Level Two (UGII)
Semester- Three

Module Description Form
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Atomic Physics I			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2313				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UGII		Semester of Delivery	3	
Administering Department	Department of Physics		College	College of Science / University of Baghdad	
Module Leader	Dr. Mohammed Abdullah Hameed Dr. Iqbal Siham Naji Dr. Saad Mohammed Saleh		e-mail	mohammed.a@sc.uobaghdad.edu.iq iqbal.naji@sc.uobaghdad.edu.iq saadtm2000@gmail.com	
Module Leader's Acad. Title	Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Mohammed Abdullah Hameed Dr. Iqbal Siham Naji Dr. Saad Mohammed Saleh		e-mail	mohammed.a@sc.uobaghdad.edu.iq iqbal.naji@sc.uobaghdad.edu.iq saadtm2000@gmail.com	
Peer Reviewer Name	Falah A-H. Mutlak		e-mail	Falah.mutlak@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 1207	Semester	1
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	7. Teaching students the basic principles of physics. 8. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 9. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 10. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 11. The service of preparing graduates specialized in physics who contribute to development in the country.

	12. Meeting the needs of various sectors with highly qualified personals in the field of physics. 13. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*A. Cognitive goals* 1. To enable the student to know and understand the basics of physics. 2. To make students able to understand physical phenomena from a mathematical point of view. 3. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 4. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *B. The skills goals special to the program* 1. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 2. Usage and development skills. 3. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 4. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	The course aims to teach the student one of the most important basics of physics (atomic physics), which includes a lot of basics that must be seen and known by a student specializing in physics and making him able to understand these basics and logical and scientific analysis in the interpretation of physical phenomena, as well as enabling the student to solve issues related to vocabulary matter using the laws of atomic physics.

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	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Relativity 1.1 The principle of relativity 1.2 Inertial system of coordinates
Week 2	1.3 Galilean transformation 1.4 Einstein's special theory of relativity
Week 3	1.5 Lorentz transformation 1.6 Inverse Lorentz transformation
Week 4	1.7 Length contractions 1.8 time dilation
Week 5	1.9 Transformation of velocity 1.10 Change of mass with velocity
Week 6	1.11 Mass energy equivalence 1.12 Example of relativistic calculation
Week 7	Midterm Exam
Week 8	Atomc view of electricity 2.1 Electrical discharges 2.2 Thomson's measurements of q/m
Week 9	2.3 Electron charge (Milikan's oil drop experiment) 2.4 Mass of the electron
Week 10	2.5 Mass spectroscopy 2.6 Isotropic mass
Week 11	The atomic view of radiation 3.1 Waves or particles 3.2 Electricity and light
Week 12	3.3 Electrodynamics 3.4 Thermal radiation
Week 13	3.5 Emission and absorption of radiation 3.6 Black body radiation
Week 14	3.7 Wien and Rayleish-Jeans law's 3.8 Plank's law (emission quantized)
Week 15	3.9 Stefan-Boltzman law and Wien displacement law 3.10 Photoelectric effect

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Measure e/m by the Bosch method
Week 2	Measure e/m by the Schuster method (deflection by the effect of magnetic field)
Week 3	Light absorption coefficient using a photocell
Week 4	Counting statistic
Week 5	Photoelectric phenomenon
Week 6	Backscattering of a beta particle
Week 7	Midterm Exam
Week 8	Millikan oil drop
Week 9	Measurement of e/m by Thomson's method (deflection by the effect of electric field)
Week 10	Geiger counter
Week 11	Spectrum of Hydrogen atom
Week 12	Cathode ray tube
Week 13	Measure the excitation potential using Frank-Hertz tube
Week 14	Electron spin resonance at DPPH
Week 15	Coulomb's law
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**1- M. Russell Wehr and James A. Richards "The physics of the atom" 2- Richard T. Wridner and Robert L. Sells "Elementary modern physics" 3- M.C. Lovell and A. J. Avery "Physical properties of material"**	**Yes**
Recommended Texts	**Modern Physics Books**	
Websites	**Modern Physics 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	*Heat and Thermodynamic*			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2314				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UGII		Semester of Delivery	3	
Administering Department	Department of Physics		College	Science College/ University of Baghdad	
Module Leader	Dr. Bushra Abbas Hasan Dr. Hussein Khazal Rasheed Dr. Ali Adil Abbas		e-mail	Bushra.ab@sc.uobaghdad.edu.iq Hussein.k@sc.uobaghdad.edi.iq Ali.adel@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Bushra Abbas Hasan Dr. Hussein Khazal Rasheed Dr. Ali Adil Abbas		e-mail	Bushra.ab@sc.uobaghdad.edu.iq Hussein.k@sc.uobaghdad.edi.iq Ali.adel@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Farah Tariq M. Noori		e-mail	farah.noori@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 1208	Semester	2
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	14. Teaching students the basic principles of physics. 15. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 16. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 17. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 18. The service of preparing graduates specialized in physics who contribute to development in the country.

