MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Programming I**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**PRE103**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Zahraa Ghanim Youins Al-alaf		**e-mail**	E-mail; zahraaalmajidi@uomosul.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name:		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Teaching the student to recognize the basic rules for dealing with and managing the computer to help him achieve Projects, print matters, prepare statistics and graphs, create presentations, design engineering graphics, and more.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**A- Cognitive goals** 1. The student's comprehension of the material is the ability to analyze and apply what he learned practically on the computer 2. That the evaluation is done by presenting the material to the students in the laboratory and then applying what they learned from them 3. Software knowledge 4. Knowledge of programs creating presentations

	5. Knowledge of applied software **B- The soft skills objectives of the course** 1. Turn on the computer 2. Learn the skill of editing, word processing and typing using Microsoft Word 3. Learn the skill of making and creating tables, curves and statistics in Microsoft Excel 4. Learn the skill of making presentations with Microsoft PowerPoint.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Computer education and Microsoft Office programs can include several different topics. Here is some basic how-to content that computer education and the Microsoft Office suite can cover: Computer basics: Computer concept and its basic parts. Operating system and user interface. Learn about the keyboard and mouse and how to control them. Take advantage of system files and folders. Microsoft Word: [10hr] Create and format documents. Insert and format text, images, tables, and graphics. Use styles, headings, and lists. Add margins, numbering, and undo. Prepare printing and shared documents. Microsoft Excel: [10hr] Create and format spreadsheets. Entering data and doing simple calculations. Create formulas and functions for complex calculations. Use graphs and charts to visualize data. Analyzing data and creating dynamic tables. Microsoft PowerPoint: Create presentations. [10hr] Formatting slides and adding text, images and graphics. Use effects and transitions between slides. Add audio and video to presentations. Make presentations and control slideshows.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Word software environment ,Basics of using Word
Week 2	Organizing, formatting and page settings
Week 3	Create and coordinate tables and insert pictures & charts
Week 4	Formatting tables and inserting pictures
Week 5	References & Mailings
Week 6	Complement the inclusion of graphics and spell checking
Week 7	Excel environment ,Basics of using Excel
Week 8	Mid-term Exam + Organizing worksheets and using formulas
Week 9	PowerPoint environment ,Basics of using PowerPoint
Week 10	Draw shapes and insert commands, slides, pictures, and videos
Week 11	Transition effects and motion
Week 12	Excel software environment ,Basics of using Excel
Week 13	Organizing, Tab insert &formatting and page settings
Week 14	Excel functions
Week 15	Charts in Excel
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Computer application basics of using the Word program
Week 2	Lab 2: Computer application for organization, coordination and page settings
Week 3	Lab 3: Computer application for Create , coordinate tables and insert pictures
Week 4	Lab 4: Formatting tables and inserting pictures
Week 5	Lab 5: References & Mailings
Week 6	Lab 6: Complement the inclusion of graphics and spell checking
Week 7	Lab 7: Computer application basics of using PowerPoint program
Week 8	Lab 8: Mid-term Exam
Week 9	Lab 9: Computer application draw shapes and insert commands, slides, pictures, and videos
Week 10	Lab 10: Computer application of transition effects and motion
Week 11	Lab 11: Computer application basics of using the excel program
Week 12	Lab 12: Computer application for organizing worksheets and using formulas
Week 13	Lab 13: Computer application for Excel Organizing, Tab insert &formatting and page settings
Week 14	Lab 14: Computer application for Excel functions
Week 15	Lab 15: Computer application for Excel charts

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- Bernard V. Liengme /AGuide to Microsoft excel 2013 for scientists and engineers 2- Computer basics and office applications (Part 1) 3- a.m.d. Ziyad Muhammad Abboud, Prof. Dr. Ghassan Hamid Abd Al-Majid, Prof. Dr. Amir Hussein Murad, M. Bilal Kamal Ahmed (2014-2015)	Yes
Recommended Texts		No
Websites	https://www.microsoft.com/ar-iq/ https://scholar.google.com/schhp?hl=ar https://www.researchgate.net/ https://orcid.org/ https://libgen.is/ https://www.isbniraq.org/?product=%D8%A3%D8%B3%D8%A7%D8%B3%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D8%AD%D8%A7%D8%B3%D9%88%D8%A8-%D9%88%D8%AA%D8%B7%D8%A8%D9%8A%D9%82%D8%A7%D8%AA%D9%87-	

	%D8%A7%D9%84%D9%85%D9%83%D8%AA%D8%A8%D9%8A%D8%A9-%D8%A7

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.

DULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Drawing I**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒**Practical** ☐ **Seminar**	
Module Code	**PRE105**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Sura M. Ali		**e-mail**	swazaal@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant teacher		**Module Leader's Qualification**	MSC	
Module Tutor	Zaid Salah Aldan		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. the student teach basics of engineering drawing 2. Learn the engineering processes such as drawing the parallel and perpendicular lines, bisection of angles. 3. Drawing geometric shapes. 4. Draw the cycle and arc with different tangent. 5. Application the scale on the all objects. 6. Setting the dimensions 7. Conclusion the orthographic projection in the third angle. 8. three- dimension drawing using isometric method

Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1. The student will be able on understand the concepts of basic engineering drawing with create and draw different geometric shapes with any arcs. 2. Deal with any scale in the sit 3. Read the maps and dimensions in the sites. 4. To imagine any solid and hollow something with the possibility of drawing it. 5. Converting 3- dimensional shapes into 2- dimensional with different view (top view, front view and side view)
Indicative Contents **المحتويات الإرشادية**	Indicative content includes the following. **Introduction to engineering drawing** Engineering drawings specify the requirements of a component or assembly which can be complicated. Standards provide rules for their specification and interpretation. Standardization also aids internationalization, because people from different countries who speak different languages can read the same engineering drawing, and interpret it the same way. [4 hrs.] **Drawing of letters and type of line and pens** Lettering in Engineering drawing is the process of writing titles, subtitles, symbols, dimension value, notes, and other elements on a drawing. Lettering is used to specify details of an object on a drawing. The lettering in engineering drawing holds a very important factor which determines the quality of an engineering drawing. All the information about an element on a drawing is always indicated the form of lettering A variety of line styles graphically represent physical objects. Types of lines include the following:(visible, hidden, center, cutting plane). [4 hrs.] **Planning of sheet and millimeters units** Before the starting engineering drawing should plan how going to make best use of the space, divide the sheet on tittle area and work area. It is important to think about the number of views drawing will have and how much space you will use of the paper [4 hrs.] **Engineering Processes** Use different method and different tools to draw the engineering processes such as drawing the parallel and perpendicular lines, bisection of angles . [4 hrs.] **Drawing of arcs** Before the drawing circle or arc must be determined the center point and radius, and on the arc must be now the start end tangent and type of tangent to can be draw the arc. [8 hrs.] **Geometric shapes (polygon and ellipse)** A polygon is a two-dimensional closed shape that is made by three or more line segments. Thus, polygons can be categorized on the basis of different criteria which are:(The number of sides, Angles, Measurement of sides and angles (Regular Polygons)) Ellipse draw by two methods: four center method and ray method. [4 hrs.] **Drawing scale** Mean it change the size of object by multiplying each of the lengths by scale factor to

	make it larger or smaller. [4 hrs.] **Dimensions** This are set according the drawing laws to give indicated on the engineering drawing to define the size characteristics such as length, height, breadth, diameter, radius, angle, etc. [4 hrs.] **Projections** Conclusion the orthographic projection in the third angle method, and Converting 3-dimensional shapes into 2- dimensional with different view (top view, front view and side view). [12 hrs.] **Isometric drawing** Isometric drawing is particular drawing style where the angle between the X, Y and Z axes are all 120', and there is no perspective. An Isometric drawing is pictorial representation of on object in which all three dimension. [12 hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	After explain in the lecture the concepts of basic rules drawing engineering in class the student will able to solve some problems in the class with discuss the difficulties and problems that faced him and then he solve other problems in the home thus, the student becomes familiar with each topic separately. By the end of the semester the student will be familiar with all the rules of engineering drawing and translating maps for various engineering projection. Development the imagine for a solid and hollow something with the possibility of drawing it, and Converting shapes from 3-dimensional into 2- dimensional with different view.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	6 and 11	LO #1, #2 and #10, #11
	Assignments	1	5% (5)	12	LO #3, #4 and #6, #7
	Practical	1	15% (15)	Continuous	All
	Home work	1	15% (15)	Continuous	All
Summative assessment	Midterm Exam	2hr	15% (15)	8	LO #1 - #7
	Final Exam	3hr	40% (40)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to engineering drawing, engineering drawing define and tools using
Week 2	Drawing of letters and type of line and pens
Week 3	Planning of sheet and millimeters units
Week 4	Engineering Processes
Week 5	Drawing of arcs
Week 6	Drawing of arcs and exam
Week 7	Geometric shapes (polygon and ellipse)
Week 8	Drawing scale Midterm Exam
Week 9	Dimensions
Week 10	Projections
Week 11	Projections and exam
Week 12	Projections
Week 13	Isometric
Week 14	Isometric

Week 15	Isometric
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering drawing and graphic technology Handbook, Thoumas,14 th edition (2010).	Yes
Recommended Texts		No
Websites	https://books.google.iq/books/about/Engineering_drawing_and_graphic_technolo.html?!d=mch-GSLgWKkC&redir_esc=y	

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.

DULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Drawing II**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒**Practical** ☐ **Seminar**	
Module Code	**PRE111**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Sura M. Ali		**e-mail**	swazaal@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant teacher		**Module Leader's Qualification**	MSC	
Module Tutor	Zaid Salah Aldan		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives **أهداف المادة الدراسية**	Get acquainted with the program interface and the various toolbars for development Design frameworks and prototypes for projects Training in the AutoCAD program and dealing with all its tools professionally, drawing geometric shapes, polygons, the ellipse, setting dimensions, creating different layers commensurate with the needs of the engineer in various specializations, and learning how to draw from walls, columns, pipes, and so on. Developing the skill of division, creating plans, and enhancing structural drawings and three-dimensional models. Finally, practice how to draw an integrated project.

Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	Use the program and know its capabilities. Through this chapter students are able to create two-dimensional and three-dimensional drawings and diagrams through a detailed explanation of the advantages of AutoCAD, realizing the basic concepts in the AutoCAD two- and three-dimensional program. Developing skills in the field of engineering drawing, deducing heights and dimensions in drawing, as well as the possibility of placing them on different drawings , Doing colorful designs and multiple specializations. And dealing with keyboard shortcuts on the computer to achieve speed in work and skill. Possess the ability to deal with the AutoCAD program to serve the work and reduce the possibility of error. Gain the skill of drawing diagrams with colored interfaces. Draw everything that comes to mind in his specialty. As well qualification to deal with other engineering programs. Working in external companies as a specialist in AutoCAD drawing
Indicative Contents **المحتويات الإرشادية**	Indicative content includes the following. **Introduction to AutoCAD programs.** Get acquainted with the program interface Ribbons tool boards Setting the program interface Work file preparation Use drawing tools Open a new job file Save and open work files Undo and delete commands Field of view control commands Shortcut Menus [4 hrs.] **Drawing toolbar** Use the coordinate system in the drawing Draw straight lines Use the Polyline command Draw curves using the Polyline command Draw circles Draw arcs Draw Spline and Revision Cloud elements Draw ellipses Draw polygons Use the Sketch command Draw parallel lines, loops and points Draw rectangles Dynamic input of coordinates [8 hrs.] **Grid and Object Snap** Grid usage Grips control points Auto track Attraction Properties Object Snap Tracking property Geometry Calculator Quick Calculator Ortho mode

	Polar tracking Hatching [8 hrs.] **Modifying toolbar** Copy و Move Offset Polar Array Rectangular Array Path Array Mirror Extend Stretch Scale and Rotate Fillet Chamfer Trim Explode and Break Lines to Polylines Join [8 hrs.] **Draw ellipses and polygons** Use an ellipse command to draw ellipse and semi or part of ellipse , and use polygon command to draw any polygons. [4 hrs.] **Layers and text** Create Layers Layer properties control Control of layers using the Layers set Named Layer Filter [4 hrs.] **Dimensions** Continuous, Baseline Dimensions radius Jogged and Arc Length Editing Dimensions Dimension Styles: • Lines • Symbols and Arrows • Text • Leaders • Leaders • Multi leader Styles • Fit [4 hrs.] **Print**

	Plot Styles Create a Color Dependent Plot Style Set up the Color Dependent printing specification Create a Named Plot Style [4 hrs.] **Projection** Practice drawing projections using AutoCAD programs. [4 hrs.] **Isometric** Draw three dimension object by use iso snap command[8 hrs.] **Draw solids and simply three Dimensional shape** Draw 3D Modeling by use Solid command and rotate the object to look at him from multi angle. [4 hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The student learns the skills of using the AutoCAD program from scratch until drawing horizontal plans and plans Where everything related to the program will be explained, including drawing commands, modification commands, coloring commands, annotation, writing, and layer creation The explanation will not be theoretical, but there will be a practical application for each of the commands in the laboratory in addition to the homework, as well as the student draws several projections to master the commands that he learned and put the necessary dimensions and clarifications, as well as drawing three-dimensional figures. At the end of the course, the student will be able to draw diagrams, projections, and models by himself, with knowledge of all the program commands. Thus, the student will also be able to draw any form of two-dimensional and three-dimensional geometry

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 12	LO #1, #2 and #10, #11
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	Home work	1	15% (15)	Continuous	All
Summative assessment	Midterm Exam	2hr	15% (15)	8	LO #1 - #7
	Final Exam	3hr	40% (40)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to AutoCAD programs.
Week 2	Drawing toolbar and Modifying toolbar
Week 3	Grid and Object Snap
Week 4	Drawing toolbar and Modifying toolbar
Week 5	Drawing toolbar and Modifying toolbar
Week 6	Drawing toolbar and Modifying toolbar
Week 7	Grid and Object Snap
Week 8	Draw ellipses and polygons
Week 9	Layers and text
Week 10	Dimensions
Week 11	Print
Week 12	Projection
Week 13	Isometric
Week 14	Isometric
Week 15	Draw solids and simply three Dimensional shape
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	AutoCAD 2020 Beginners Guide, ,7th Edition, CADFolks An Introduction to AutoCAD for Beginners	No
Recommended Texts		No
Websites	https://ketabton.com/index.php/book/13747	

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
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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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics II**			**Module Delivery**	
Module Type	**Basic learning activities**			☒**Theory** ☒**Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PRE107**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Ghufran Faris Abdullah alrahhawi		**e-mail**	ghufranalrahhawi@uomosul.edu.iq	
Module Leader's Acad. Title	Ass. Lecturer		**Module Leader's Qualification**	Ms.c	
			e-mail	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	1/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Mathematics I	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objective of the course is to present Transcendental function ,Application of exponential and logarithimic function ,Hyperbolic Trigonometric function and inverse Hyperbolic Trigonometric function, Methods of integral, Complex numbers and Differential equation.
Module Learning Outcomes	It is expected from the student who passes this module learn the following topics: 1. Transcendental function 2. Application of exponential and logarithimic function

مخرجات التعلم للمادة الدراسية	3. Hyperbolic Trigonometric function and inverse Hyperbolic Trigonometric function 4. Methods of integral. 5. Complex numbers 6. Differential equation
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. 1. Transcendental function logarithimic function , inverse Trigonometric functions and exponential function with derivative and integral [12 hrs.] 2. Application of exponential and logarithimic function. [4 hrs.] 3. Hyperbolic Trigonometric function and inverse Hyperbolic Trigonometric function with derivative and integral. Methods of integral. [8 hrs.] 4. Methods of integral Integration by part, Integration by Trigonometric subistitutation and completing squares, Integration by partial fractional, Integration involving, Integration by linear root contain 1st degree expressions and Integration by fractional function contains sine and cosine, Integration by odd and even and high power for trigonometric functions. [24 hrs.] 5. Complex numbers. [4 hrs.] 6. Differential equation separation of variables – homogenues equations, linear cofactor – exact equations – integral factor. [8hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students The usual theoretical presentation method using the writing board and depending on the method (how and why) of the subject and according to the curriculum of the subject.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 14	LO #1, and #13
	Assignments	6	10% (10)	3,5,7,12,13 and 15	LO #1, #2,#3#4,#5and #6
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report				
Summative assessment	Midterm Exam	2hr	20% (20)	10	LO #1 - #4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1-3	Transcendental function: logarithimic function , inverse Trigonometric functions and exponential function with derivative and integral
Week 4	Application of exponential and logarithimic function. **(Quiz1)**
Week 5-6	Hyperbolic Trigonometric function and inverse Hyperbolic Trigonometric function with derivative and integral.
Week 7-12	Methods of integral: Integration by part, Integration by Trigonometric subistitutation and completing squares, Integration by partial fractional, Integration involving, Integration by linear root contain 1st degree expressions and Integration by fractional function contains sine and cosine, Integration by odd and even and high power for trigonometric functions . **(Mid Exam)**
Week 13	Complex numbers.
Week 14	Differential equation: separation of variables – homogenues equations. **(Quiz 2)**
Week 15	Differential equation: linear cofactor – exact equations – integral factor.
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Calculus I By: Thomas	Yes
Recommended Texts	Calculus I By: Thomas 2018	No
Websites	https://www.coursera.org/search?query=Calculus	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر		
	Material Covered	
Week 1		
Week 2		
Week 3		
Week 4		
Week 5		
Week 6		
Week 7		

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Mechanics II (Dynamics)**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PME 122**				
ECTS Credits	**8**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Ayad M. Ahmed Alwaise		**e-mail**	E-mail; Ayad_waise@yahoo.com	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name: Sarah Saad Abduljabbar		**e-mail**	E-mail	
Peer Reviewer Name	me		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Engineering Mechanics I PRE 112	**Semester**	First
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	To develop problem solving skills and understanding of dynamics and applications physics theory through the application of techniques. To understand displacements, velocity and accelerations system. This course deals with the basic concept of Mechanical Engineering. This is the basic subject for all Dynamics and forces applications. To understand concept of work and energy problems. The forces that act on an object can be external, such as gravity, friction, or air resistance, or they can be internal, such as the forces that hold the particles of an object together
Module Learning Outcomes	Important: Write a Learning Outcomes, better to be equal to the number of study weeks.

مخرجات التعلم للمادة الدراسية	Dynamics is studying how things move and how different forces affect how they move. It helps us understand how planets move in space and how machines work. It's really important in science and helps us learn about how things in the world move.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Dynamics is a branch of physics that deals with the study of motion and forces acting on a body. It is the study of how objects move, interact with each other, and respond to different forces. Dynamics is an important subject in physics, and it is used to explain many natural phenomena, from the movement of planets to the behavior of tiny particles. [15 hrs.] Dynamics is concerned with the motion of objects, and it is often used to describe the movement of objects in three dimensions. In dynamics, the focus is on understanding how forces affect the motion of an object. The forces that act on an object can be external, such as gravity, friction, or air resistance, or they can be internal, such as the forces that hold the particles of an object together. Dynamics is a complex subject, and it requires a deep understanding of physics and mathematics to fully grasp its principles. Dynamics is a fundamental part of physics, and it is used in many different fields, from engineering to astronomy. [15 hrs.] It deals with the study of forces acting on objects that are not moving. The primary objectives of Dynamics are to determine the forces acting on an object, the moments of forces acting on an object, and the equilibrium conditions of an object. The study of Dynamics is essential for the design of structures, such as bridges, buildings, and machines, to ensure that they are safe and reliable. [10 hrs.] Revision problem classes [6 hrs.] The study of dynamics is also important in understanding the behavior of materials under different conditions. Understanding dynamics is crucial in the design and construction of machines and structures, as it allows engineers to predict how these objects will behave under different forces. In astronomy, dynamics is used to study the movement of planets and stars, and it is used to predict the behavior of celestial bodies over time. As such, dynamics is a critical subject in physics, and it is essential for anyone who wants to study the natural world in depth. [15 hrs.]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: Dynamics is studying how things move and how different forces affect how they move. It helps us understand how planets move in space and how machines work. It's really important in science and helps us learn about how things in the world move.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Centroid
Week 2	Moment of Inertia
Week 3	Frictions
Week 4	Introduction to engineering mechanics (Dynamics)
Week 5	Rectilinear Kinematics: Continuous Motion
Week 6	Rectilinear Kinematics: Continuous Motion
Week 7	Rectilinear Kinematics: Erratic Motion
Week 8	General Curvilinear Motion
Week 9	General Curvilinear Motion

Week 10	Motion of a Projectile
Week 11	Absolute Dependent Motion Analysis of Two Particles
Week 12	Absolute Dependent Motion Analysis of Two Particles
Week 13	The Work of a Force
Week 14	The Work of a Force
Week 15	Principle of Work and Energy
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Mechanics (Dynamics) Hibbeller 13rd Edition Meriam	Yes
Recommended Texts		No
Websites	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiGgIKc1rH_AhXthf0HHW57BZwQFnoECBgQAQ&url=https%3A%2F%2Fwww.amazon.com%2FEngineering-Mechanics-Dynamics-Russell-Hibbeler%2Fdp%2F0132911272&usg=AOvVaw2WNn15UV1_GQGx2lAoVDpA	

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Mechanics I (Statics)**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PME 112**				
ECTS Credits	**8**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Ayad M. Ahmed Alwaise		**e-mail**	E-mail; Ayad_waise@yahoo.com	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name: Sarah Saad Abduljabbar		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of statics and applications physics theory through the application of techniques. 2. To understand forces, Moments and equilibrium system. 3. This course deals with the basic concept of Mechanical Engineering. 4. This is the basic subject for all statics and forces applications. 5. To understand concept of moment and forces problems.
Module Learning	Important: Write a Learning Outcomes, better to be equal to the number of study weeks.

Outcomes مخرجات التعلم للمادة الدراسية	Statics is a type of science that helps people design safe and strong structures, like bridges and buildings. It's all about studying how things stay in place even when they are not moving. This is important for engineers and physicists who want to understand how materials react to different forces, like the ones that happen when an airplane takes off or lands. By studying statics, people can make better things and improve technology.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Newton's Theory Statics is a type of science that helps people design safe and strong structures, like bridges and buildings. It's all about studying how things stay in place even when they are not moving. This is important for engineers and physicists who want to understand how materials react to different forces, like the ones that happen when an airplane takes off or lands. By studying statics, people can make better things and improve technology. [15 hrs.] Statics is a branch of mechanics that deals with the study of stationary objects and systems under the action of external forces. In other words, statics is concerned with the analysis of forces acting on objects that are not in motion. It is an essential subject for engineers and physicists as it is the foundation for the study of mechanics, which is the branch of physics that deals with the motion of objects. Statics is a crucial sub-topic of mechanics and is essential in engineering and physics courses. [15 hrs.] It deals with the study of forces acting on objects that are not moving. The primary objectives of statics are to determine the forces acting on an object, the moments of forces acting on an object, and the equilibrium conditions of an object. The study of statics is essential for the design of structures, such as bridges, buildings, and machines, to ensure that they are safe and reliable. [10 hrs.] Revision problem classes [6 hrs.] The study of statics is also important in understanding the behavior of materials under different conditions. It helps engineers and physicists to understand how different materials react to external forces and how they can be designed to withstand these forces. For example, in aerospace engineering, the study of statics is essential in the design of aircraft and spacecraft to ensure that they can withstand the forces of takeoff, landing, and flight. In general, the study of statics is crucial for the development of new technologies and the improvement of existing ones. [15 hrs.]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to engineering mechanics
Week 2	Second Newton's Law
Week 3	Forces and Resultant
Week 4	Forces and Resultant
Week 5	Moment
Week 6	Moment
Week 7	Moment of Couple
Week 8	Free body diagram
Week 9	Equilibrium

