

SYLLABUS

Code/Name	MCE 212.1 / Computer Aided Design
Type	Elective
Credit/ECTS	3/4
Hour per Week	4 (2+2+0)
Level/Year	Undergraduate/3
Semester	Fall
Classroom	WWF D208 D308
Content	Introduction to CAD and 2D drawing techniques. Introduction to a 3D and CAD-based popular computer-aided design programs such as SolidWorks, Catia, Autodesk Fusion, etc. Sketch-based draft drawing, basic solid modeling method, and 3D solid modeling. Principles of sectioning. Dimensioning in perspective drawing. Assembly and machine elements. Assemblies and working drawings.
Prerequisites	-
Textbooks	Primary MJ Rider, Designing with SOLIDWORKS 2024, SDC Publications, 1st Ed., 2024 Supplementary RH Shih, SOLIDWORKS 2024 and Engineering Graphics An Integrated Approach, SDC Publications, 1st Ed., 2024
Objectives	<ul style="list-style-type: none">• To design solid models of machine parts with a software• To design sheet metal structures with a software• To prepare assembly of machines and structures with a software
Course Outcomes	In this course you will be able to: C01 Draw 2D views of machine parts with a software C02 Design solid model of machine parts with a software C03 Design thin parts of structures with a software C04 Assemble machine parts to illustrate a machine C05 Animate motion of mechanisms and machines

Weekly Schedule of Topics

W	Topic
1	Basic drawing commands and 2D drawings
2	Basic modifying commands and 2D drawing modification
3	Creating solid parts and Boolean operations
4	Advanced Part Modeling
5	Advanced Part Modeling
6	Hole wizard
7	Surface Modeling
8	Surface Modeling
9	Sheet Metal and Weldments
10	Assembly basics
11	Constraints and contacts
12	Creating animation for assembly
13	Optimization

Professional Contribution Ability to design, classify, and compare mechanisms

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	0	4	1	1	4	3	4	2	1	5	3
CO2	0	5	3	2	2	3	4	3	2	5	3
CO3	0	5	3	2	2	3	4	3	2	5	3
CO4	0	5	3	2	2	3	4	3	2	5	3
CO5	0	2	0	0	2	1	1	3	0	3	1

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Special Conditions • The consequence of violation of the attendance rule is to receive a grade of **NA**.

Requirements Basic knowledge of a dynamic analysis software

Evaluation

Midterm Exam	50%
Final Exam	50%
Total	100%

Rubric -

Course Policy

1. You must attend at least 70% of the sessions including add-drop period.
2. Be in the class on time.
3. English should always be used to communicate with one another.
4. Mobile phone should be switched off and put away during the class.
5. You cannot talk to your friends during class no matter what the subject is.

Cheating & Plagiarism

- Copying or letting someone to copy your work on exams is cheating.
- The consequence of academic dishonesty is to receive a grade of **F** for the course.

Instructor

Name/Surname	
Room	