



University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc. Mechanical Engineering

Form no. (12): Course Specification

1- Course Data

Course Code: ME 252	Course Title: Mechanical Engineering Drawing	Academic Year/Level: 2nd year / 3rd semester
Specialization: Mechanical	No. of Instructional Units 3 credits	Lecture 2 hrs.
		Practical 4 hrs.

2- Course Aim

- To enable the student to make detail and assembly drawings with enough care and accuracy and according to appropriate conventions

3- Intended Learning Outcomes

a- Knowledge and Understanding	Through knowledge and understanding, students will be able to: a.1) Concepts and theories of mathematics and sciences, appropriate to the discipline a.4) Principles of design including elements design, process and/or a system related to specific disciplines. a.10) Technical language and report writing a.p.2) Internal combustion, pumps, turbines and compressors, classification, construction design concepts, Operation and characteristics a.p.7) Basic theories and principles of some other engineering and mechanical engineering disciplines providing support to mechanical power and energy disciplines.
b- Intellectual Skills	Through intellectual skills, students will be able to: b.1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems. b.2) Select appropriate solutions for engineering problems based on analytical thinking. b.3) Think in a creative and innovative way in problem solving and design b.8) Select and appraise appropriate ICT tools to a variety of engineering problems b.12) Create systematic and methodic approaches when dealing with new and advancing technology.
c- Professional Skills	Through professional and practical skills, students will be able to: c.2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services c.3) Create and/or re-design a process, component or system, and carry out specialized engineering designs c.4) Practice the neatness and aesthetics in design and approach. c.5) Use computational facilities and techniques, measuring instruments, workshops and laboratory equipment to design experiments, collect, analyze and interpret results c.9) Demonstrate basic organizational and project management skills. c.12) Prepare and present technical reports

	<p>c.p.2) Prepare engineering drawings, computer graphics and specialized technical reports</p> <p>c.p.3) Write computer programs pertaining to mechanical power and energy engineering</p> <p>c.p.4) Describe the basic Thermal and fluid processes mathematically and use the computer software for their simulation and analysis</p>
d- General Skills	<p>Through general and transferable skills, students will be able to:</p> <p>d.4) Demonstrate efficient IT capabilities.</p> <p>d.9) Refer to relevant literature</p>

4- Course Content

Week No.1	AutoCAD basics
Week No.2	Object construction and manipulation
Week No.3	Geometric construction
Week No.4	Layers, text and dimensioning
Week No.5	Section views, hatching and construction of blocks
Week No.6	Solid modeling, primitives and Boolean operations
Week No.7	Creating solid models from 2D polylines / 7th week evaluation
Week No.8	Viewing, modifying and editing solids, solid modeling exercises
Week No.9	Assembly drawing with applications in Mechanical, Industrial and Marine Engineering – Assembly drawing exercise
Week No.10	Free hand sketching – Assembly drawing exercises
Week No.11	Fits and Tolerances - Assembly drawing exercises
Week No.12	Applications on Fits and Tolerance on Drawings - Assembly drawing exercises / 12th week evaluation
Week No.13	Conventional representation of Mechanical elements - Assembly drawing exercises.
Week No.14	Surface finish and machining symbols - Assembly drawing exercises
Week No.15	Welding and hydraulic symbols - Assembly drawing exercises
Week No.16	Final Examination

5- Teaching and Learning Methods

<ul style="list-style-type: none"> • Lectures • Tutorials • Reports & sheets • Laboratories • Seminars

6-Teaching and Learning Methods for Students with Special Needs

- Lectures
- Tutorials
- Reports & sheets
- Laboratories
- Seminars

Engineering Requirements and Design Considerations in college Buildings and its Leading Passages

- The design of college buildings and pedestrian passages leading to it are sloppy to allow the transportation of the handicapped;
- Doors are wide enough to let wheel chairs pass through easily and conveniently.
- Lifts are provided for movement between floors.
- Doors are made from light weight materials to make it easy for the handicapped suffering from weakness in limb muscles or those handicapped using prosthetic limbs to deal with them with the least muscular effort.
- Class floors are made from non-slippery materials to prevent falls on the part of the handicapped.
- Sudden changes in the floor level are prevented.

Design Considerations of the Classes

- Class boards are placed at 60 cm high to allow wheeled chair users or those suffering from limited arm mobility use them.
- Enough spaces are left between seats and benches to prevent hindering the movement of wheeled chairs between them.
- Handicapped students sit among normal people in class to be able to interact with them. Nevertheless, in urgent cases according to the nature of the disability, the handicapped students sit in fixed suitable places whether at the front or the back of the class.
- Handicapped students sit close to the main exits of the class to be able to evacuate in case of emergencies.

Academic Support:

- The general academic advisor appoints an academic supervisor for handicapped students.
- Continuous follow ups are made for handicapped students after each assessment to evaluate their academic level of achievement

7- Student Assessment

a-Procedures used	1-Written Examinations to assess The Intended Learning Outcomes.	
	2-Class Activities (Reports, Discussions, -----) to assess The Intellectual and general Skills.	
b- Schedule:	Assessment 1	7 th Week Assessment
	Assessment 2	12 th Week Assessment
	Assessment 3	Continuous Assessments
	Assessment 4	16 th Week Final Written Exam
c- Weighing of Assessment	7 th Week Evaluation	30 %
	12 th Week Evaluation	20 %
	Final-term Examination	40 %
	Oral Examination	00 %
	Practical Examination	00 %
	Semester Work	10 %
	Total	100%

8- List of References:

a- Course Notes	N/A
b- Required Books (Textbooks)	• Notes prepared and edited (from several related text books, standards and codes in use) to cover the syllabus
c- Recommended Books	• □ Boundy, "engineering Drawings", McGraw – Hill Co, Latest Edition

d- Periodicals, Web Sites, etc.	N/A
--	-----

Course Instructor: Prof. El-Sayed Saber

Head of Department: Prof. El-Sayed Saber

Program Manager: Prof. El-Sayed Saber

**Dean of College of Engineering and Technology
of AASTMT**

Name: Prof. Moustafa Hussein Aly

Signature:

**Executive Manager of Quality Assurance
Center of AASTMT**

Name: Prof. Aziz Ezzat

Signature:

