MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Mineralogy			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEO1203				
ECTS Credits	**8**				
SWL (hr/sem)	200				
Module Level	1st		**Semester of Delivery**	2nd	
Administering Department	Geophysics		**College**	Remote sensing and Geophysics	
Module Leader	Dr. Aws Khalid		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Minerals	
Module Tutor	None		**e-mail**		
Peer Reviewer Name	None		**e-mail**		
Scientific Committee Approval Date			**Version Number**		

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 Aims أهداف المادة الدراسية	Learn about the most important naturally occurring minerals Identify the physical properties of minerals with the naked eye. Knowledge of the chemical composition of the most important mineral aggregates. Know the types of chemical bonds in minerals and how their atoms relate to each other A comprehensive classification study of the minerals that make up the rocks of the earth's crust Identify the most important common mineral aggregates in the earth's crust in terms of their origin, origin and different characteristics.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	114		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86		
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)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	Midterm Exam	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Mineralogy
Week 2	Minerals Formation
Week 3	Mineral Classification
Week 4	Physical Properties of Minerals
Week 5	Optical properties of Minerals: Overview
Week 6	Observations using plane polarized light (PPL) mode
Week 7	Observations using crossed polarized light (XPL) mode –part1-
Week 8	Observations using crossed polarized light (XPL) mode –part2-
Week 9	Native Elements Minerals
Week 10	Oxide Minerals
Week 11	Halide Minerals
Week 12	Sulfide Minerals
Week 13	Carbonate mineral group
Week 14	Sulfates
Week 15	Phosphate Minerals
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Calculation of physical properties of minerals
Week 2	Wavelength & energy of light spectrum
Week 3	Petrographic Microscope: Parts & Principle of operation
Week 4	Petrographic Microscope: mineral specimen tests
Week 5	Tests by plane polarized light (PPL) mode
Week 6	Tests by crossed polarized light (XPL) mode
Week 7	Analyzing tests of petrographic slides

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Introduction to Mineralogy and Petrology, Swapan Kumar Haldar, 20210.	
Recommended Texts	Introduction to Optical Mineralogy, William D. Nesse, 2013.	
Websites	http://www.mindat.org	

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

Applied Physics

Module Information معلومات المادة الدراسية					
Module Title	Calculus			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEO32023				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level	1st		**Semester of Delivery**	1st	
Administering Department	**Geophysics**		**College**	**Remote sensing & Geophysics**	
Module Leader	**Ali Khalid Khudhayir**		**e-mail**	ali.khdayir@kus.edu.iq	
Module Leader's Acad. Title	**Lecturer**		**Module Leader's Qualification**	**MSc. Method of teaching mathematics**	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	**15/5/2024**		**Version Number**	2	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Null**	**Semester**	
Co-requisites module	**Null**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Identify the properties of calculus 2. Knowledge of methods of finding derivatives 3. Knowledge of integration methods 4. Learn about the scientific applications of calculus and integration
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Calculating derivatives for algebraic and special functions 2. Calculation of integrals for algebraic and special functions 3. Using the concepts of calculus and integration in scientific applications 4. Employing the concepts of calculus and integration in the study of other sciences
Indicative Contents المحتويات الإرشادية	1. At the beginning of the semester, students are informed of the course vocabulary and information sources

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lecture method 2. standard method 3. inductive method

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	80		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	20		
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)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	Midterm Exam	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Inequalities
Week 2	**Function**
Week 3	Limits and Continuity
Week 4	Differentiation
Week 5	Applications of differentiations
Week 6	Related rates
Week 7	Exam
Week 8	Integration
Week 9	Methods of Integration A
Week 10	Methods of Integration B
Week 11	Methods of Integration C
Week 12	Methods of Integration D
Week 13	Plane analytic geometry A
Week 14	Plane analytic geometry B
Week 15	**Exam**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Calculus and Analytical Geometry by Thomas and Finney (2005), 11th Ed., Addison Wesley.**	
Recommended Texts	**Calculus by Howard Anton, Bivens and Stephen Davis (2009), 9th Ed. John wiley and Sons, NC.**	
Websites	Varies lectures and lecture notes on the internet	