	19. Meeting the needs of various sectors with highly qualified personals in the field of physics. 20. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*C. Cognitive goals* 5. To enable the student to know and understand the basics of physics. 6. To make students able to understand physical phenomena from a mathematical point of view. 7. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 8. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *D. The skills goals special to the program* 5. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 6. Usage and development skills. 7. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 8. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	In this course content a brief introduction to thermodynamics which is concerned with heat or thermal energy in the first place and with all phenomena that appear or relate to this energy, such as the processes of heat transfer from one body to another or how t stored or generated.The zeroth law of thermos dynamics which define temperature and scales measure it, the first law of thermodynamics, or the law of conservation of energy,

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 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Temperature and the Zeroth Law of Thermodynamics Thermometers and the Celsius Temperature Scale
Week 2	The Constant-Volume Gas Thermometer and the Absolute Temperature Scale Macroscopic Description of an Ideal Gas, Thermal Expansion of Solids and Liquids
Week 3	Thermodynamic equilibrium Hydrostatic systems Mathematical theorem
Week 4	Stretch wire, Surfaces ,Electrochemical cell, Dielectric slab, Paramagnetic rod Intensive and extensive coordinated
Week 5	Work,Quasi static process ,Work in changing volume of hydrostatic system P-V diagram
Week 6	Hydrostatic work depend on the path Calculation of $\int PdV$ for quasi- static process Quasi – static isothermal expansion or compression of an ideal gas Quasi static isothermal increase of pressure on a solid
Week 7	Midterm Exam
Week 8	Work in changing the length of a wire Work in changing the area of a surface film Work in moving charge with an electrochemical cell Work in changing total polarization of a dielectric solid Work in changing the total magnetization of a paramagnetic solid
Week 9	Application of the first law of thermodynamics Energy of an isolated system Specific heat Joules law
Week 10	Relation between the two specific heats Ratio of the specific heats Expression for work
Week 11	Relations between Tand V , and T and P Reversible adiabatic process Derive PV^{γ} = constant Free expansion
Week 12	Conservation of energy : calorimetry Latent Heat, Energy Transfer Mechanisms:, Thermal conduction Convection, Radiation

Week 13	The Kinetic Theory of Gases Molecular Model of an Ideal Gas Molar Specific Heat of an Ideal Gas Distribution of Molecular Speeds
Week 14	The Equipartition of Energy, Adiabatic Processes for an Ideal Gas
Week 15	The Boltzmann Distribution Law, Mean Free Paths
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	Introduction to the laboratory experiments
Week 2	Measuring the true expansion coefficient of water
Week 3	Measuring the apparent expansion coefficient of water
Week 4	Measuring the coefficient of linear expansion of metals
Week 5	The specific heat of a liquid by cooling method
Week 6	Thermal conductivity coefficient of a well-conductive material (Searl)
Week 7	Midterm Exam
Week 8	Thermal conductivity coefficient of a non- conducting material (Li disk)
Week 9	Calculating atmospheric pressure by Boyle's method
Week 10	Satisfying of Charles ' law of the dependence of temperature on volume at constant pressure
Week 11	Satisfying of Gay- Lussac Charles' law of the dependence of temperature on pressure at constant volume
Week 12	Calibration of the thermocouple and its use as a thermometer
Week 13	Determination of water vapor pressure curve
Week 14	Maxwell -Boltzmann distribution law
Week 15	Reviewing the experiments
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Mark Waldo Zemanski_ Richard Dittman - Heat and thermodynamics _ an intermediate textbook (1997, McGraw-Hill	Yes
Recommended Texts		
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	Analytical Mechanics (1)			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2315				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level		UGII	Semester of Delivery		3
Administering Department		Department of Physics	College	Science College/ University of Baghdad	
Module Leader	Dr. Akram Noori Al-Shadeedi Dr. Mustafa Mohammed Ali		e-mail	Akram.sadeq@sc.uobaghdad.edu.iq Mustafa.Hussein@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Assistant Professor	Module Leader's Qualification		Ph.D.
Module Tutor	Dr. Akram Noori Al-Shadeedi Dr. Mustafa Mohammed Ali		e-mail	Akram.sadeq@sc.uobaghdad.edu.iq Mustafa.Hussein@sc.uobaghdad.edu.iq	
Peer Reviewer Name		Dr. Raad Mohammed Saleh Al-Haddad	e-mail	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date		01/10/2024	Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 1209	Semester	2
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	21. Teaching students the basic principles of physics. 22. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 23. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 24. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 25. The service of preparing graduates specialized in physics who contribute to development in the country. 26. Meeting the needs of various sectors with highly qualified personals in the field of physics.

	27. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*E. Cognitive goals* 9. To enable the student to know and understand the basics of physics. 10. To make students able to understand physical phenomena from a mathematical point of view. 11. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 12. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *F. The skills goals special to the program* 9. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 10. Usage and development skills. 11. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 12. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	In this course content a brief introduction to a vector an algebra concepts of velocity and acceleration, newton's laws of motion, harmonic motion, resonance, the driven oscillator, motion of particle in three dimensions, potential of energy and conservative forces, the analysis of motion in a nonlinear farm of reference and fractions forces, Gravitation, Expanded discussion of central forces, expanded Discussion of orbital energy.

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Vectors, the Scalar Product and Vector Product, Moment of a Force, Triple Products, the Transformation Matrix.
Week 2	Derivative of a Vector, Position Vector of a Particle, Velocity and Acceleration in Rectangular Coordinates.
Week 3	Velocity and Acceleration in Plane Polar Coordinates, Cylindrical and Spherical Coordinates, Newton's Law of Motion.
Week 4	Rectilinear Motion: Uniform Acceleration Under a Constant Force, Forces that Depend on Position: The Concepts of Kinetic and Potential Energy.
Week 5	Velocity-Dependent Forces: Fluid Resistance and Terminal Velocity, Vertical Fall Through a Fluid: Numerical Solution.
Week 6	General motion of particle in 3D, 2D, The Potential Energy Function in Three-Dimensional Motion: The Del Operator.
Week 7	Mid Term Exam
Week 8	Forces of the Separable Type: Projectile Motion, The Harmonic Oscillator in Two and Three Dimensions, Motion of Charged Particles in Electric and Magnetic Fields.
Week 9	Constrained Motion of a Particle, Noninertial Reference Systems, Accelerated Coordinate Systems and Inertial Forces.
Week 10	Rotating Coordinate Systems. Dynamics of a Particle in a Rotating Coordinate System, Effects of Earth's Rotation.
Week 11	Motion of a Projectile in a Rotating Cylinder, The Foucault Pendulum, Gravitation and Central Forces.
Week 12	Gravitational Force between a Uniform Sphere and a Particle, Kepler's Laws of Planetary Motion.
Week 13	Kepler's Second Law: Equal Areas Kepler's First Law: The Law of Ellipses, Kepler's Third Law: The Harmonic Law.
Week 14	Potential Energy in a Gravitational Field: Gravitational Potential, Potential Energy in a General Central Field.
Week 15	Orbital Energies in an Inverse-Square Field, Energy Equation of an Orbit in a Central Field.
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Analytical mechanics (Fowles and Cassiday).	Yes
Recommended Texts		
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
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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