Week 10	Equilibrium
Week 11	Centroid
Week 12	Centroid
Week 13	Moment of Inertia
Week 14	Moment of Inertia
Week 15	Frictions
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Mechanics (Statics) Hibbller 13rd Edition Meriam	Yes
Recommended Texts		No
Websites	https://www.google.com/search?client=firefox-b-d&q=engineering+mechanics+statics&si=AMnBZoFs9uB3Z_GHFPC_zPRokU4h1kiG1kM_Tt6zs41M5kAusrUywe1ttS3dYXXzQp9e0wyyHZ8lpNloWGPcATvDW7ntpdhPPVrc6JSu-QxYEZXpC1KVRcv7g6v9Xld3sYvWisKUoKjk&ictx=1&ved=2ahUKEwj18Lev0bH_AhUfxgIHHcJNDfMQnZMFegQIVRAC	

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**General Geology I**			**Module Delivery**	
Module Type	Basic learning activities			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PRE106**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Rahma Sail Abd		**e-mail**	Rahma.saeel86@uomosul.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	1/06/2023		**Version Number**	1	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objectives of a geology module typically aim to provide students with a comprehensive understanding of the following: Earth's Structure and Processes: Students learn about the internal structure of the Earth, the processes that shape its surface, and the interactions between its various components (such as the lithosphere, hydrosphere, atmosphere, and biosphere). Rocks and Minerals: Students study the formation, classification, and properties of rocks and minerals, including their identification, composition, and geological significance. Plate Tectonics: Students explore the theory of plate tectonics, which explains the movement of Earth's lithospheric plates, the formation of mountains, earthquakes, and volcanic activity. Geological Time and History: Students gain an understanding of the Earth's geological history, including the development of different geological time scales, the processes of fossilization, and the evolution of life on Earth.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	This learning outcome implies that upon completing the geology module, students should have achieved the following: 1- Knowledge of Geological Processes: Students should have a solid understanding of the fundamental processes that shape the Earth, such as plate tectonics, erosion, weathering, and deposition. 2- Understanding of Geological Principles: Students should be familiar with key geological principles, including rock formation and identification, geological time, stratigraphy, and the interpretation of geological maps and cross-sections. 3- Application of Geology: Students should be able to apply their knowledge of geology to analyze and interpret geological phenomena, such as the formation of mountains, earthquakes, volcanoes, and the distribution of natural resources. They should also be capable of recognizing and assessing geological hazards and their potential impact on human activities. 4- Critical Thinking and Problem-Solving: Students should develop critical thinking skills and be able to apply geological concepts to solve problems and make informed decisions in both academic and real-world contexts. 5- Communication of Geological Concepts: Students should be able to effectively communicate geological concepts, findings, and interpretations using appropriate scientific terminology and conventions, both in written and oral forms.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Introduction to Geology, Cosmology & Birth of the Earth (3 hrs.) Definition of the components of the Earth’s interior (3 hrs.) Plate tectonics(3 hrs.) Crystal Form mineral (crystallogy) (3 hrs.) Physical properties of mineral (6 hrs.) Classification of mineral (6 hrs.) Geologic time scale and fossils (3hrs.) rocks & The rock cycle (3hrs.) Classification of igneous rocks (6 hrs.)

	Types of sedimentary rocks: Chemical and detrital sedimentary rocks (6 hrs.) Metamorphic rocks (3hrs.)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Geology, as a scientific discipline, involves the study of the Earth's structure, composition, history, and processes. The learning and teaching strategies employed in geology often focus on a combination of theoretical knowledge, practical fieldwork, laboratory analysis, and interactive discussions. Here are some common learning and teaching strategies used in geology: Fieldwork: Fieldwork plays a crucial role in geology education. Students are often taken to geological sites, such as outcrops, mountains, and coastal areas, where they can observe geological features firsthand. Field trips allow students to apply theoretical concepts, practice data collection techniques, and develop their observational and interpretive skills. Laboratory work: Geology involves various laboratory techniques for analyzing rocks, minerals, and other geological materials. Laboratory work provides hands-on experience in using tools and instruments like microscopes, spectrometers, and chemical analysis equipment. Students learn how to identify minerals, analyze rock formations, and interpret geological data through experiments and sample analysis. Visual aids and multimedia: Geology often relies on visual representations to understand complex concepts. The use of diagrams, maps, charts, and models helps students visualize geological processes, landforms, and structural features. Multimedia resources like videos, animations, and virtual reality (VR) simulations can enhance learning by providing interactive and immersive experiences.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and 5
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #1, #2, 3,4
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 ,2,3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	What is Geology? Cosmology & Birth of the Earth
Week 2	Journey to the Center of the Earth and Drifting continents and spreading seas
Week 3	The way the Earth works: Plate tectonics
Week 4	Crystal Form mineral (crystallogy)
Week 5	Patterns in Nature: Minerals
Week 6	Physical properties of mineral
Week 7	Classification of mineral
Week 8	Exam 1
Week 9	Geologic time scale and fossils
Week 10	Introduction to rocks & The rock cycle
Week 11	Igneous rocks origin and formation
Week 12	Classification of igneous rocks
Week 13	Origin and nature of sedimentary rocks , Sedimentary environments
Week 14	Types of sedimentary rocks: Chemical and detrital sedimentary rocks
Week 15	Metamorphic rocks
Week 16	**Exam 2**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Crystal Form mineral (crystallogy)
Week 2	Physical properties of mineral
Week 3	Geologic time scale and fossils
Week 4	Classification of igneous rocks
Week 5	Types of sedimentary rocks: Chemical sedimentary rocks
Week 6	detrital sedimentary rocks
Week 7	Metamorphic rocks