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

Applied Physics

Module Information معلومات المادة الدراسية					
Module Title	Linear Algebra and Statistics			**Module Delivery**	
Module Type	**C**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEO1205				
ECTS Credits	**5**				
SWL (hr/sem)	125				
Module Level	2nd		**Semester of Delivery**	2nd	
Administering Department	**Geophysics**		**College**	**Remote sensing & Geophysics**	
Module Leader	**Ali Khalid Khudhayir**		**e-mail**	ali.khdayir@kus.edu.iq	
Module Leader's Acad. Title	**Lecturer**		**Module Leader's Qualification**	**MSc. Method of teaching mathematics**	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	**15/5/2024**		**Version Number**	2	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Null**	**Semester**	
Co-requisites module	**Null**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Learn about the properties of matrices and determinants 2. Identify the characteristics of descriptive and inferential statistics 3. Learn about vectors and vector space 4. Learn about statistical metrics
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Calculating determinants using properties 2. Calculation of vectors in space R2 and R3 3. find the orthogonality 4. Using descriptive statistics to describe natural phenomena 5. The use of inferential statistics in data analysis
Indicative Contents المحتويات الإرشادية	1. At the beginning of the semester, students are informed of the course vocabulary and information sources

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lecture method 2. standard method 3. inductive method

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	25		
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	Midterm Exam	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Algebra of matrices
Week 2	**Determents, Cramers Rule**
Week 3	System of Linear Equation
Week 4	Vectors
Week 5	Eigenvalues and Eigenvectors
Week 6	Polynomials of matrices
Week 7	Exam
Week 8	Vector space in R^2
Week 9	Vector space in R^3
Week 10	Measures of Central Tendency
Week 11	Measures of Dispersion
Week 12	**Discrete Probability Distributions**
Week 13	Normal Distributions
Week 14	**Tests of Hypotheses**
Week 15	**Exam**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. **Calculus and Analytical Geometry by Thomas and Finney (2005), 11th Ed., Addison Wesley.** 2. **Walpole, R.E.1968. Introduction to Statistics. Macmillan company, New York.**	
Recommended Texts	1. **Calculus by Howard Anton, Bivens and Stephen Davis (2009), 9th Ed. John wiley and Sons, NC.** 2. **Chao, L.L.1969. Statistics methods and Analyses, Mc Graw. Hill, New York.**	
Websites	Varies lectures and lecture notes on the internet	

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			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEO1101				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	III		**Semester of Delivery**	FIVE	
Administering Department	Geophysics		**College**	College of Geophysics and Remote Sensing	
Module Leader	Dr. Rami M. Idan		**e-mail**	Ramisc3@kus.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Petroleum geology	
Module Tutor	Null		**e-mail**		
Peer Reviewer Name	Null		**e-mail**		
Scientific Committee Approval Date	16 / 6 / 2024		**Version Number**	2	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Fundamentals of Geophysics	**Semester**	Two
Co-requisites module	Null	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	This module deals with the principles of self-potential, accurate and normal electrical inductive focusing methods, sonic log and cross-charts. NMR measurements, some technical measurements such as dip meter and methods of their conduction, the most important results obtained by such measurements and methods for their interpretation
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Develop an understanding of how to evaluate a variety of subsurface maps including fault, structure, and isochore maps. • Understand the types of questions to ask when reviewing interpretations, maps and prospects. • Evaluate the 3-D viability of an interpretation, map or prospect. • Evaluate whether the resources or reserves attributed to a completed interpretation or map are under or over estimated. • Determine whether an interpreter has applied sound, industry accepted, geoscience principles and methods to generate an interpretation, map or prospect.
Indicative Contents المحتويات الإرشادية	Through explanations and applications, using display screens, and presenting scientific films that explain the reality of what happens in nature.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Class Lecture Laboratory Practical Training Tutorial Seminar