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Analogue Electronics			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2316				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UGII		Semester of Delivery	3	
Administering Department	Department of Physics		College	Science /University of Baghdad	
Module Leader	Dr. Estabraq Talib Abdullah Dr. Asmaa Shawqi Khaleel Dr. Falah Hasan Ali		e-mail	Estabraqtalib@sc.uobaghdad.edu.iq asmaa.khaleel@sc.uobaghdad.edu.iq Falah.Ali@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Estabraq Talib Abdullah Dr. Asmaa Shawqi Khaleel Dr. Falah Hasan Ali		e-mail	Estabraqtalib@sc.uobaghdad.edu.iq asmaa.khaleel@sc.uobaghdad.edu.iq Falah.Ali@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Falah A-H. Mutlak		e-mail	Falah.mutlak@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 1208	Semester	2
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 5. The service of preparing graduates specialized in physics who contribute to development in the country.

	6. Meeting the needs of various sectors with highly qualified personals in the field of physics. 7. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*G. Cognitive goals* 1. To enable the student to know and understand the basics of physics. 2. To make students able to understand physical phenomena from a mathematical point of view. 3. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 4. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *H. The skills goals special to the program* 1. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 2. Usage and development skills. 3. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 4. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	Content of this course A brief introduction to electronic circuits and their components such as diodes and transistors and their practical applications in building electronic circuits such as power supplies, amplification circuits, and others.

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	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.7
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	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10,13	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Intrinsic Semiconductor. - Extrinsic Semiconductor (N- and P-Type).
Week 2	P-N Junction (Diode) Construction - Biasing (forward and reverse); I-V Curve.
Week 3	The application of diodes (half wave and full wave rectifier).
Week 4	Clipper and clamber circuits
Week 5	Power Supply.
Week 6	Special diodes
Week 7	Mid Term Exam
Week 8	Amplifications and Voltage Amplifiers - Definition of amplifications and gain - Basic Characteristics of an ideal voltage amplifiers - Amplifications elements:
Week 9	Transistor - Construction. - Transistor configurations
Week 10	Common emitter configurations :characteristic curves; - Hybrid parameters
Week 11	Load line analysis and Q-point. - Thermal stability and basic circuits. - Analysis of divider self-biased circuit voltage
Week 12	Small signal common emitter voltage amplifier. - Properties of other transistor configurations. - Transistor as a switch
Week 13	Field Effect Transistor (FET) Junction Field Effect Transistor (JFET) - Construction. - Circuits - Common drain circuits : Characteristic Curves - JFET small signal parameters - Biasing circuits and bias line analysis - Voltage amplifier and calculations of gain
Week 14	Metal Oxide Semiconductor Field Effect Transistor (MOSFET) - Depletion Type (D-MOSFET) and Construction.
Week 15	Modes of operations , Characteristic Curves , Bias Circuits and Applications
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Introduction of Analog Equipment's
Week 2	Introduction of Analog Electronic Components
Week 3	STUDY OF THE CHARACTERISTICS OF A DIODE AND THE CHARECTERISTIC OF ZENER DIODE (Part 1)
Week 4	STUDY OF THE CHARACTERISTICS OF A DIODE AND THE CHARECTERISTIC OF ZENER DIODE (Part 2)
Week 5	Power Supply - Half Rectifier
Week 6	Power Supply - Full Rectifier
Week 7	Mid Term Exam
Week 8	TRANSISTOR COMMON EMITTER CHARACTERISTICS
Week 9	TRANSISTOR COMMON EMITTER CHARACTERISTICS (Part 1)
Week 10	TRANSISTOR COMMON EMITTER CHARACTERISTICS (Part 2)
Week 11	TRANSISTOR COMMON EMITTER CHARACTERISTICS (Output Circuit) (Part 1)
Week 12	TRANSISTOR COMMON EMITTER CHARACTERISTICS (Output Circuit) (Part 2)
Week 13	TRANSISTOR COMMON EMITTER CHARACTERISTICS (Input Circuit)
Week 14	DESIGN OF A COMMON EMITTER AMPLIFIER (Part 1)
Week 15	DESIGN OF A COMMON EMITTER AMPLIFIER (Part 2)
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Electronic devices by Thomas L. Floyed	
Recommended Texts	Electronic and instrumentation by Gupta	
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	Crime of the Baath regime in Iraq			Module Delivery	
Module Type	Support or related learning activity			☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOB 105				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGII		Semester of Delivery	3	
Administering Department			College	Science College/ University of Baghdad	
Module Leader	Dr. Anwar Ismail Khalil		e-mail	anwar@irco.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Anwar Ismail Khalil		e-mail	anwar@irco.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		e-mail	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number		
Relation with other Modules العلاقة مع المواد الدراسية الاخرى					
Prerequisite module	UOB 104		Semester	1	
Co-requisites module			Semester		