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	"Earth: An Introduction to Physical Geology" by Edward J. Tarbuck, Frederick K. Lutgens, and Dennis G. Tasa.	Yes
Recommended Texts	1- "Physical Geology" by Charles C. Plummer, Diane H. Carlson, and Lisa Hammersley 2- Earth: Portrait of a Planet" by Stephen Marshak	Yes
Websites		

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**General Geology II**			**Module Delivery**	
Module Type	Basic learning activities			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PE112**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader			**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	1/06/2023		**Version Number**	1	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PE106	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objectives of a geology module typically aim to provide students with a comprehensive understanding of the following: Earth Resources and Environmental Geology: Students examine the formation, exploration, and extraction of Earth's natural resources (such as minerals, fossil fuels, and groundwater) . Paleontology and Evolution: Students study the principles of paleontology, including fossil identification and analysis, and how fossils provide evidence for the evolution of life on Earth. Geological Time and History: Students gain an understanding of the Earth's geological history, including the development of different geological time scales, the processes of fossilization, and the evolution of life on Earth. Scientific Inquiry and Research Skills: Students develop critical thinking, analytical, and research skills through laboratory work, data analysis, and independent research projects.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	This learning outcome implies that upon completing the geology module, students should have achieved the following: 1- Knowledge of Geological Processes: Students should have a solid understanding of the fundamental processes that shape the Earth, such as plate tectonics, erosion, weathering, and deposition. 2- Understanding of Geological Principles: Students should be familiar with key geological principles, including rock formation and identification, geological time, stratigraphy, and the interpretation of geological maps and cross-sections. 3- Application of Geology: Students should be able to apply their knowledge of geology to analyze and interpret geological phenomena, such as the formation of mountains, earthquakes, volcanoes, and the distribution of natural resources. They should also be capable of recognizing and assessing geological hazards and their potential impact on human activities. 4- Critical Thinking and Problem-Solving: Students should develop critical thinking skills and be able to apply geological concepts to solve problems and make informed decisions in both academic and real-world contexts. 5- Communication of Geological Concepts: Students should be able to effectively communicate geological concepts, findings, and interpretations using appropriate scientific terminology and conventions, both in written and oral forms.
Indicative Contents المحتويات الإرشادية	INTRODUCTION: SEDIMENTOLOGY AND STRATIGRAPHY(3hrs.) Classification of sediments and sedimentary rocks STRATIGRAPHY: concepts and Lithostratigraphy Geological time, Stratigraphic units, Lithostratigraphy, Applications of lithostratigraphy (3hrs) BIOSTRATIGRAPHY; Biostratigraphic units, Taxa used in biostratigraphy, Biostratigraphic correlation(3hrs)

	Biostratigraphy in relation to other stratigraphic techniques Geochronology and chronostratigraphy (3hrs) Basin analysis , Tectonics and sedimentation: kinds of sedimentary basin(3hrs) Structural geology; Stress and Strain : includes different types of stress (compression, tension, shear) and strain (elastic, plastic, brittle). (3hrs) Rock Deformation : The study of how rocks respond to stress and deform(3hrs) Geological Structures: Identification, description, and classification of geological structures(3hrs) Field Mapping: This includes methods for measuring strike and dip and creating geological maps and cross-sections. (3hrs) Rheology: mechanical behavior of rocks under different conditions of temperature and pressure(3hrs) Applied Structural Geology: The application of structural geology principles in petroleum geology (3hrs)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Geology, as a scientific discipline, involves the study of the Earth's structure, composition, history, and processes. The learning and teaching strategies employed in geology often focus on a combination of theoretical knowledge, practical fieldwork, laboratory analysis, and interactive discussions. Here are some common learning and teaching strategies used in geology: Fieldwork: Fieldwork plays a crucial role in geology education. Students are often taken to geological sites, such as outcrops, mountains, and coastal areas, where they can observe geological features firsthand. Field trips allow students to apply theoretical concepts, practice data collection techniques, and develop their observational and interpretive skills. Laboratory work: Geology involves various laboratory techniques for analyzing rocks, minerals, and other geological materials. Laboratory work provides hands-on experience in using tools and instruments like microscopes, spectrometers, and chemical analysis equipment. Students learn how to identify minerals, analyze rock formations, and interpret geological data through experiments and sample analysis. Visual aids and multimedia: Geology often relies on visual representations to understand complex concepts. The use of diagrams, maps, charts, and models helps students visualize geological processes, landforms, and structural features. Multimedia resources like videos, animations, and virtual reality (VR) simulations can enhance learning by providing interactive and immersive experiences.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and 5
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #1, #2, 3,4
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 ,2,3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	INTRODUCTION: SEDIMENTOLOGY AND STRATIGRAPHY
Week 2	Classification of sediments and sedimentary rocks
Week 3	STRATIGRAPHY: concepts and Lithostratigraphy
Week 4	Geological time, Stratigraphic units, Lithostratigraphy, Applications of lithostratigraphy
Week 5	BIOSTRATIGRAPHY; Biostratigraphic units, Taxa used in biostratigraphy, Biostratigraphic correlation Biostratigraphy in relation to other stratigraphic techniques