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	86		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	39		
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week. 1	Introduction Geology, How to think.
Week. 2	Plate Tectonic Theory.
	Earth Materials
Week. 3	Minerals
Week. 4	Physical Properties of Minerals
Week. 5	Rocks, Igneous Rocks.
Week. 6	Intrusive Activity Volcanoes
Week. 7	Exam

Week. 8	Sedimentation.
Week. 9	Rocks, Sedimentary Rocks.
Week. 10	Sedimentary Structures
Week. 11	Rocks, Metamorphism and metamorphic Rocks
	Earth processes
Week. 12	Stratigraphy and Geologic Time.
Week. 13	Structural Geology
Week. 14	Weathering.
Week. 15	Exam
Week. 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week. 1	Crystals and Crystallography
Week. 2	Physical Properties of Minerals
Week. 3	Igneous Rocks.
Week. 4	metamorphic Rocks
Week. 5	Sedimentary Rocks.
Week. 6	Topographic Maps
Week. 7	Geological Maps

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Lutgens, F.K., Edward, J. T., 2015, Essentials of g e o l o g y, Illustrated by Dennis Tasa. 12nd Edition,	Y

Recommended Texts	• McConnell, D., 2007. The Good Earth, Introduction to Earth Science-McGraw-Hill. Utah State Office of Education, 2013. Earth Science. Library of Congress Cataloging-in-Publication Data, 573 p. • Wicander, R., and Monroe, J. S. 2010. Historical geology-Books-Cole.	y
Websites	https://ocw.mit.edu/courses/find-by-topic/#cat=science&subcat=earthscience&spec=geophysics	

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

Applied Physics

Module Information معلومات المادة الدراسية					
Module Title	Applied Physics			**Module Delivery**	
Module Type	S			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	RGC1101				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1st		**Semester of Delivery**	1st	
Administering Department	Geophysics		**College**	Remote sensing & Geophysics	
Module Leader	Hind Ibrahim Abdulgafour		**e-mail**	hind.ibrahem.abdulghafoor@kus.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	15/5/2024		**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Null	**Semester**	
Co-requisites module	Null	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Basic principles of physics phenomena. 2. Learn the basic physical properties of matter, such as force, energy and motion. 3. The student acquires a cognitive skill about the basic principles of physics, which is one of the phenomena found in nature on the surface of the earth and in the outer orbits of the earth. 4. The student acquires theoretical and practical knowledge of the basic principles of physics and laboratory experiments. 5. How to use laboratory equipment for the purpose of conducting the practical part of the course.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. To understand the basics of the physical measurements. 2. To learn the motion in one, two, and three dimentions. 3. To learn the Force and Motion. 4. To learn the Newton's Laws of Motion. 5. To learn the Energy and Work. 6. To learn the Potential Energy and Conservation of Energy.
Indicative Contents المحتويات الإرشادية	1. Understanding, assimilation, analysis and interpretation of work results. 2. Recording scientific notes and realizing work in general. 3. Conducting practical experiments, discussing and interpreting them by the student. 4. Focusing on extra-curricular activities to develop students' skills. 5. Scientific trips to research centers specialized in this field.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be focus on understanding the topics and the sequence of logical answers to intellectual questions. Analyze the results according to the standards adopted when conducting laboratory experiments. Interpreting the results obtained from conducting experiments and comparing them with theoretical indices. Learn how to calculate the percentage of errors according to the results obtained.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50		
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)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Physics and Physical Measurements**
Week 2	**Motion Along a Straight Line**
Week 3	**Motion in two and three dimensions -I**
Week 4	**Force and Motion**
Week 5	**Newton's Laws of Motion**
Week 6	**Energy and Work**
Week 7	**Potential Energy and Conservation of Energy**
Week 8	**Center of mass and linear momentum**
Week 9	**Rotation**