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1- ان الأجيال الحالية لم تعيش فترة الدكتاتورية والكثير منهم لايعرف معاناة الشعب والجرائم التي ارتكبها النظام المقبور. 2-بيان مدى سوء حكم النظام الشمولي والذي لم يقتصر فقط على داخل العراق بل على دول المجاور له 3- توعية الطلبة على الأضرار الكبيرة التي احدثها النظام البائد والجرائم التي ارتكبها بحق الشعب العراقي . 4- أظهار الاضرار الاقتصادية والاجتماعية والتنموية التي أحدثها النظام السابق . 5-بيان مدى وحشية النظام البائد والإعدامات الجماعية. 6-بيان الاساليب القمعية التي مارسها النظام البائد والتهجير القصري . 7-كبح الحريات العامة وتدهور مستوى الاعلام والثقافة . 8-توضيح الأضرار البيئية والزراعية التي ظهرت آثارها في السنوات السابقة والحالية. 9- بيان مدى سوء حكم النظام الشمولي والذي لم يقتصر فقط على داخل العراق بل على دول المجاورة ايضا. 10- ان الهدف من تدريس هذه المادة لمعرفة تاريخ تلك الحقبة السوداء. 11- الهدف من هذه المادة ان الحكم في العراق لن يدوم باستخدام أدوات العنف والقوة مهما كانت مفرطة والعراق يجب ان يحكم بنظام سياسي يحترم العراقيين ومعتقدات ودياناتهم وقومياتهم وان يؤمن بالتعدد في المجتمع العراقي.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-التعرف على الجرائم النظام البائد في كبح الحريات العامة 2- دراسة الانظمة السياسية في العراق نبذة تاريخية 3- معرفة ابرز انتهاكات النظام البعثي للحقوق والحريات 4- معرفة اثر سلوكيات النظام البعثي المقبور على المجتمع العراقي 5-التوضيح للاجيال الحالية حقيقة حقبة تاريخية سوداء في تأريخ العراق المعاصر التي شهدت الظلم والاستبداد 6-الاطلاع على وحشية واستبداد وقمع النظام البائد للشعب العراقي 7-معرفة ان الظلم والاستبداد والحكم الدكتاتوري لن يدوم مهما كانت قسوته 8- تعليم الطلبة وارشادهم على النظام السياسي الصحيح لحكم هذا الشعب الطيب. والذي يجب ان يبتعد عن الدكتاتورية والظلم وان يكون مبنى على العدالة واحترام التعددية الدينية والمذهبية والقومية 9- توعية الطلبة الى حجم الدمار والتلوث البيئي الذي احدثته الحروب واستخدام اسلحة محرمة دوليا 10-بيان مدى قسوة النظام البعثي وقمعه للشعب والمقابر الجماعية التي ضمت رفاة آلاف الشهداء الأبرياء 11-توعية الطلبة الى ماقام به النظام السابق من تهجير ابناء هذا البلد وكفائته العلمية والادبية
Indicative Contents المحتويات الإرشادية	يتضمن المحتوى الإرشادي ما يلي: مقدمة في البداية تتضمن نبذة تاريخية عن النظام السياسي في العراق من قبل بريطانيا وصولاً البوصول حزب البعث المقبور الى السلطة وكذلك دراسة جرايم حزب البعث منذ توليه السلطة والعبث بها كذلك توضيح ما اصاب العراق من اثار وكوارث على يد هذا النظام الدكتاتوري المجرم الذي جسد اقسى انواع التعسف والظلم والطغيان والاستبداد كذلك ارشاد الطلبة الى ان الظلم والاستبداد يدمر الشعوب ويجر الويلات عليها وبيان الاثار التي حدثت نتيجة الحروب العبثية التي خلفت ورائها تدمير في كل مفاصل البلاد فدمرت البنى التحتية والتربة والمياه والسماء والاشجار وكل شئ في هذه البلاد والتي كانت من افضل بلدان الشرق الاوسط .كذلك تم تدمير حتى البيئة المائية من خلال تسريب النفط في حرب الكويت والخسائر الاقتصادية الهائلة وتضرر الابار النفطية والبنى التحتية والصناعة وفرض حصار دمر البيئة الاجتماعية والاقتصادية التي لازلنا الى يومنا هذا نرفع اثار النظام البائد على الصعيد الدولى والداخلى.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الإستراتيجية المهمة التي تم تبنيها في هذه الوحدة هي توعية الطلبة وعملية تنمية مداركهم العقلية على فهم النظام السياسي العراقي البائد ومعرفة الجرائم التي ارتكبها النظام البائد وعمليه تحفيز الطلبة على التامل والتفكير في التحليل هذه الجرائم وانعكاساتها والعمل على محاربة الظلم ولاستبداد ورفض اي شكل من اشكال الدكتاتورية كذلك استخدام البرامج التفاعلية والتعليمية في استخدام الادوات التحليلية والنقدية وتشجيع الطلبة على البحث والحوار والنقاش على اسس معرفية تستند الى عمليات البحث العلمي والتدقيق والقراءة العميقة والفهم الجيد والرصانة العلمية وكذلك استخدام الوسائل العلمية والاساليب التفاعلية سواء كانت المسموعة والمرئية واعطاء الادلة المادية الواضحة على وحشية النظام السابق لكي يطلع الطلبة وتصبح لديهم قناعة علمية راسخة على هذة الحقبة السوداء والجرائم التي لم تشهد لها البشرية مثال .كذلك تنمية القدرة الذهنية والفكرية لدى الطلبة على معرفة الأنظمة الصالحة. كذلك تفعيل الدور الأخلاقي وزرع الأخلاق والقيم والمبادئ الحميدة لدى الطلبة.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	18	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	7	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	0.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	25		

