Northwest State Community College  
Course Information Sheet

# Course Information

Title: Print Reading & Sketching B

Course Number: INT 108

Credit Hours: 1

Pre-requisite: INT 107

# Description

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 107. Emphasis on PRINT READING including lines, abbreviations, terminology, view identification, dimensioning practices, dimensioning calculations, tolerancing calculations, and SKETCHING including orthographic, isometric, section, and auxiliary views.

The course objective is for students to gain a basic proficiency for understanding and manipulating technical drawings and associated conventions. The course material for Print Reading and Sketching includes the alphabet of lines, orthographic projection, ordinary views, section views, auxiliary views, pictorial sketching, dimensioning, tolerancing, screw threads and fasteners, mathematics for design and an introduction to geometric dimensioning and tolerances.

# Learning Outcomes

Upon completion of this course the students will be able to:

1. Identify the various views and their correct projection
2. Define abbreviations and symbols
3. Create a basic sketch of a part that is legible and includes dimensions

# Required Material

**Text**:

Print Reading for Industry 11th edition; Brown, Walter C.; Brown, Ryan K. Goodheart-Willcox, 2020.   
ISBN 978-1-64564-672-3

**Supplies**:

Calculator

Drafting Kit

# Print Reading & Sketching B Module 1: Dimensioning and Tolerances

Upon completion of this module the student will be able to:

1. Define dimensioning and tolerances and their role in industrial prints.
2. Identify terms and measurements associated with dimensioning mechanics, including line types, symbols, arrows, and spacing.
3. Describe various systems, notes, and methods for dimensioning.
4. Identify tolerance values for dimensions on the drawing.
5. Identify standard symbols that guide or clarify the use of tolerances.
6. Describe basic characteristics of classes of fits for inch-based and metric-based parts.
7. Describe the purpose and objectives of geometric dimensioning and tolerancing (GD&T).
8. Define terms and symbols related to geometric dimensioning and tolerancing.
9. Explain the purpose and function of datums.
10. Identify proper datum identification techniques on a print.

### Module 1 Activities

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 Read Print Reading for Industry, Unit 9 – Dimensioning

Text Book

 Read Print Reading for Industry, Unit 10 – Tolerancing

Text Book

 Read Print Reading for Industry, Unit 13 - Geometric Dimensioning and Tolerancing

Text Book

 Complete Quiz 108-1

See Quiz INT108-1 Content Packing file to upload to LMS System

 Review Hands-on Lab 108-1.1, Lab 108.1.2, and Lab 108-1.3

See INT108 1.1 & INT108 2.1 & INT108 3.1 Lab Content

 Complete Hands-on Lab 108-1.1

Students should complete Review Activity 10-1 from the text book

 Complete Hands-on Lab 108-1.2

Students should complete Review Activity 10-2 from the text book

 Complete Hands-on Lab 108-1.3

See INT108 1.3 Lab Content

# Print Reading & Sketching B Module 2: Topic

Upon completion of this module the student will be able to:

1. Define terms related to screw threads.
2. Describe the various methods for representing screw threads in industrial prints.
3. Explain the different parts of a screw thread specification or callout.
4. Identify standard pipe thread representation and designations.
5. Identify and interpret general and local notes on a print.
6. Identify standard symbols that guide or clarify the specification of features that are typical of common machining processes.
7. Read and interpret specifications for counterbores, spotfaces, countersinks, counterdrills, and chamfered edges.
8. Read and interpret callouts and other dimensioning methods for features such as necks and keyways
9. Identify and interpret callouts for knurls
10. Define common terms related to surface quality and surface texture symbols
11. Identify and interpret the components of surface texture symbols
12. Explain standard practices for applying surface texture symbols on a print.

### Module 2 Activities

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 Read Print Reading for Industry, Unit 8 - Screw Thread Representation

Text Book

 Read Print Reading for Industry, Unit 11 - Machining Specifications and Drawing Notes

Text Book

 Read Print Reading for Industry, Unit 12 - Surface Texture Symbols

Text Book

 Read Print Reading for Industry, Appendix D - Abbreviations and Tables

Text Book

 Complete Quiz 108-2

See Quiz INT108-2 Content Packing file to upload to LMS System

 Review Hands-on Lab 108-2.1, Lab 108-2.2., and Lab 108-2.3

See INT108 2.1 & INT108 2.2 & INT108 2.3 Lab Content

 Complete Hands on Lab 108-2.1

See INT108 2.1 Lab Content

 Complete Hands on Lab 108-2.2

See INT108 2.2 Lab Content

 Complete Hands on Lab 108-2.3

See INT108 2.3 Lab Content

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# Print Reading & Sketching B Module 3: Topic

Upon completion of this module the student will be able to:

1. Describe drawing practices related to drawing revisions.
2. Identify revision information on an industrial print.
3. Explain the information contained within a revision history block.
4. Explain the information found in a revision status of sheets block for multi sheet drawings.
5. Explain the nature and role of assembly drawings in the industrial setting.
6. Explain different ways of creating pictorial and multi view assembly drawings used in industry.
7. Discuss the role of the subassembly drawing.
8. Identify and read information about the components within an assembly drawing.
9. Identify sectioning techniques used to delineate component parts in an assembly drawing.
10. Identify and read parts list information about assembly drawings that are drawn for multiple variations.
11. Explain the principles of cams as applied to common objects and products.
12. Identify types of cams used in industrial applications.
13. Explain terms related to cams and followers.
14. Interpret displacement diagrams with respect to the rise, fall, and dwell of a cam follower during a cycle.
15. Identify different methods for calculating motion transition in displacement diagrams.

### Module 3 Activities

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 Read Print Reading for Industry, Unit 14 - Drawing Revision Systems

Text Book

 Read Print Reading for Industry, Unit 16 - Assembly Drawings

Text Book

 Read Print Reading for Industry, Unit 19 - Cam Diagrams and Prints

Text Book

 Complete Quiz 108-3

See Quiz INT108-3 Content Packing file to upload to LMS System

 Review Hands-on Lab 108-3.1, Lab 108-3.2, and Lab 108-3.3

See INT108 3.1 & INT108 3.2 & INT108 3.3 Lab Content

 Complete Hands-on Lab 108-3.1

See INT108 3.1 Lab Content

 Complete Hands-on Lab 108-3.2

See INT108 3.2 Lab Content

 Complete Hands-on Lab 108-3.3

See INT108 3.3 Lab Content

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