

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Computer Aided Graphics		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	COAG 111		
ECTS Credits	4.00		
SWL (hr/sem)	100		
Module Level	UGI- two	Semester of Delivery	two
Administering Department	Engineering	College	Civil Engineering
Module Leader	Dr. Khawla kareem kawther	e-mail	40232@uotechnology.edu.iq
Module Leader's Acad. Title	Dr. lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Dr. Khawla kareem kawther	e-mail	40232@uotechnology.edu.iq
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CEED104	Semester	ONE
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims

أهداف المادة الدراسية

1. The aim of this course is to introduce technical drawings and their use in civil engineering to students, enabling them to read and analyze project drawings and to design and/or revise 2D technical drawings by using related CAD software.
2. Educate the students in reading and understanding engineering and architectural drawings.
3. Train students in the use of the computer as a drafting tool.
4. Provide students the ability to develop and produce formal engineering drawings according to standard drafting practice using Computer Aided Design (CAD).
5. The course will provide hands-on practice of CAD through the use of the specialized CAD software.
6. Improve the student's ability to visualize geometrical constructions and provide them with the latest trends in computer-aided design which are used in modern civil engineering applications.
7. Encourage students to incorporate computer-based design tools in subsequent structural courses.

Module Learning Outcomes

مخرجات التعلم للمادة الدراسية

This course contributes to fulfillment of the following performance indicators:

1. Execute CAD commands for drawing entities, editing, drawing setup, viewing and plotting. Gain a design experience using software drawing tools and techniques.
2. Prepare civil technical drawings using computer aided drafting technology. Construct a functional prototype based on design documentation. Read and interpret civil engineering drawings.
3. Communicate using visual tools such as architecture and civil engineering drawings, graphics, diagrams, charts, plots, schematics.

Indicative Contents

المحتويات الإرشادية

Introduction to Computer Aided Graphics.

- Principles and practice of sketching. Introduction to 2D modelling.
- Theory and practice on plans, sections and Orthographic Views.
- Create Plans and sections of objects and buildings. Dimension and scale drawings for plotting.
- Design and working drawings.
- Plotting
- Working Drawings and Assemblies.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	<p>Course Methodology: Lecture by instructor, Problem solving assignment, Laboratory work, Computer Based Instruction.</p> <p>Course Evaluation Methods:</p> <p>Drawing exam in computer, Take-home quiz, Experiment report (Drawing).</p> <p>Drill-and-practice: Drill and practice provide opportunities or students to repeatedly practice the skills that have previously been presented and that further practice is necessary for mastery.</p> <p>Tutorial activity includes both the presentation of information and its extension into different forms of work, including drill and practice, and simulation.</p> <p>Simulation software can provide an approximation of reality that does not require the expense of real life or its risks.</p> <p>Civil Problem Solving, This approach helps to develop specific problem in civil engineering solving skills and strategies.</p>
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	5% (5)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	5% (5)	Continuous	
	Midterm Exam1	1 hr	15% (15)	7	LO # 5, 8 and 10
Summative assessment	Midterm Exam2	1 hr	15% (15)	14	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction; Engineering Graphics as a language, Board Drawing vs. Computer- Aided Drawing, Introduction to AutoCAD in Civil Engineering
Week 2	Drawing Tools and Instruments, Corresponding CAD facilities , Structures of AutoCAD Mechanical, Model Creation in AutoCAD, Structure of Autodesk Inventor Professional, Drawing Paper/Drawing Template Scaling, Types of Lines, Precedence of Lines, Lettering,
Week 3	Layer creation in AutoCAD, Geometrical Constructions, View drawing in AutoCAD and sketching in Inventor, rawing /Sketching and Editing Commands, Model creation; Importing an AutoCAD file into Inventor environment, 2-Dimenional Sketching in Inventor, Creation of right prisms, extrusion process, Rounds and fillets
Week 4	Orthographic Projection; Principle Picture Planes, Principal views, 1st.Quadrant, 3rd.Quadrant projections, Object Orientation, Selection of Views, Projections of a point, Views of lines, flat planes and objects, Order of Drawing, Creating views in Autodesk Inventor Professional Environment
Week 5	Revolve process; creating revolved parts and features, Decal, Importing Excel files into Inventor, Loft, 2D Sketching, Sweep, Rib, Split and Shell Process', Exercises on Model creation, Inspection tools of AutoCAD and Inventor Environments, Dimensioning format/ Rules, Non-functional and Functional Dimensions, Size Tolerances, IT-Grading System, General Tolerances, Dimensioning tools of AutoCAD Mechanical and Inventor Professional Environments, Dimensioning exercises
Week 6	Auxiliary Views, Sectional Views, Schematic Drawing in AutoCAD.
Week 7	Mid-term Exam 1
Week 8	Working Drawings and Assemblies
Week 9	Working Drawings and Assemblies
Week 10	Working Drawings and Assemblies
Week 11	Working Drawings and Assemblies
Week 12	Working Drawings and Assemblies
Week 13	Working Drawings and Assemblies
Week 14	Mid-term Exam 2
Week 15	Preparatory week before the final Exam
Week 16	The final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Lab 1: Introduction, and Drawing Tools, Draw lines, circles, square and polygon. Layers, Dimensions and Text in AutoCAD.
Week 2	Lab 2: Modify commands, trim, extend.....
Week 3	Lab 3: Drawing a plan of small building (house), walls, doors, windows....
Week 4	Lab 4: architectural symbols and terminology of construction materials. Drawing section of house, walls, doors, windows....
Week 5	Lab 5: Working Drawings and Assemblies
Week 6	Lab 6: Working Drawings and Assemblies
Week 7	Lab 7: Working Drawings and Assemblies

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Mastering Autodesk Inventor 2015 and Autodesk Inventor LT 2015: Autodesk Official Press, Curtis Waguespack, ISBN: 978-1-118-86213-1	Yes
Recommended Texts	2. Engineering Drawing and Graphic Technology- International Edition, Thomas E. French, Charles J. Vierck, Robert J. Foster, McGraw-Hill, Inc.1993 ISBN 0-07-022347-5 3. Engineering Drawing and Design-Sixth Edition, C. Jensen, J.D. Hesel, D.R. Short, McGraw-Hill, 2002, ISBN 0-07-821343-6 (T 353 J47 2002) 4. Technical Drawing-Fourteenth Edition, F. E. Giesecke, A. Mitchell, H. C. Spencer, I.L. Hill, J.T. Dygdon, J.E., Novak, Prentice-Hall, Inc., 2012, ISBN 0-13-178446-3 (T 353 T43 2003) 5. Mechanical Engineering Drawing-Self Taught, Jashua Rose, http://www.gutenberg.org/files/23319/23319-h/23319-h.htm	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering	

Grading Scheme

مخطط الدرجات

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	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks 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.