



Central
North
South
SVI

INT101 - Manufacturing Basics I

Document Type: District Master Course Outline
Proposal Type: New Course
Requester(s): Danette Randolph Holly Moore Karen L Whitney
College: South
Origination Approved: 11/07/2012 - 1:13 PM

BASIC INFORMATION

Requester(s): Danette Randolph
Holly Moore
Karen L Whitney
College: South Seattle Community College
Division/Dept: Apprenticeship-GT Campus
Dean: Holly Moore

COURSE INFORMATION

Proposed Course Number:

Prefix: **INT** Number: **101**

- Request a new Prefix
 This will be a common course

Full Title: Manufacturing Basics I

Abbreviated Title: Manufact Basics I

Catalog Course Description:

Students gain industry-relevant knowledge and applicable topics relevant for work in a diversified manufacturing environment. Topics include but are not limited to: Newton's Law, pressure awareness, energy, force, torque, and gas laws. An introduction to basic electricity and electron flow/charge, circuits, DC & AC, generation and safety practices.

Course Length: 11 Weeks Request an Exception

Course Prerequisite(s):
Instructor Permission

Topical Outline:

- I. Manufacturing Basics I Overview
 - A. Differences in Making and Manufacturing
 - B. Standardized Manufacturing in Aerospace Reading
 - C. Job Plans, Drawings, and Specs

- II. Safety
 - A. Equipment-Specific Safety

B. Workplace Safety and Protection

III. Tours

- A. Schedule of Tours
- B. Guidelines for Tours

IV. Project Planning

- A. The Prime Questions
- B. Right-Angle Plates
- C. Valve Dome
- D. Tap-Wrench Nut
- E. Locator Bolt
- F. Job Planning Sheet
- G. C-Clamp Project
- H. Geometric Dimensioning Symbols, Rules, & Guidelines

V. Precision Measurement

- A. Using Gage Blocks
- B. Drawing for Measurements
- C. Specification Drawing for Measurements
- D. C-Clamp Project (2)

VI. Precision Drilling

- A. Drilling Block (informal drawing)
- B. C-Clamp Project (3)

VII. Sawing

- A. Saw Machine Glossary
- B. Sawing Review Questions

VIII. General Standard Operating Procedures

- A. General Safety Tips
- B. Lathe
- C. Mill
- D. Drill Press
- E. Pedestal Grinder
- F. Planer
- G. Band Saw
- H. Milling Review Questions
- I. Drilling Review Questions

IX. Introduction to Windows

- A. Objectives
- B. Summary
- C. Windows Terms

- X. Mini Mill Project

XI. Sheet Metal Tool Box Project

- A. Introduction to the Sheet Metal Tool Box Project
- B. Manufacturing the Sheet Metal Tool Box

COURSE CODING

Funding Source: 1.....State
Institutional Intent: 21.....Vocational Preparatory

This Course is a requirement for the following program(s):
 (No Programs Selected)

My Course Proposal is a requirement for a program not on this list
 Program Title/Description/Notes:
 Industrial Manufacturing Basics - STT Certificate

Will this course transfer to a 4-year university? **No**

Is this course designed for Limited English Proficiency? **No**

Is this course designed for Academic Disadvantaged? **No**

Does this course have a Workplace Training component? **Yes**

CIP Code: 47.0303 Request Specific CIP Code
EPC Code: 768 Request Specific EPC Code

Credits:

Will this course be offered as Variable Credit?	No
List Course Contact Hours	
Lecture (11 Contact Hours : 1 Credit)	22
Lab (22 Contact Hours : 1 Credit)	28
Clinical Work (33 Contact Hours : 1 Credit)	0
Other (55 Contact Hours : 1 Credit)	0
 Total Contact Hours	 50
Total Credits	3

COLLEGE SUPPLEMENTAL

Proposed Quarter of Implementation: NA
Fall 2012

Request Provisional Exception

Class Capacity: 24

Modes of Delivery: (Check all that apply)

- Fully On Campus
- Fully Online
- Hybrid
- Other Explanation: Both on Campus & part of course may be taught offsite at an employer site

Class Schedule Description:

This unit introduces students to shop and tool safety that meets Labor and Industry specifications and the licensing requirements of the Department of Social and Health Services. The applied physics section provides an understanding of practical applications of basic physics in everyday life and manufacturing. Topics include but are not limited to: Newton's Law, types of pressure, definitions of energy, force, torque, and gas laws. Provides an introduction to basic electrical practices.