Module Evaluation
تقييم المادة الدراسية

As		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	8	10% (10)	2,3,6,8,10 and 12	LO #3, #4 and #6, #7
	Projects / Lab.		10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr:	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	مقدمة عن انتهاكات الحقوق والحريات
Week 2	نبذة وصفية عن الانظمة السياسية في العراق
Week 3	انتهاكات النظام البعثي للحقوق والحريات العامة
Week 4	اثر سلوكيات النظام البعثي في المجتمع وتسلطه على الدولة
Week 5	اثر المرحلة الانتقالية في محاربة السياسة الاستبدادية
Week 6	الميدان النفسي والاجتماعي
Week 7	Mid Exam
Week 8	الدين والدولة
Week 9	عسكرة المجتمع والثقافة والاعلام
Week 10	اثر القمع والحروب على البيئة والسكان
Week 11	التلوث البيئي واستعمال الاسلحة المحرمة دوليا
Week 12	سياسة الارض المحروقة وتجفيف الاهوار
Week 13	المقابر الجماعية وتدمير البيئة الزراعية
Week 14	Mid Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	منهاج جرائم حزب البعث البائد 2023/جمهورية العراق/وزارة التعليم العالي والبحث العلمي/دائرة الدراسات والتخطيط	
Recommended Texts		
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	English Language (2)			Module Delivery	
Module Type	Support or related learning activity			☒ Theory ☐ Lecture ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOB 202				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGII		Semester of Delivery	3	
Administering Department	Type Dept. Code		College	Type College Code	
Module Leader	Rania Yahia		e-mail	Rania.y@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		Module Leader's Qualification	Ph.D.	
Module Tutor	Rania Yahia		e-mail	Rania.y@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Farah Tariq M. Noori		e-mail	farah.noori@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	UOB 102	Semester	2
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	a pre-intermediate level course aiming to build and further improve language proficiency for second year students/ college of science, 1. Listening Objectives: • Understand and respond appropriately to a variety of spoken English in familiar contexts. • Comprehend main ideas, specific details, and implied information in spoken texts. • Develop listening strategies to enhance understanding. 2. Speaking Objectives: • Engage in conversations on a range of topics using appropriate vocabulary and grammar. • Express opinions, preferences, and experiences. • Develop speaking strategies for effective communication, such as turn-taking and seeking clarification. 3. Reading Objectives:

	• Read and understand a variety of texts, including articles, stories, and informational passages. • Comprehend main ideas, details, and implied information in written texts. • Develop reading strategies for comprehension and vocabulary acquisition. 4. Writing Objectives: • Write coherent paragraphs and short texts on different topics. • Express ideas clearly and logically using appropriate grammar and vocabulary. • Develop writing strategies for organization, coherence, and accuracy. 5. Grammar and Vocabulary Objectives: • Develop a solid understanding and usage of a wide range of grammatical structures appropriate for the pre-intermediate level. • Expand vocabulary knowledge to include a broader range of words, idiomatic expressions, and collocations. • Apply grammar and vocabulary knowledge to express oneself accurately and effectively. 6. Pronunciation and Intonation Objectives: • Improve pronunciation accuracy of individual sounds, stress patterns, and intonation. • Use appropriate rhythm, stress, and intonation for effective communication. • Recognize and produce connected speech features to enhance fluency and naturalness. 7. Cultural Awareness Objectives: • Develop an understanding of cultural practices, customs, and social norms in English-speaking countries. • Demonstrate cultural sensitivity and adapt communication accordingly. • Recognize the impact of culture on language use and communication styles.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Learner training is essential to the achievement of the Learning Outcomes. 1. Listening and Speaking: • Understand and respond appropriately to a range of everyday spoken English in familiar contexts. • Engage in conversations and discussions on a variety of topics using appropriate language and strategies. • Comprehend and extract information from spoken texts, such as interviews, dialogues, and narratives. 2. Reading: • Read and understand a variety of texts, including articles, stories, and informational passages. • Comprehend main ideas, details, and specific information from the texts. • Apply reading strategies to infer meaning from context and make predictions. 3. Writing: • Write coherent and well-organized paragraphs and short texts on various topics. • Express ideas and opinions clearly and concisely. • Demonstrate control of grammar, vocabulary, and sentence structures appropriate for the pre-intermediate level. 4. Grammar and Vocabulary: • Understand and use a wide range of grammatical structures and tenses, including present perfect, past simple, future forms, and conditionals.

	• Expand vocabulary knowledge to include a broader range of words, idiomatic expressions, and collocations. • Apply grammar and vocabulary in context to enhance communication skills. 5. Pronunciation and Intonation: • Develop accurate pronunciation of individual sounds and common word stress patterns. • Use appropriate intonation and stress patterns to convey meaning effectively. • Understand and produce connected speech features, such as linking sounds and contractions. 6. Cultural Awareness: • Gain insights into cultural practices, traditions, and customs in English-speaking countries. • Develop intercultural competence and sensitivity in communication. • Understand cultural influences on language use and behavior.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1: Greetings and Introductions • Vocabulary: Greetings, introductions, personal information • Grammar: Present simple, present continuous, subject pronouns, possessive adjectives • Skills: Listening to and giving personal information, role-playing introductions, writing short personal profiles 2: Daily Routines • Vocabulary: Daily activities, time expressions • Grammar: Present simple, adverbs of frequency, prepositions of time • Skills: Talking about daily routines, describing habits and schedules, writing a daily routine diary 3: Family and Relationships • Vocabulary: Family members, relationships, adjectives to describe people • Grammar: Possessive 's, can/can't, imperatives • Skills: Talking about family members, describing people's appearance and personality, writing about a family member 4: Free Time and Hobbies • Vocabulary: Leisure activities, hobbies, sports • Grammar: Present simple vs. present continuous, question words • Skills: Discussing leisure activities, talking about hobbies and interests, writing about favorite pastimes 5: Shopping and Money • Vocabulary: Shops, money, prices, clothes • Grammar: Countable and uncountable nouns, plurals, quantifiers • Skills: Role-playing shopping conversations, describing clothes, writing a shopping list 6: Travel and Transportation • Vocabulary: Means of transport, travel destinations, directions • Grammar: Present perfect, past simple, adverbs of time • Skills: Discussing travel experiences, giving and following directions, writing about a memorable trip 7: Food and Eating Habits • Vocabulary: Food items, meals, cooking, restaurants • Grammar: Countable and uncountable nouns, articles, some/any