Week 6	Geochronology and chronostratigraphy
Week 7	Basin analysis , Tectonics and sedimentation: kinds of sedimentary basin
Week 8	Exam 1
Week 9	Structural geology; Stress and Strain : includes different types of stress (compression, tension, shear) and strain (elastic, plastic, brittle).
Week 10	Rock Deformation : The study of how rocks respond to stress and deform
Week 11	Geological Structures: Identification, description, and classification of geological structures
Week 12	Field Mapping: This includes methods for measuring strike and dip and creating geological maps and cross-sections.
Week 13	Tectonics: plate tectonics, mountain building, and the formation of basins
Week 14	Rheology: mechanical behavior of rocks under different conditions of temperature and pressure
Week 15	Applied Structural Geology: The application of structural geology principles in petroleum geology
Week 16	**Exam 2**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	principles of stratigraphy, including superposition, original horizontality, lateral continuity, and faunal succession
Week 2	Stratigraphic Columns; Lithology and Sedimentary Structures; Stratigraphic Correlation
Week 3	Depositional Environments; Geologic time scale a; Interpretation and Geological History
Week 4	Geologic time scale a; Interpretation and Geological History
Week 5	Contour Maps; Isopach Maps, Topographic Map
Week 6	study of rock deformation and structural features.
Week 7	mechanical properties of rocks and their response to stress.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Sedimentology and Stratigraphy By Gary Nichols. John Wiley & Sons, Ltd., Publication. 2009. Principle of sedimentology and stratigraphy By Sam Boggs,J.R. 2006	Yes

Recommended Texts		Yes
Websites		

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics I**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PRE101**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Ghufran Faris Abdullah alrahhawi		**e-mail**	ghufranalrahhawi@uomosul.edu.iq	
Module Leader's Acad. Title	Ass.Lecture		**Module Leader's Qualification**	Ms.c	
Module Tutor			**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	1/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objective of the course is to present straight line, derivative, Limit, the integral, application to definite integral, the matrix, application of matrix, grammer method to solving linear system, hyperbolic Functions and derivatives and Integrals of hyperbolic functions.
Module Learning Outcomes	It is expected from the student who passes this module learn the following topics: 1. Straight line 2. Derivative

مخرجات التعلم للمادة الدراسية	3. Limit 4. Integral , application, and method of integral. 5. The Matrix and its operations 6. Application of matrix. 7. Hyperbolic Functions 8. Derivatives and Integrals of hyperbolic functions.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1.Straight line slope, types, equation of straight line. [4hrs.] 2. Derivative derivative of various functions, chain rule, implicit deifferintion , applications [12 hrs.] 3. Limit Limit of different functions, Hopital's rule [4hrs.] 4. The integral definite and indefinite integrals. [4hrs.] 5. Application to definite integral Area – Volumes – arc length. [16hrs.] 6. The Matrix The Matrix and its operations, application of matrix, grammer method to solving linear system. [12hrs.] 7. hyperbolic Functions. [4hrs.] 8. derivatives and Integrals of hyperbolic functions. [4hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students The usual theoretical presentation method using the writing board and depending on the method (how and why) of the subject and according to the curriculum of the subject.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	20% (20)	4,6 and 13	LO #1,#2,#6 and #11
	Assignments	8	10% (10)	2 and 12	LO #2, #4 ,#5,#6,#7,#11,#12.#13 and #15
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report				
Summative assessment	Midterm Exam	2hr	10% (10)	10	LO #1 - #10
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Straight line: slope, types, equation of straight line
Weeks 2-4	Derivative: derivative of various functions, chain rule, implicit deifferintion, applications .**(Quiz1)**
Week 5	Limit: Limit of different functions, Hopital's rule
Week 6	The integral: definite and indefinite integrals. **(Quiz 2)**
Week 7-10	Application to definite integral: Area – Volumes – arc length . **(Mid Exam)**
Week11	The Matrix and its operations.
Week12	The determenants and its applications – inverse matrix by cofactor.
Week13	Grammer method to solving linear system. **(Quiz3)**
Week14	Hyperbolic Functions .
Week15	Derivatives and Integrals of Hyperbolic Functions.
Week16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر		
	Material Covered	
Week 1		
Week 2		
Week 3		
Week 4		
Week 5		
Week 6		
Week 7		

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
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	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.