.
  + Describe the use of rendering to give better shape description than orthographic methods.
  + Demonstrate proficiency in creating technical illustrations.

**VII.** **COURSE METHODOLOGY:**

Course Methodology is at the discretion of the instructor. The course material will be primarily delivered through the lecture/discussion method. Lecture experiences are included as well as hands-on demonstrations and in-class work.

**VIII. GRADING**:

Grading will follow the policy in the catalog. Typically, grading will be based on the

following:

100 – 90 = A

89 – 80 = B

79 – 70 = C

69 – 60 = D

59 – 0 = F

**IX.** **COURSE** **OUTLINE**:

WEEK: MATERIAL:

1. INTRODUCTION. APPLICATIONS AND CAREERS. TOOLS. TECHNIQUES.

PURPOSE OF PICTORIAL DRAWINGS. ADVANTAGES.

2. OBLIQUE DRAWINGS.

CYLINDERS ANGLES CURVES IN OBLIQUE DRAWINGS.

3. CONSTRUCTING OBLIQUE DRAWINGS.

TEST ONE.

4. ISOMETRIC DRAWINGS.

MAKING ISOMETRIC DRAWINGS.

5. OFFSET MEASUREMENTS.

NONISOMETRIC LINES.

6. BOX CONSTRUCTION FOR IRREGULAR OBJECTS.

TEST TWO.

7. HIDDEN LINES AND ISOMETRIC CURVES.

ISOMETRIC CIRCLES AND ARCS. ELLIPSE TEMPLATES.

8. DRAW APPROXIMATE ISOMETRIC CIRCLES.

TEST THREE.

9. ISOMETRIC DIMENSIONING.

ISOMETRIC ROUNDS AND FILLETS.

10. ISOMETRIC SCREW THREADS AND SPHERES.

AXONOMETRIC: DRAWING AND PROJECTION.

11. OTHER OBLIQUE DRAWINGS: CAVALIER, CABINET, GENERAL OBLIQUE.

TEST FOUR.

12. PERSPECTIVE DRAWINGS.

COMPUTER-GENERATED 3D PICTORIALS AND MODELS.

13. MANUAL SHADING AND RENDERING TECHNIQUES.

APPLICATIONS AND PRODUCTION. MANUALS. PUBLICATIONS.

14. COMPOSITION AND DESIGN IN ILLUSTRATION.

SPECIALIZED DRAWING TECHNIQUES FOR TECHNICAL MANUALS. COPYRIGHT AND TRADEMARK PRINCIPLES.

15. PRINCIPLES AND ELEMENTS OF DESIGN.

THE PRODUCTION PROCESS USED IN PUBLISHING, THE EFFECTS.

**X.** **OTHER** **REQUIRED** **BOOKS, SOFTWARE,** **AND** **MATERIALS**:

Scientific calculator, graph paper, compass, protractor, and a graduated scale, typical drafting equipment.

Students will be assigned sufficient problems from this workbook for a one semester college course in technical illustration:

TECHNICAL ILLUSTRATION Workbook

Earle, James H.

Creative Publishing Company

ISBN 0-932702-63-5

**XI.** **EVALUATION**:

Assignments will be evaluated according to instructor directives.

Typically: The grade will be determined by periodic examination, comprehensive final examination, homework, participation, and reports.

Assignments are due on time. Late assignments penalized 10% per class period.

Typical weight assigned:

CLASS ATTENDANCE = 5%

QUIZZES = 5%

ASSIGNMENTS = 40%

DRAFTING STANDARDS REPORTS = 10%

PERIODIC EXAMINATION (TESTS) = 15%

COMPREHENSIVE FINAL EXAM = 25%

or discretion of instructor, furnished to students at the beginning of the course.

**XII.** **SPECIFIC** **MANAGEMENT** **REQUIREMENTS**:

Class attendance and participation are strongly recommended.

**XIII. OTHER INFORMATION:**

**FERPA:** Students need to understand that your work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes.

Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

**DISABILITIES:** Students with disabilities may contact the Disabilities Service Office, Central Campus, at 800-628-7722 or 937-393-3431.