



**1. Basic Information**

<b>Program Title</b>	All academic programs		
<b>Department offering the Program</b>			
<b>Department Responsible for the Course</b>	Production and Mechanical Design Engineering Department		
<b>Course Code</b>	ENG115		
<b>Year/ Level</b>	Preparatory Year -2 <sup>nd</sup> Semester		
<b>Specialization</b>	Minor		
<b>Teaching Hours</b>	Lectures	Tutorial	Practical
	1	3	-

**2. Course aims:**

No.	aim
1	Master the concepts of engineering graphics and visualization and an introduction to computer aided design programs.

**3. Learning Outcomes (LOs):**

A1.1	Outline concepts and theories of Intersections of Engineering Solids and Developments.
A1.2	Drive the missing views.
A1.3	Select appropriate solutions for engineering projection and drawing problems based on analytical thinking.
A1.4	Assess different ideas, views, and knowledge from a range of application examples of projection and drawing.
A3.1	Apply a wide range of analytical tools and software packages related to projection and drawing.
A3.2	Use knowledge and skills with engineering community and industry especially related to engineering fields.
A8.1	Communicate effectively graphically with a range of audiences using contemporary tools.

**4. Course Contents:**

No.	Topics	Week
1	Introduction to Engineering Drawing and Visualization	1
2	Drawing Instruments and Free Hand Sketching	4-2
3	Geometric Constructions	5
4	Representation by Plane Images (Orthographic Projection)	6
5	Representation by Stereo-graphic Images (Pictorial Drawing and Isometric)	7
6	Dimensioning	8
7	Intersections of Engineering Solids and Developments	10-9
8	Drive the missing views	11
9	Sectional views	12



10	Metallic constructions and steel structures	13
11	Introduction to computer aided design programs	14

**5. Teaching and Learning Methods:**

No.	Teaching Method
1	Interactive Lectures
2	Discussion Sessions
3	Tutorials and Assignments

**6. Teaching and Learning Methods of Disable Students:**

No.	Teaching Method
1	Additional Tutorials
2	Online lectures and assignments
3	More solved examples

**7. Student assessment:**

**7.1 Student Assessment Methods:**

No.	Assessment Method	LOs
1	Mid Term Examination	A1.1, A1.2, A1.3
2	Semester work	A1.1, A1.2, A1.3, A1.4, A3.1, A3.2, A8.1
3	Final Term Examination	A1.1, A1.2, A1.3, A1.4

**7.2 Assessment Schedule:**

No.	Assessment Method	Weeks
1	Mid Term Examination	7 <sup>th</sup> week
2	Semester work	Every week
3	Final Term Examination	15 <sup>th</sup> week

**7.3 Weighting of Assessments:**

No.	Assessment Method	Weights
1	Mid Term Examination	13%
2	Semester work	20%
3	Final Term Examination	67%
Total		100%

**8. List of References**



No.	Reference List
1	F.E. Giesecke, A.E. Mitchell, “ <i>Technical Drawing with Engineering Graphics</i> ”, 15 <sup>th</sup> Edition, Peachpit Press, 2016.
2	Dennis K. Lieu, Sheryl A. Sorby, “ <i>Visualization, Modeling, and Graphics for Engineering Design</i> ”, 2 <sup>nd</sup> Edition, Cengage Learning Publisher, 2016.
3	David E. Goetsch, Raymond L. Rickman, William S. Chalk , “ <i>Technical Drawing for Engineering Communication</i> ”, 7 <sup>th</sup> Edition, Cengage Learning Publisher, 2015.
4	McGraw Hill, “ <i>Mechanical Drawing Board &amp; CAD Techniques</i> ”, Student Edition, McGraw-Hill Education, 2011.

**9. Facilities Required for Teaching and Learning:**

No.	Facility
1	Lecture Classroom
2	White Board
3	Data Show System
4	Visualizer
5	Presenter
6	Sound System

**10. Matrix of Knowledge and Skills of the Course:**

No.	Topic	aim	LO's
1	Introduction to Engineering Drawing and Visualization	1	A1.1, A1.2
2	Drawing Instruments and Free Hand Sketching	1	A1.1, A1.2, A3.1, A3.2, A8.1
3	Geometric Constructions	1	A1.1, A1.2, A3.1, A3.2, A8.1
4	Representation by Plane Images (Orthographic Projection)	1	A1.1, A1.2, A1.3, A3.1, A3.2
5	Representation by Stereo-graphic Images (Pictorial Drawing and Isometric)	1	A1.1, A1.2, A1.3, A3.1, A8.1,
6	Dimensioning	1	A1.1, A1.2
7	Intersections of Engineering Solids and Developments	1	A1.3, A 1.4, A3.2, A8.1
8	Drive the missing views	1	A1.1, A1.2, A3.1, A 1.4, A3.2, A8.1
9	Sectional views	1	A1.1, A1.2, A3.1, A 1.4, A3.2, A8.1
10	Metallic constructions and steel structures	1	A1.1, A1.2, A3.1, A 1.4, A3.2



## Course Specifications: Engineering Drawing



11	Introduction to computer aided design programs	1	A1.1, A1.2, A2.1, A8.1,
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### Date of Approval:

**Course Coordinator**

**program Manager**

**Head of Department**

**Associate Prof. Dr.  
Tawakol Ahmed Enab**

**Associate Prof. Dr.  
Tawakol Ahmed Enab**

**Assoc. Prof. Dr.  
Noha Foda Ibrahim**

<b>Course: Engineering Drawing (2)</b>	
<b>Program LOs</b>	<b>Course LOs</b>
A1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.	A1.1 Outline concepts and theories of Intersections of Engineering Solids and Developments.  A1.2 Drive the missing views.  A1.3 Select appropriate solutions for engineering projection and drawing problems based on analytical thinking.  A1.4 Assess different ideas, views, and knowledge from a range of application examples of projection and drawing.
A3. Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and	A3.1 Apply a wide range of analytical tools and software packages related to projection and drawing.  A3.2 Use knowledge and skills with engineering community and industry especially related to



## Course Specifications: Engineering Drawing



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development.	engineering fields.
A8. Communicate effectively—graphically, verbally and in writing—with a range of audiences using contemporary tools.	A8.1 Communicate effectively graphically with a range of audiences using contemporary tools.