Week 10	**Gravitation**
Week 11	**Equilibrium and Elasticity**
Week 12	**Waves and Light**
Week 13	**Fluid**
Week 14	**Oscillations**
Week 15	**Temperature, Heat , and First Law of Thermodynamics**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Simple pendulum**
Week 2	**Glass refractive index**
Week 3	**Forces equilibrium**
Week 4	**Focal length of convex lens**
Week 5	**Archimedes principle**
Week 6	**The speed of sound**
Week 7	**Inclined Surface**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**FUNDAMENTALS OF PHYSICS. Tenth edition, Halliday & Resnick.**	
Recommended Texts	**University Physics, with modern physics. Hugh D. Young and Roger A. Freedmen, 13th edition.**	

Websites	https://www.abebooks.com/book-search/title/university-physics-13th-edition/author/freedman-roger-a-young-hugh-d	

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

Electrical and Magnetic Physics

Module Information معلومات المادة الدراسية					
Module Title	**Electrical and Magnetic Physics**			**Module Delivery**	
Module Type	**C**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEO1204				
ECTS Credits	**5**				
SWL (hr/sem)	150				
Module Level	1st		**Semester of Delivery**	2nd	
Administering Department	**Geophysics**		**College**	**Remote sensing & Geophysics**	
Module Leader	**Hind Ibrahim Abdulgafour**		**e-mail**	hind.ibrahem.abdulghafoor@kus.edu.iq	
Module Leader's Acad. Title	**Assistant Professor**		**Module Leader's Qualification**	**PhD**	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	**15/5/2024**		**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Null**	**Semester**	
Co-requisites module	**Null**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Electricity is a noun for a variety of phenomena resulting from the presence and flow of electric charge. 2. To learn the phenomena include lightning and static electricity but contain less familiar concepts such as the electromagnetic field and electromagnetic induction. 3. An electric current is the movement or flow of electrically charged particles, and is usually measured in amperes. An electric field is an effect produced by an electric charge on other charges in its vicinity. 4. Magnetic field physics (or magnetoelectric motion) is the branch of physics that studies the relationship between electricity and magnetism, in which a magnetic field affects an electric charge or an electrically charged particle. 5. A changing magnetic field creates an electric field (this phenomenon is called electromagnetic induction and is the basis for the operation of electric generators, electric motors and transformers
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. To learn the basic principles of electrical and magnetic phenomena of physics. 2. To learn the use laboratory equipment for the purpose of conducting the practical part of the course. 3. How to Use modern learning tools such as the smart board. 4. Using video technology to interpret some practical experiments. 5. Understanding, understanding, analyzing and interpreting work results. 6. Recording scientific notes and realizing work in general. 7. Conducting practical experiments, discussing and interpreting them by the student.
Indicative Contents المحتويات الإرشادية	1. Practical application of theoretical information in the form of practical issues. 2. Work in the form of student groups inside the laboratories. 3. Using videos and display screens to clarify and consolidate information for the student.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be focus of the fundamental principles of the phenomena of electric and magnetic physics. Also, How to use laboratory equipment for the purpose of conducting the practical part of the course. Using modern learning tools such as the smart board. Using video technology to interpret some practical experiments.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50		
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)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered

Week 1	**Electric Charge**
Week 2	**Coulum's Law**
Week 3	**Electric Fields**
Week 4	**Gauss' Law**
Week 5	**Equipotential Surfaces and the Electric Field**
Week 6	**Electric Potential Energy**
Week 7	**Magnetic Field**
Week 8	**Ampere's Law**
Week 9	**Faraday's Law of Electromagnetic Induction**
Week 10	**Faraday's Law of Induction**
Week 11	**Application of Lenzes Low**
Week 12	**Magnetic Flux**
Week 13	**Magnetic force**
Week 14	**Magnetic Field Of Moving Charge**
Week 15	**Geophysicists concerns and interested goals in studying the magnetic fields**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Ohm's law**
Week 2	**Westin Bridge experience experiment**
Week 3	**Experiment connecting capacitors (parallel + series)**
Week 4	**Electrical resonance circuit experiment**

