

Las Positas College
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Course Outline for INDT 61
MANUFACTURING PROCESSES
Effective: Fall 2017

I. CATALOG DESCRIPTION:

INDT 61 — MANUFACTURING PROCESSES — 2.00 units

Examination of machine shop, welding, and general manufacturing processes; practice in the use of hand tools, basic machine tools, and welding equipment; understanding the relationship between manufacturing processes and design.

1.00 Units Lecture 1.00 Units Lab

Grading Methods:

Letter or P/NP

Discipline:

	MIN
Lecture Hours:	18.00
Lab Hours:	54.00
Total Hours:	72.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

- A. product design and tooling for manufacturing and be able to select the correct processes for manufacture from design drawings;
- B. the use of drafting techniques for the development of product design, and the manufacture of the complete product from the design;
- C. machine tool operation and be able to operate an engine lathe, milling machine, and related equipment for manufacturing of class projects;
- D. welding equipment set up and be able to complete welds with a minimum of two different types of equipment.

V. CONTENT:

- A. Product design concepts
 - 1. design and planning metal products
 - 2. production process analysis
 - 3. cost estimating
- B. Oxyacetylene welding, soldering, and cutting processes
- C. Electric arc welding and cutting processes
- D. Casting techniques
- E. Heat treating and hardness testing
- F. Machining various metals and plastics
- G. Computer-integrated manufacturing
- H. Advanced production operations
 - 1. special processes
 - 2. mass production methods
 - 3. numerical controlled machinery

VI. METHODS OF INSTRUCTION:

- A. **Demonstration** -
- B. Sample materials and products from industry
- C. Class projects
- D. **Lecture** -

VII. TYPICAL ASSIGNMENTS:

VIII. EVALUATION:

- A. **Methods**
- B. **Frequency**

IX. TYPICAL TEXTS:

1. John E. Neely and Richard R. Kibbe *Modern Materials and Manufacturing Processes.*, -, 0.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Safety glasses, shop coat or apron, padlock