



Arab Academy for Science, Technology & Maritime Transport  
College of Engineering & Technology  
Mechanical Engineering (Mechatronics) Program

**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: <b>ME 151</b>	Course Title: <b>Engineering Drawing and Projection</b>	Academic Year/Level: <b>1<sup>st</sup> year / 2<sup>nd</sup> semester</b>	
Specialization: <b>Mechanical</b>	No. of Instructional Units <b>3 credits</b>	Lecture <b>2 hrs.</b>	Practical <b>2 hrs.</b>

**2- Course Aim**

- To give the students the ability to communicate by means of Engineering Drawing and to relate the applications of drawing techniques to engineering practice

**3- Intended Learning Outcomes**

<b>a- Knowledge and Understanding</b>	<b>Through knowledge and understanding, students will be able to:</b> K1) Concepts and theories of mathematics and sciences, appropriate to the discipline K4) Technical language and report writing
<b>b- Intellectual Skills</b>	<b>Through intellectual skills, students will be able to:</b> I2) Select appropriate solutions for engineering problems based on analytical thinking.
<b>c- Professional Skills</b>	<b>Through professional and practical skills, students will be able to:</b> P4) Practice the neatness and aesthetics in design and approach. P10) Apply quality assurance procedures and follow codes and standards. P12) Prepare and present technical reports
<b>d- General Skills</b>	<b>Through general and transferable skills, students will be able to:</b> G3) Communicate effectively

**4- Course Content**

<b>Week No.1</b>	Engineering drawing tools – line types - Drawing operations (Exercises on drawing operations)
<b>Week No.2</b>	Drawing operation applications (Exercises on drawing operations)
<b>Week No.3</b>	Orthographic projection from simple Isometric (Exercises on orthographic projection)
<b>Week No.4</b>	Orthographic projection from complicated Isometric (Exercises on orthographic projection)
<b>Week No.5</b>	Orthographic projection from Isometric with curves and circles (Exercises on orthographic projection)
<b>Week No.6</b>	Drawing notations: dimensions and text (Exercises on drawing notations)
<b>Week No.7</b>	Isometric drawing (Exercises on Isometry) / 7th week evaluation

<b>Week No.8</b>	Isometric drawing with curves and circles (Exercises on Isometry)
<b>Week No.9</b>	Missing view (Exercises on missing view)
<b>Week No.10</b>	Missing view (Exercises on missing view)
<b>Week No.11</b>	Extracting missing view & Isometry (Exercises on missing view & isometry)
<b>Week No.12</b>	Additional views (Exercises on missing view & isometry) / 12th week evaluation
<b>Week No.13</b>	Sectioning and hatching (Exercises on sectional views)
<b>Week No.14</b>	Partial Sectioning (Exercises on sectional views)
<b>Week No.15</b>	General Revision (Exercises on missing view, isometry and sectional views)
<b>Week No.16</b>	Final Examination

#### 5- Teaching and Learning Methods

- Lectures
- Tutorials
- Reports & sheets

#### 6-Teaching and Learning Methods for Students with Special Needs

- Lectures
- Tutorials
- Reports & sheets

##### **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**

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

**8- List of References:**

<b>a- Course Notes</b>	N/A
<b>b- Required Books (Textbooks)</b>	• Notes prepared and edited (from several related text books, standards and codes in use) to cover the syllabus
<b>c- Recommended Books</b>	• S. Bogolyulov A. Voinor, "Engineering Drawing", MIR Publishers, Latest Edition. Thomas E., French, "Engineering Drawing & Graphic Techniques", McGraw-Hill Co., Latest Edition.
<b>d- Periodicals, Web Sites, etc.</b>	N/A

**Course coordinator:**

**Program Manager:**