	• Skills: Talking about food preferences, ordering in a restaurant, writing a recipe 8: Health and Well-being • Vocabulary: Health issues, symptoms, remedies • Grammar: Should/shouldn't, modals for advice and obligation • Skills: Discussing health problems, giving advice, writing a health blog post 9: Jobs and Careers • Vocabulary: Professions, job descriptions, skills • Grammar: Past continuous, comparatives and superlatives • Skills: Talking about jobs and career aspirations, describing job experiences, writing a resume 10: Future Plans and Ambitions • Vocabulary: Future forms (will, going to, present continuous), ambitions, goals • Grammar: Future forms, time clauses • Skills: Discussing future plans, setting goals, writing a letter to your future self 11: Technology and Communication • Vocabulary: Communication devices, social media, technology-related terms • Grammar: Present perfect continuous, future continuous, indirect questions • Skills: Discussing technology and its impact, describing communication habits, writing an email or text message 12: Environment and Sustainability • Vocabulary: Environmental issues, natural disasters, conservation • Grammar: Conditional sentences, passive voice • Skills: Discussing environmental concerns, expressing opinions on sustainability, writing an article on environmental conservation 13: Culture and Traditions • Vocabulary: Festivals, customs, cultural practices • Grammar: Reported speech, relative clauses • Skills: Talking about cultural events, comparing traditions, writing a description of a cultural celebration 14: Education and Learning • Vocabulary: School subjects, learning methods, educational institutions • Grammar: Past perfect, modals for possibility and certainty • Skills: Discussing educational experiences, describing favorite subjects, writing an opinion essay on the benefits of education 15: Travel and Tourism • Vocabulary: Tourist attractions, accommodation, travel experiences • Grammar: Comparative and superlative adjectives, phrasal verbs • Skills: Talking about travel preferences, recommending destinations, writing a travel blog post or itineraryING LISTENING SPEAKING WRITING

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1.Communicative Approach: Emphasize communicative activities that promote interaction among students. Encourage pair and group work, role-plays, and discussions to practice language skills in meaningful contexts. 2.Integrated Skills: Integrate the four language skills (speaking, listening, reading, and writing) in lessons to create a balanced approach to language learning. Provide opportunities for students to use and develop these skills simultaneously.

	3.Vocabulary Expansion: Incorporate vocabulary-building exercises and activities throughout the course. Use real-life contexts, visuals, and practical examples to help students learn and remember new words. 4.Grammar Focus: Teach and reinforce grammar structures in a systematic and progressive manner. Provide clear explanations, examples, and practice exercises to ensure students understand and can apply the grammar rules correctly. 5.Authentic Materials: Include authentic texts, such as articles, newspaper clippings, songs, and videos, to expose students to real-world language usage. This helps develop their reading and listening comprehension skills and exposes them to cultural aspects of English-speaking countries. 6.Cultural Awareness: Integrate cultural topics and discussions into the lessons to foster cultural awareness and sensitivity. Encourage students to share their own cultural backgrounds and experiences to promote understanding and appreciation of diverse perspectives. 7.Error Correction: Provide constructive feedback and error correction during speaking and writing activities. Help students identify and correct their mistakes, focusing on accuracy while encouraging fluency and self-expression. 8.Technology Integration: Utilize technology tools, such as interactive whiteboards, online resources, and language learning apps, to engage students and enhance their language learning experience. Incorporate multimedia materials for listening and speaking practice. 9.Regular Assessment: Assess students' progress regularly through quizzes, tests, and assignments. Provide timely feedback to guide their learning and address areas that need improvement. 10.Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported. 11.Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12.Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments as follows:
Week 1	Getting to know you p6 **Tenses** *Present, past, future* p6 Questions *Where were you born?* *What do you do?* p6 Question words *Who …?, Why …?,* *How much …?* p7 **Right word, wrong word** Verbs of similar meaning *speak/talk*, *say/tell* Adjectives and nouns that go together Prepositions *to, from, at, about, of, on, in,* etc. Words with two meanings *I met my husband on a blind date.* *Dates are good for you.* p12 **Social expressions** *Have a good weekend!* *Same to you.* p13
Week 2	Whatever makes you happy p14 **Present tenses**

