

**THREE RIVERS COMMUNITY COLLEGE
COURSE OUTLINE**

Course Number/Title: MEC K153 FUNDAMENTALS OF ENGINEERING GRAPHICS LAB.

Lecture ____ hrs. Laboratory 5 hrs. Credit 2 Contact 5 hrs.

Course Description: The laboratory course utilizes practical applications and appropriate problem solving utilizing standard drafting board and some computer-aided drafting practices. These demonstrate the ANSI drafting industry standards in producing orthographic, isometric and oblique drawings and sketches. Descriptive geometry applications will be appropriately covered. The student will be able to produce drawings using standard board drafting instruments, scales, and tools. Computer-Aided-Drafting techniques will be used to correlate and understanding between the meanings of the standards and the ease with which CAD draws some problems.

Method: Demonstrations, exercises, and graphic problems

Text: Engineering Design Graphics; James H. Earle; Prentice Hall

Prerequisites: MAT K095 or Higher Co-requisites: MEC K152

COURSE TOPICS/CONTENT

	HOURS
1. Graphic Instruments Use in Constructing Points, Lines, and Circles	2
2. Lettering Styles, Sizes, and Use	2
3. Applied Geometric Construction	10
4. Application of Orthographic Projection in Sketching and Drawing	15
5. Application of Dimensioning and Tolerancing According to American National Standards Institute (ANSI)	8
6. Construction of Auxiliary Views	8
7. Construction of Sectional Views	8
8. Sketching and Construction of the Three-Dimension Pictorials, Oblique, Isometric, and Technical Illustration	8
9. Working Drawing	14

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Continuation Sheet 2 of 2

Course Number/Title: MEC K153 Fundamentals of Engineering Graphics Laboratory

Measurable Objectives

The student will be able to:

1. Use graphic instruments and scales
2. Draw arc, circles, ellipses, and reverse curves
3. Draw line divisions and tangent lines
4. Draw projection points and lines
5. Draw perpendicular and angled lines
6. Bisect lines and angles
7. Measure lines, arcs, circles, and angles
8. Understand the correlation between Standard board drafting and CAD

The student will be able to according to the ANSI standards:

1. Set up standard drawings
2. Use various lettering types and sizes
3. Dimension using tolerancing practices drawings
4. Draw using the alphabet of lines
5. Arrange and select orthographic projection views
6. Complete missing lines and views of drawings
7. Draw orthographic views
8. Draw auxiliary and sectional views
9. Draw isometric and oblique drawings
10. Draw multi-view drawings
11. Sketch various types of drawings
12. Prepare a working drawing