Lecture Contact Hours: 32-36, Homework Hours: 64-72, Total Student Learning Hours: 96-108

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

CADD TECHNOLOGY 140 – INTRODUCTION TO ADVANCED CADD/MANUFACTURING

2 hours lecture, 2 units

Catalog Description
Concept of manufacturing, provide in depth the fundamental differences between manufacturing and advanced manufacturing processes. Role of artificial intelligence (AI) in manufacturing– robotics, automation, numerical control, quality control, etc.

Prerequisite
None

Course Content
1) History development of manufacturing from handcraft to high tech.
2) Types of manufacturing process
3) Automation – Introduction and its significant application
4) Robotics – introduction, aspects and applications
5) Robotics in interdisciplinary branch of engineering
6) Concepts of CNC-machines
7) Advanced manufacturing and its role in production

Course Objectives
Students will be able to:
1) Explain the various types of Manufacturing.
2) Understand the automation process and control systems in manufacturing.
3) Define the interdisciplinary roles of robots in various branch of engineering operation.
4) Describe the applications of numerical control (NC) of machining tools.
5) Explain the applications of numerical control (NC) of machining tools.

Method of Evaluation
A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in the subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.
1) Midterm and final exams that measure the student's ability to describe the applications of numerical control (NC) of machining tools as well as describe the applications of numerical control (NC) of machining tools.
2) In-class activities (written/oral) that measure the student's ability to articulate the various types of manufacturing as well as the automation process and control systems in manufacturing

Special Materials Required of Student
None

Minimum Instructional Facilities
CADD computer lab

Method of Instruction
Lecture demonstration

Out-of-Class Assignments
Weekly group Assignment – Mini Project

Texts and References
1) Required (representative example): None
2) Supplemental: Weekly Handouts

Student Learning Outcomes
Upon successful completion of this course, students will be able to:
1) Explain the evolution of Manufacturing through history.
2) Describe the significance of Artificial Intelligence (AI) in Advanced Manufacturing.
3) Differentiate between Manufacturing and Advanced Manufacturing.
4) Discuss the effects of automation on mass production.