	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Eng. Drawing and Descriptive Geometry	**Module Delivery**	
Module Type	CORE		
Module Code	ENG124		
ECTS Credits	7		
SWL (hr/sem)	175		

Module Level	1	**Semester of Delivery**	2
Administering Department	**Aircraft Engineering**	**College**	**Engineering**
Module Leader	Ahmad Saddy Mohamad	**e-mail**	ahmad.saddy@uowa.edu.iq
Module Leader's Acad. Title	Assist. Prof	**Module Leader's Qualification**	PhD.
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. Training the student in the first stage the usage of Eng. drawing equipment. 2. Educate the student in the first stage the fundamental of mechanical drawing like Lettering, Applied geometry Pictorial drawing (Real model in true dimension), Orthographic projection, first & third angle projection, Dimensions, Sections, Third view estimate.
Module Learning Outcomes	1. Identify the components and basics of Engineering drawing. 2. Learn how to read the maps of mechanical engineering drawing. 3. Identify and knowing of all symbols and standers of Engineering drawing. 4. Identify the methods of engineering drawing and applied geometry. 5. Learn how to Pictorial drawing (Real model in true dimension) and Orthographic projection. 6. Identify all types of projection, First and third angle projection and Sections 7. The possibility of the student to draw the subject which explains to him. 8. Linking what his learning with reality. 9. Complete the drawing in specified time. 10. Student ability to learn and understand all the private belongings of mechanical drawing. 11. Develops student ability to using computers programs of drawing and conjugated with manual drawing.
Indicative Contents	****Engineering drawing:** Introduction. Standard drawing equipment. **Lettering:** Lines kinds in drawing. Kufi font in the writing of letters and numbers. The paper types and design with title table. Draw lines and circles. [10 hrs] ****Descriptive Geometry:** Introduction to descriptive geometry. Projection theory with standard planes. Methods of projection. Projection of a point. Exercise in projection of a point. [5 hrs] **Introduction to CAD Packages** [4.5 hrs] 1- Menus/ format/ Draw / Tools / Dimension / Modify 2- Tool bars 3-Drawing area 4-Command bar / Task bar 5-Drawing Grid / Snap Mode / Ortho Mode / Object Snap and Tutorials ****Engineering drawing:** **Engineering Processes:**

	Applied geometry in eng. drawing. Exercise in important eng. geometry (Drawing a perpendicular line to bisector, dividing a line, drawing a tangent to circle from point, Drawing an ellipse). [5 hrs] **Introduction to (ISO); Pictorial drawing:** Real model in true dimensions. Draw cube shape with ovals by used four centers method. Exercise in pictorial drawing. [7 hrs] ****Descriptive Geometry:** Projection of straight line. Exercise in projection of straight line. Exercise in projection of straight line by rotation method. The status of the straight line in space. [2 hrs] ** CAD** [5.5 hrs] Coordinate system (absolute and relative coordinate) Cartesian / Polar Coordinates and Tutorials Two Dimensional Drawing (Line , Circle , Rectangle , Arc , Polygon) Modify (Erase , Copy , Rotate , Mirror , Offset) and Tutorials ****Engineering drawing:** Exercises in Engineering Drawing (ISO). **Three Projections:** Three projections definition (front, top and side view). Draw in first angle. Exercises in projection. [14.5 hrs] ****Descriptive Geometry:** Projection of straight line. Exercise in projection of straight line. Exercise in projection of straight line by rotation method. The status of the straight line in space. [1.5 hrs] ** CAD** [3.5 hrs] Two Dimensional Drawing (Polyline , Helix , Donut , Ellipse) Modify (Trim , Join , Chamfer , Fillet) and Tutorials ****Engineering drawing:** **Dimensioning:** Main rules in dimensions position and details in drawing. Rules in dimensions position for arcs and circles. Exercise in applied dimensions on projection view. [6 hrs] **Sections** Sections definition. Find sections and section planes and half section projection. Exercise in half section projection. [8 hrs] ****Descriptive Geometry:**

	Definition and Description of the Auxiliary planes. Exercise in auxiliary planes. [3 hrs]. **CAD [2.5 hrs] Draw Hatch / Line type / Line width / Color and Tutorials Array (Rectangular and Polar) and Tutorials **Engineering drawing: **Third view estimate:** Important steps to estimate third unknown projection depending on the known two projections. Exercise in estimate third unknown projection. [15 hrs] **Descriptive Geometry: **Development of surface:** Introduction and describe development of surface. Exercise in projection triangular shape. Exercise in projection quadrilateral shape by rotation method. [2 hrs] **CAD [2 hrs] Dimensions and Tutorials
Learning and Teaching Strategies	
Strategies	-Give the student theoretical lectures prepared by the lecture and explain the subject of drawing in details and draw it in front of the students. -Get some samples of the subject of drawing to the class to conform the understanding and to know how it works. -Discuss some student's mistakes and how to avoid them

