2021-2022	Mechanical Engineering	Year 3 - Sem. 5
MECA308	**Technical Drawing**	Mandatory
ECTS: **2**	*Coordinator:* Dr Jihad Sahili	*Language:* English/French
Total hours: **27h**	*Lectures:* Dr Jihad Sahili, Dr Joseph Gholam, Pr Marwan Azzi	

Description:

This course covers the following topics: Graphical representation; multiple views and sections; Dimensioning and tolerancing; Geometrical tolerances; Representation of mechanical elements: threads, gears, bearings, belt and chain drives, welding; Computer aided design and drafting (CADD), Shop drawings.

Learning outcomes:

- Analysis of complex design systems related to mechanical Engineering.
- Visualize and formulate detail drawing of a given object.
- Read and interpret a given production drawing.
- Identify standard parts / components.
- Sketch details and assembly of mechanical systems.
- Create 2-D and 3-D models by standard CAD software with manufacturing considerations.

Content:

- Need for drawing conventions – introduction to IS conventions.
- Conventional representation of materials.
- Common machine elements and parts such as screws, nuts, bolts, keys, gears, webs, ribs
- Types of sections – selection of section planes and drawing of sections.
- Auxiliary sectional views.
- Methods of dimensioning.
- General rules for sizes and placement of dimensions for holes, centers, curved and tapered features. Title boxes, their size, location and details.
- Common abbreviations & their liberal usage.
- Types of Drawings – working drawings for machine parts.
- Drawing of Machine Elements and simple parts.
- Selection of Views, additional views for the machine elements and parts with every drawing proportions.
- Popular forms of Screw threads, bolts, nuts, stud bolts, tap bolts, set screws.
- Keys, cotter joints and knuckle joint,
- Riveted joints for plates Shaft coupling, spigot and socket pipe joint.
- Journal, pivot and collar and foot step bearings.
- Assembly Drawings: Drawings of assembled views for the part such as: Engine parts, Gear boxes, Engine connecting rod, Piston assembly, Screws jacks, Machine Vices, Tailstock etc.

References:

- Narayana, Kannaiah, Reddy, Machine Drawing, New Age International Publishers.
- K. C. John, Textbook of Machine Drawing.
- N. D. Junnarkar, Machine Drawing, Pearson Education.
- P. S. Gill, A Textbook of Machine Drawing, S.K. Kataria & Sons.
- N. D. Bhat, V M Panchal, Machine Drawing, Charotar Publication House.

Evaluation Method:

Assessment in the following areas will be converted to points, to compute your final grade in this course:

- Homework Assignment
- Class Project
- Mid-Term
- Final Exam

Description :

Ce cours couvre les sujets suivants : Représentation graphique ; vues et coupes multiples ; Dimensionnement et tolérancement ; Tolérances géométriques ; Représentation d'éléments mécaniques : filetages, engrenages, roulements, transmissions par courroie et chaîne, soudage ; Conception et dessin assistés par ordinateur (CDAO), Dessins d'atelier.