Week 5	**Faraday's law**
Week 6	**Experiment with the determination of magnetic flux lines**
Week 7	**Oersted Lawn Experience**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	F U N D A M E N TA L S OF P H Y S I C S	
Recommended Texts	UNIVERSITY PHYSICS WITH MODERN PHYSICS	
Websites	https://www.niehs.nih.gov/health/topics/agents/emf/index.cfm	

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	Chemistry			**Module Delivery**	
Module Type	S			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	RGC1202				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Geophysics		**College**	Remote sensing & Geophysics	
Module Leader	Shaimaa Ahmad Hassan		**e-mail**	Dr.shaimaa_altaee@kus.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	1/6/2024		**Version Number**		

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 Aims أهداف المادة الدراسية	1. Learn what organic, inorganic and analytical chemistry means. 2. Learn the calculation methods used in analytical chemistry. 3. Identify the types and naming of inorganic compounds. 4. Identify the different methods for calculating the concentrations of solutions. 5. Identify the types of naming organic compounds.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- The student distinguishes between the types of organic and inorganic compounds. 2- Learn how to find the chemical concentrations of solutions. 3- The student distinguishes between saturated and unsaturated. hydrocarbons 4- Master the effect of the acid function on solutions.
Indicative Contents المحتويات الإرشادية	

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 types of simple experiments involving some interesting for example sampling activities for the students. As well as by assigning students to make seminars on a specific topic in chemistry.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50		

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)	5,10	1,2,10 and 11
	Assignments	2	10% (10)	2,12	3,4,6,and 7
	Projects / Lab.	1	10% (10)	Continues	
	Report	1	10% (10)	13	5,8,and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	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	Inorganic chemistry
Week 2	Atomic number, mass number and isotope
Week 3	An overview of the periodic table
Week 4	Names and Formulas of Inorganic Compounds
Week 5	Ionic bond, covalent bond and metallic bond
Week 6	Molecular shape and VSEPR model
Week 7	Organic chemistry
Week 8	Introduction to Hydrocarbons
Week 9	Hydrocarbon (alkane, alkene, alkyne and Aromatic compounds)
Week 10	Hydrocarbon Sources and Separation (Natural Gas and Petroleum or Crude Oil)
Week 11	Use of Hydrocarbons (Refined Petroleum Products, Transportation Fuels and Plastic)
Week 12	Analytical chemistry
Week 13	Qualitative and quantitative analysis
Week 14	Gravimetric Analysis

Week 15	Volumetric Analysis (TITRATION)
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	General Safety Rules
Week 2	Common Laboratory Apparatus
Week 3	Method for the express of concentration
Week 4	Prepare Dilute Solution
Week 5	To prepare and standardize 0.1 N HCl using sodium carbonate as primary standard
Week 6	Soil pH Protocol
Week 7	Determination of melting point

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Principles of Inorganic Chemistry, 2nd Edition** Brian W. Pfennig December 2021 Principles of Organic Chemistry 1st Edition - January 27, 2015	No
Recommended Texts	Principles of Instrumental Analysis, 7E by Douglas A. Skoog/F. James Holler/Stanley R. Crouch , 2020	No
Websites	https://chem.libretexts.org/Bookshelves/General_Chemistry/Map%3A_Chemistry_-_The_Central_Science.	