Student Workload (SWL)			
Structured SWL (h/sem)	78	**Structured SWL (h/w)**	5
Unstructured SWL (h/sem)	97	**Unstructured SWL (h/w)**	6.5
Total SWL (h/sem)	175		

Module Evaluation					
		Time/ Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
	Quizzes	2	10% (10)	5, 10	LO # 1-11

Formative assessment	**Assignments**	15	15% (15)	Continuous	LO # 1-11
	Projects / Lab.	Lab. 5	10% (10)	Continuous	LO # 1-11
	Report	5	5% (5)	Continuous	LO # 1-11
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	8	LO # 1-11
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered :
Week 1	****Engineering drawing:** Introduction. Standard drawing equipment. ****Descriptive Geometry:** Introduction to descriptive geometry.
Week 2	****Engineering drawing:** **Lettering:** Lines kinds in drawing. Kufi font in the writing of letters and numbers. The paper types and design with title table. ****Descriptive Geometry:** Projection theory with standard planes.
Week 3	****Engineering drawing:** Draw lines and circles. ****Descriptive Geometry:** Methods of projection. Projection of a point. Exercise in projection of a point.
Week 4	****Engineering drawing:** **Engineering Processes:** Applied geometry in eng. drawing. Exercise in important eng. geometry (Drawing a perpendicular line to bisector, Dividing a line, Drawing a tangent to circle from point, Drawing an ellipse). ****Descriptive Geometry:** Projection of straight line. Exercise in projection of straight line.
Week 5	****Engineering drawing:** **Introduction to (ISO); Pictorial drawing:** Real model in true dimensions. Draw cube shape with ovals by used four centers method. ****Descriptive Geometry:** Exercise in projection of straight line by rotation method.

Week 6	****Engineering drawing:** Exercise in pictorial drawing. ****Descriptive Geometry:** The status of the straight line in space.
Week 7	****Engineering drawing:** Exercises in Engineering Drawing (ISO).
Week 8	****Engineering drawing:** **Three Projections:** Three projections definition (front, top and side view).
Week 9	****Engineering drawing:** Draw in first angle. Exercises in projection.
Week 10	****Engineering drawing:** **Dimensioning:** Main rules in dimensions position and details in drawing. Rules in dimensions position for arcs and circles. Exercise in applied dimensions on projection view. ****Descriptive Geometry:** Definition and Description of the Auxiliary planes. Exercise in auxiliary planes.
Week 11	****Engineering drawing:** **Sections** Sections definition. Find sections and section planes and half section projection. ****Descriptive Geometry:** Exercise in auxiliary planes.
Week 12	****Engineering drawing:** Exercise in half section projection.
Week 13	****Engineering drawing:** **Third view estimate:** **(Part 1)** Important steps to estimate third unknown projection depending on the known two projections. ****Descriptive Geometry:** **Development of surface:** Introduction and describe development of surface. Exercise in projection quadrilateral shape by rotation method.
Week 14	****Engineering drawing:** **(Part 2)** Important steps to estimate third unknown projection depending on the known two projections. ****Descriptive Geometry:** Exercise in projection triangular shape.

Week 15	****Engineering drawing:** Exercise in estimate third unknown projection. ****Descriptive Geometry:** Exercise in projection quadrilateral shape by rotation method.
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	**Introduction to CAD packages** 1- Menus/ format/ Draw / Tools / Dimension / Modify 2- Tool bars
Week 2	**Drawing area** 1- Command bar / Task bar 2- Drawing Grid / Snap Mode / Ortho Mode / Object Snap and Tutorials
Week 3	**Coordinate system** 1- Absolute and relative Coordinate 2- Cartesian and Polar coordinates
Week 4	**Two dimensional drawing** 1- (Line , Circle , Rectangle , Arc , Polygon) 2- Modify (Erase , Copy , Rotate , Mirror , Offset) and Tutorials
Week 5	1 -Two Dimensional Drawing (Polyline , Helix , Donut , Ellipse) 2- Modify (Trim , Join , Chamfer , Fillet) and Tutorials
Week 6	1- Draw Hatch / Line type / Line width / Color and Tutorials 2- Array (Rectangular and Polar) and Tutorials
Week 7	**Dimensions and Tutorials**

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	1- K. Venkata Reddy, "Text book of Engineering Drawing", BS Publications, 2008. 2- 1986 , كتاب الرسم الهندسي ,عبد الرسول الخفاف 3- الهندسة الوصفية ، د. يوسف نيقولا،	Yes
Recommended Texts		
Websites	https://me.uotechnology.edu.iq/index.php/ar/	

APPENDIX:

GRADING SCHEME				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.