	Present Simple *She lives alone in Bristol.* p14 Present Continuous *She's planning …* p14 *have/have got* *He has his own company.* *I've got an idea for …* p15 **Things I like doing** *play games* *have a lie-in* *get up late* p17 **Making conversation** *What a lovely day it is today!* *Are you having a good time in London?* *Have a good weekend!* p21
Week 3	What's in the news? p22 **Past tenses** Past Simple *How far did he walk?* *I had a shower last night.* p23 Past Continuous *I was having a shower when …* p23 **Adverbs** *drive carefully* *speak furiously* *work hard* p28 **Saying when** *What's the date today?* *It's June the twentysecond.* *When did you last go to the cinema?* *Two weeks ago.* p29
Week 4	Eat, drink, and be merry! p30 **Quantity** *much* and *many* *How much milk?* *How many eggs?* p31 *some* and *any* *some apples, any bananas* p31 *a few*, *a little*, *a lot/lots of* p31 *something* / *someone* / *somewhere* p32 Articles *a shopkeeper, an old village, the north of England, He came*

	by bus. p32 Food *apples, beer, bread, cake* p36 Shopping *newsagent's, chemist's,* *off-licence* p36 Can you come for dinner? *Would you like some* *more rice?* *Could you pass the* *salt, please?* *How would you like* *your coffee?* *This is delicious!* p37
Week 5	Looking forward p38 Verb patterns *want/hope to do* *like/enjoy doing* *looking forward to doing* *'d like to* p38 Future forms *going to*, *will* and Present Continuous *I'm going to stay with a friend.* *I'll call or text you.* *I'm working late this evening.* p40 Phrasal verbs – literal *move back* *take away* *grow up* p44 Phrasal verbs – idiomatic *give up* *take off* *look after* p44 Expressing doubt and certainty *Of course he will.* *He might do.* *Mmm … maybe.* *I doubt it.* *No chance.* p45
Week 6	The way I see it p46 *What … like?* *What's your teacher like?* p46 Comparative and superlative adjectives *big, bigger, biggest* *good, better, best* p47 *as … as* *It isn't as hot as Dubai.* p47 Relative pronouns

	who/that/which/where p110 Synonyms and antonyms *lovely, beautiful* *brilliant, terrible* p52 What's on? *How much is it to go* *in the museum?* *Is it open on Sunday?* *What film is suitable* *for children?* p53
Week 7	Mid-term Exam
Week 8	Living history p54 Present Perfect *John has lived there for three* *years.* p55 *for* and *since* *for two hours* *since six o'clock* p55 *ever* and *never* *Have you ever been …?* *I've never been to South America.* p56 Present Perfect or Past Simple *Have you had an ordinary job?* *I worked in a restaurant.* p57 Word endings Jobs *philosopher, historian,* *economist* p57 Nouns and adjectives *competition, famous* p57 Word stress *danger, dangerous* *invite, invitation* p57 Agree with me! *It's wonderful, isn't it?* *You come from* *Scotland, don't you?* *It wasn't easy, was it?* *You've lived here for* *years, haven't you?* p61
Week 9	Girls and boys p62 ***have to*** *She has to train hard.* *I don't have to train every day.* *Do you have to work at* *weekends?* p63 ***should*** *You should show him this letter.* p64

	must *He must get professional help.* p64 **Things to wear** *belt, cap, boots, jumper,* *make-up* p68 Materials *leather, wool, denim,* *cotton* p68 Situations *job interview, party, beach* *holiday* p68 **At the doctor's** *a sore throat, flu, food* *poisoning* *I've got a fever.* *My body aches.* *My glands are* *swollen.* p69
Week 10	Time for a story p70 **Past Perfect** *They had walked twenty miles.* p71 **Narrative tenses** *They saw a bear.* *They were looking for work.* p71 **Joining sentences** *although, because* *when, while, before, after, as, until,* *as soon as* p72 **Feelings** *angry, nervous, delighted,* *stressed* p76 **Exclamations with so and such** *I was so scared!* *It was such a shock!* *We had such terrible* *weather!* *I've got so much work!* p77
Week 11	Our interactive world p78 **Passives** *Mobile phones are used by almost* *6 billion people.* *The first mobile phone call was made* *in 1973.* *Camera phones have been sold since* *2002.*

	Landline telephones will be replaced by mobile phones. p79 **Words that go together** Noun + noun *text message,* *businessman* p81 Verb + noun *take notes,* *send a text message* p81 Adverb + adjective *well-known,* *badly-behaved* p81 **On the phone** *07700 900333* *Can I speak to Patrick, please?* *I'm calling because …* *Sorry, you're breaking up …* p85
Week 12	Life's what you make it! p86 **Present Perfect Continuous** *He's been making programmes since 2007.* *How long has she been working there?* p87 Present Perfect Simple versus Continuous *He's made three programmes.* *He's been teaching for three years.* p87 **Birth, marriage, death** *pregnant, born* *engaged, divorced* *funeral, died of* p92 **Good news, bad news** *Congratulations!* *That's fantastic news!* *What a shame!* *I'm so sorry.* p93
Week 13	Just wondering … p94 **First conditional *if* + *will*** *If it's sunny, we'll go for a picnic.* *We won't go out if it rains.* p95 *going to* and *might* *What are you going to do tonight?* *I might go out …* p95 **Second conditional *if* + *would*** *If I had a brother, I'd play with him.*

	If I were you, I'd stop smoking. p96 **Prepositions** *connected to* *on a date* *listen to* *think about* p100 **Thank you and goodbye!** *It's late. I must be* *going now.* *Thank you for a lovely* *evening.* *My pleasure!* p101
Week 14	**Living in a stately home** *Living history,* Chatsworth House and the family who calls it home p58 **A family history** David Taylor Bews from Perth, Australia researches his family history p60 **What do you think?** Stately homes Aristocracy Inherited wealth p58 **Talking about you** Have you ever …? p57 The lives of your grandparents p60 **What do you think?** Family history p60 **A biography** Ordering paragraphs: Two Kennedys Researching facts about a famous person and writing a biography p111
Week 15	**Families with all boys or all** **girls** *Sons and daughters* The parents of four daughters swap homes with the parents of four sons p66 **Heptathlon champion** An interview with Jessica Ennis – Britain's first world heptathlon champion p65 **What do you think?** Talking about successful people p65

	Pros and cons of all-girl or all-boy families The ideal family p66 **Dress person X** Describing an outfit p68 **Letters and emails** Formal and informal expressions *Dear Sir or Madam,* *Yours sincerely,* *Hi Cathy,* *Love Steve* Writing a formal letter to a language school and an email to an English friend p112
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	The core textbook is *Soars, John and Liz, (2011), New Headway Plus Pre-Intermediate Student's Book, Special Edition, Oxford University Press*	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	No
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, pre-Intermediate" or browse their English language teaching section for information on the course.	