Student Learning Outcomes:

Communication

Read and listen actively to learn and communicate

Read and listen actively

Access and evaluate information from many sources and specifications

Computation

Apply quantitative skills for personal, academic, and career purposes

Apply skills and knowledge learned from manufacturing basics

Understand and comprehend manufacturing drawings, and principles

Critical Thinking and Problem-Solving

Think critically in evaluating information, solving problems, and making decisions

use critical thinking skills to apply engineering principles

Personal Responsibility

Manage personal health and safety

Utilize basic manufacturing techniques and safety throughout applied learning

Program Outcomes:

SOUTH SEATTLE COMMUNITY COLLEGE

Industrial Manufacturing Basics

PROGRAM OUTCOMES

At the end of the program the graduates will:

- Describe and utilize manufacturing techniques, tools and safety practices.

(SLO 1, 2, 3, 4, 5, 7)

- Apply the concepts of diversified manufacturing, CPR, First AID and Electronics to promote quality and safe production and designs. (SLO 1,2,3,4,7)
- Employ the appropriate actions regarding workplace culture, safety and industry standards; (SLO 3, 6)
- Evaluate one's own capabilities and limitations, identify individual needs of continued growth is able to seek consultation from superiors. (SLO 3, 6)
- Communicate effectively and appropriately in the workplace. (SLO 1, 3, 4, 6)
- Practice within the standards established by the profession, and identify the parameters of accountability. (SLO 2, 4, 5, 6, 7)

Course Outcomes/Objectives:

At the end of the course the student will be able to:

1. Describe the difference between making and manufacturing
2. Demonstrate shop safety techniques and use of PPE in a shop setting
3. Identify various types of materials equipment commonly used in manufacturing
4. Identify and learn proper use of various types of tools and equipment commonly used in manufacturing
5. Learn proper storage of tools and equipment
6. Follow job plans and drawings to manufacture and complete classroom projects
7. Identify the production practice of Lean manufacturing and its impact in the workplace
8. Collaborate in teams to effectively produce a standardized product
9. Demonstrate all aspects of the basic process of manufacturing including production, inspection, and finishing
10. Demonstrate knowledge of the basic principles of physics as they apply to everyday life
11. Demonstrate knowledge of the physical laws as applied to manufacturing
12. Describe how electricity works
13. Demonstrate proficiency in basic wiring
14. Understand and use of test meters

Explain the student demand for the course and potential enrollment:

This course is the first course in a short-term training certificate in the Industrial Manufacturing Academy.

Explain why this course is being created:

This course is a required course in the Manufacturing Academy certifications

What challenges, if any, do you foresee in offering this course:

None

This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

Danette Randolph Print Name	<i>Danette Randolph</i> Signature	11/2/2012 Date
Holly Moore Print Name	<i>Holly Moore</i> Signature	11/2/2012 Date
Karen L Whitney Print Name	<i>Karen L Whitney</i> Signature	11/2/2012 Date

Dean:

Holly Moore Print Name	<i>Holly Moore</i> Signature	11/7/2012 Date
---------------------------	---------------------------------	-------------------

Results of SSCC Curriculum Coordinating Council Findings

Participating Faculty Response and Remarks

- Recommended for approval
- Not recommended for approval
- This course did not go through Committee Review

Chairman, Curriculum Coordinating Council:

_____	_____	_____
Print Name	Signature	Date

Vice President for Instruction:

Donna Miller-Parker Print Name	<i>Donna Miller-Parker</i> Signature	11/7/2012 Date
-----------------------------------	---	-------------------