Northwest State Community College  
Course Information Sheet

# Course Information

Title: Print Reading & Sketching C

Course Number: INT 109

Credit Hours: 1

Pre-requisite: INT 108

# Description

This is the third 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. Create a sketch of a part that is legible and includes dimensions
2. Interpret Drawing Notes
3. Identify information in the print title block
4. Describe the sequence of machining operations

# 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 C Module 1: Topic

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

1. Define terms related to springs used in industrial applications.
2. Define terms related to fasteners used in industrial applications.
3. Identify types of threaded fasteners shown on industrial prints.
4. Identify types of non-threaded fasteners shown on industrial prints.
5. Read specifications related to springs and fasteners on a print.
6. Describe various classifications and types of gears common in industrial applications.
7. Identify and discuss various industrial standards pertinent to gears and splines.
8. Identify the most common terms and characteristics of gears.
9. Identify spur gears and their representations and specifications.
10. Identify terms and characteristics for metric gears as compared with inch-based gears.
11. Describe materials and manufacturing processes relevant to gears.
12. Identify bevel gears and their representations and specifications.
13. Identify worm gears and their representations and specifications.
14. Define splines and serrations and identify their representations and specifications.

### Module 1 Activities

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 Read Unit 17

Text Book

 Read Unit 18

Text Book

 Take 109-1 Quiz

See Quiz INT109-1 Content Packing file to upload to LMS System

 Complete Hand-on Lab 109-1.1

See INT109 1.1 Lab Content

 Complete Hand-on Lab 109-1.2

See INT109 1.2 Lab Content

 Submit your idea for Final Sketch Project

 Start the Final Sketch

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# Print Reading & Sketching C Module 2: Topic

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

1. List common names and abbreviations used in the manufacture of plastic parts.
2. Explain the difference between thermoplastic and thermoset plastics.
3. Explain various processes used in the plastics industry.
4. Describe methods used to fasten and join plastics.
5. Read and interpret prints from the plastics industry.
6. Discuss the nature of industrial prints that feature welding processes.
7. Identify the standards that set forth methods of detailing welding specifications on an industrial print.
8. Identify the basic types of joints that are common to welded assemblies.
9. Explain basic welding processes that may be identified or specified in an industrial print.
10. Define and explain various welding terms important to describing the formation of the weld bead.
11. Identify the standard elements of a welding symbol, including the various numerical values and notations that can be contained within it.
12. Identify the basic weld symbols used in welding symbols, including the various edge shapes commonly used in groove welds.
13. Identify the numeric notations that join with the weld symbol to express size, depth, length, quantity, and spacing.
14. Identify supplementary symbols that are added to the welding symbol to clarify special instructions such as field welding, welding all around, the addition of inserts and spacers, or the contour of the weld face.

### Module 2 Activities

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 Read Unit 20

Text Book

 Read Unit 22

Text Book

 Take Quiz 109-2

See Quiz INT109-2 Content Packing file to upload to LMS System

 Show Progress of Final Project to Instructor

 Complete Hands-on Lab 109-2.1

See INT109 2.1 Lab Content

 Complete Hands-on Lab 109-2.2

Complete review activity 22-3 from the text book

# Print Reading & Sketching C Module 3: Topic

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

1. Explain the design implications of bending sheet metal to form a part.
2. Discuss characteristics of sheet metal thickness and gage numbers.
3. Explain the basic characteristics of a tool and die maker’s role in sheet metal fabrication.
4. Define and apply various terms related to sheet metal bends.
5. Define and interpret various terms related to sheet metal drawing notations.
6. Use a setback chart to calculate bend radii for precision sheet metal.
7. Use proper procedures and formula to calculate bend allowance for precision sheet metal.
8. Read and interpret precision sheet metal prints.
9. Learn how to do a layout from a print
10. Use of hand tools Example :( Hammer, Punch, Drill Press, Saws, Taps, and other tools)
11. Learn the basics of cutting tools

### Module 3 Activities

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 Read Unit 21

Text Book

 Take Quiz 109-3

See Quiz INT109-2 Content Packing file to upload to LMS System

 Complete Hands-on Lab 109-3.1

See INT109 3.1 Lab Content

 Drill Point Video 1

<https://www.youtube.com/watch?v=lMTaiVP04Jo>

 Drill Point Video 2

<https://www.youtube.com/watch?v=pDbzBVZ8j5M>

 Drill Point Video 3

<https://www.youtube.com/watch?v=c7FmwTbt9sc>

 Drill Point Video 4

<https://www.youtube.com/watch?v=uaBmoIDAy2E>

 Band Saw Safety Video

<https://www.youtube.com/watch?v=01dQt1NVAJg>

 Vertical Band Saw Safety Video

<https://www.youtube.com/watch?v=5R2CxMWfFyY>

 Sander Safety Video

<https://www.youtube.com/watch?v=yMPtMFZPCqk>

 Sharpen Drill Bit

<https://www.youtube.com/watch?v=m6aUL2t79iA>

 Do Drill Point Gauge Project

[Free training program - That Lazy Machinist](https://www.thatlazymachinist.com/home-accueil.html)

<https://www.thatlazymachinist.com/my-shop-videos.html>

<https://nebula.wsimg.com/3c6af46430f6f508a3efa9c0016e450f?AccessKeyId=C1D6A2368F6E7217387D&disposition=0&alloworigin=1>

 Submit Final Sketch

Students complete a final drawing

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