

COLLEGEWIDE COURSE OUTLINE OF RECORD

METC 220, CAD FOR MECHANICAL DESIGN

COURSE TITLE: CAD for Mechanical Design
COURSE NUMBER: METC 220
PREREQUISITES: METC 107 Mechanical Design and Documentation.
SCHOOL: Applied Science and Engineering Technology
PROGRAM: Mechanical Engineering Technology
CREDIT HOURS: 3
CONTACT HOURS: Lecture: 2 Lab: 2
DATE OF LAST REVISION: Spring, 2016
EFFECTIVE DATE OF THIS REVISION: Fall, 2016

CATALOG DESCRIPTION: An introduction and exploration of solid modeling using parametric solid modeling software. Emphasis is placed on learning the basic concepts of creating parts using software-specific modeling and modification commands. The concepts of parent-child relationships as well as parametric relations are introduced. Assemblies of components are created based upon student-created parts, and the generation of engineering drawings will be required.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Utilize appropriate project file management.
2. Utilize a sketching environment to create intentional designs.
3. Define work planes, share geometry, and create secondary sketches.
4. Construct solid model parts using appropriate 3D commands.
5. Create modifications to part designs with appropriate 3D commands.
6. Modify and redefine parent-child relationships as well as design intent.
7. Create copies and patterns.
8. Create sweeps, lofts, and associated features.
9. Create ANSI-approved technical drawings from part and assembly files.

COURSE CONTENT: Topical areas of study will include –

Software user interface	Sweeps and lofts
Sketching, constraints, and formulas	Assemblies and assembly constraints
Extrusions and revolutions	2D Drawings
Fillets, chamfers, and holes/cutouts	Auxiliary views

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