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	Fundamentals of Geophysics			**Module Delivery**	
Module Type	C			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEO1102				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level	1st		**Semester of Delivery**	2nd	
Administering Department	Geophysics		**College**	Remote sensing & Geophysics	
Module Leader	Mohammed Khudheir Hummadi		**e-mail**	mohammed.hummadi@gmail.com	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	15/5/2024		**Version Number**		

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 Aims أهداف المادة الدراسية	1- Learn what the Geophysics is. 2- Learn the geophysical methods used in geological survey. 3- Learn the gravity method principles. 4- Learn the magnetic method principles. 5- Learn the electrical method principles.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn the principles of geophysical methods.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The primary approach employed in the delivery of this module will focus on fostering active student engagement in exercises, alongside the enhancement and broadening of their critical thinking abilities. Achieving this objective will involve a combination of classroom sessions, interactive tutorials, as well as the inclusion of various straightforward experiments, such as engaging sampling activities, designed to captivate the students' interest.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	72		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	78		
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)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	Midterm Exam	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Definition of Geophysics
Week 2	principles of geophysics
Week 3	The Gravity method
Week 4	Corrections in gravity method
Week 5	The gravity meter
Week 6	Examples of gravity survey
Week 7	The magnetic method
Week 8	How to survey in magnetic method
Week 9	Types of magnetometers
Week 10	The components of magnetic field of the earth
Week 11	Examples of magnetic survey
Week 12	The electrical method
Week 13	What is the resistivity of subsurface
Week 14	The applications of electrical survey
Week 15	Examples of electrical survey
Week 16	**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	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals of Geophysics 2nd Edition William Lowrie Swiss Federal Institute of Technology, Zürich 2007	
Recommended Texts	Field Geophysics 3rd Edition John Milsom University College London 2003	
Websites	https://www.usgs.gov/centers/gggsc/science/geophysics	

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	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded

(0 – 49)	**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

Electromagnetism

Module Information معلومات المادة الدراسية					
Module Title	Principles of Electromagnetic			**Module Delivery**	
Module Type	C			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	GEO22013				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	2nd		**Semester of Delivery**	4th	
Administering Department	Geophysics		**College**	Remote sensing & Geophysics	
Module Leader	Hind Ibrahim Abdulgafour		**e-mail**	hind.ibrahem.abdulghafoor@kus.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	15/5/2024		**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Null	**Semester**	
Co-requisites module	Null	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Basic principles of Electromagnetism phenomena. 2. Learn the basic Electric and magnetic fields. 3. The student acquires a cognitive skill about the basic principles of electromagnetism waves with properties. 4. The student learn the nature of light as well as learn the law of reflection and refraction. 5. Learn the source and types of radiation with their applications.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. To understand the basics of the Electromagnetism principles. 2. To learn the light and waves. 3. To learn the types of Electromagnetism. 4. To learn the induction of Electric and magnetic field. 5. To learn the Law of Reflection and refraction. 6. To learn the source and the types of radiations.
Indicative Contents المحتويات الإرشادية	1. Understanding, assimilation, analysis and interpretation of study results. 2. Recording scientific notes and realizing work in general. 3. Focusing on extra-curricular activities to develop students' skills. 4. Scientific trips to research centers specialized in this field.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be focus on understanding the topics and the sequence of logical answers to intellectual questions .Analyze the results according to the daily and monthly tests approved in the study. Examining the extent to which study subjects are applied in work

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77		
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Electromagnetic Spectrum**
Week 2	**Light and the Electromagnetic Spectrum**
Week 3	**Light as a Wave**
Week 4	**Types of Electromagnetic waves**
Week 5	**The Electric Field**
Week 6	**The Magnetic field**
Week 7	**Gauss' Law**
Week 8	**Ampère's Law**
Week 9	**Induction of Electric and Magnetic field**

Week 10	**Faraday Law's**
Week 11	**Maxwell Law's**
Week 12	**Properties of EM wave**
Week 13	**The nature of Light**
Week 14	**The Law of Reflection and Refraction**
Week 15	**Dispersion**
Week 16	**The Sources of Radiation and their applications**

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Electromagnetics and Applications.** **David H. Staelin.**	
Recommended Texts	**ELECTROMAGNETISM Principles and Applications. Paul Lorrain.**	
Websites	https://www.abebooks.com/book-search/title/university-physics-13th-edition/author/freedman-roger-a-young-hugh-d	

Grading Scheme

مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
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