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	Arabic Language (2)			Module Delivery	
Module Type	Basic learning activities			☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOB 201				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGII		Semester of Delivery	3	
Administering Department	Physics		College	Science	
Module Leader	Dr. Leqaa Faleh Owdaa		e-mail	leqaa.falih@ircoedu.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Leqaa Faleh Owdaa		e-mail	leqaa.falih@ircoedu.uobaghdad.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	UOB 101		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	1-تعلم مهارات الكتابة والاملاء والتعبير الصحيح خلال تطبيق قواعد اللغة العربية بشكل مفصل وتطبيقي على نصوص عربية. 2- لفهم الجمع وأنواع الاسماء وكيفية التعامل معها. 3- لفهم العدد واستعماله بشكل صحيح من حيث المطابقة والمخالفة للتفريق بين الضاد والظاء. 4- للتفريق ومعرفة استعمال التاء المربوطة والتاء الطويلة. 5-التميز بين العلامات الاصلية والفرعية. 6- تعلم استعمال الأدوات وعمل كل أداة ومعناها في التعبير.				
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	هام: اكتب 6 مخرجات تعليمية على الأقل، ومن الأفضل أن تكون مساوية لعدد أسابيع الدراسة 1- التعرف على كيفية جمع الأسماء وأنواع الجموع وسبب اختلافها وقائمة بالمصطلحات المختلفة المرتبطة ببلاغة اللغة العربية تعلم كتابة الهمزة وانواعها. 2-وصف عمل الجمل الفعلية وأنواع الافعال 3- ناقش وتفاعل ومشاركة قواعد الجمل الاسمية وعلامات الاعراب الاصلية والفرعية والتطبيقات ضمن نصوص أدبية وقرانية. 4-القدرة على استعمال علامات الترقيم في كتابة البحوث والتقارير. 5-التميز بين الأدوات وأسلوب العطف والجر. 6-التعرف على قواعد اللغة العربية الأساسية وتطبيقاتها.				
Indicative Contents المحتويات الإرشادية	يتضمن المحتوى الإرشادي ما يلي. مقدمة في البداية التي أسس لها علماء اللغة العربية وكيف بدأت كتابة المؤلفات بالمعاجم والقواعد وجمع وحركة الترجمة والفتوحات وتطور اللغة اللهجات واستقراء اللغة.				

	ومشكلات المراجعة (6 ساعات) ومشكلات الكتابة والاملاء التي يقع .ودراسة الجمل وانواعها والافعال، والعلامات الاصلية ،والفرعية والعدد فيها الطلبة في التفرقة بين الضاد والظاء والتاء المربوطة والطويلة والهمزة وانواعها وكيفية كتابتها. (6ساعات) ودراسة الموضوعات الصرفية التي تخص المشتقات من اسم الفاعل واسم المفعول وصيغة المبالغة واوزانها، ومعانيها، وصيغها السماعية والقياسية.. (6ساعات).وعلامات الترقيم وكيفية توظيفها في كتابة التقارير والبحوث والمخطوطات

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	كتب شيئًا مثل: الاستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة في التمارين، مع تحسين مهارات التفكير النقدي وتوسيعها في نفس الوقت. سيتم تحقيق ذلك من خلال الفصول والبرامج التعليمية التفاعلية ومن خلال النظر في أنواع التجارب البسيطة التي تتضمن بعض أنشطة أخذ العينات التي تهم الطلاب.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	0.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	علامات الترقيم والتنقيط والنواسخ
Week 2	المشتقات.
Week 3	الجملة الاسمية
Week 4	الجملة الفعلية
Week 5	الفرق بين الضاد والظاء
Week 6	التاء المربوطة والتاء المفتوحة
Week 7	Midterm Exam
Week 8	الهمزة وانواعها العدد
Week 9	الجمع

Week 10	العلامات الاصلية والعلامات الفرعية
Week 11	اعلام عراقيون بدر شاكر السياب والجواهري
Week 12	العطف
Week 13	حروف الجر
Week 14	الاسم المؤنث والاسم المذكر
Week 15	الحذف والزيادة, الأسماء المنصوبة
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	جامع الدروس العربية وشرح ابن عقيل	Yes
Recommended Texts		
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

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Level Two (UGII)
Semester- Four

Module Description Form
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Modern Physics II			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2420				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UGII		Semester of Delivery	4	
Administering Department	Department of Physics		College	College of Science / University of Baghdad	
Module Leader	Dr. Mohammed Abdullah Hameed Dr. Iqbal Siham Naji Dr. Saad Mohammed Saleh		e-mail	mohammed.a@sc.uobaghdad.edu.iq iqbal.naji@sc.uobaghdad.edu.iq saadtm2000@gmail.com	
Module Leader's Acad. Title	Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Mohammed Abdullah Hameed Dr. Iqbal Siham Naji Dr. Saad Mohammed Saleh		e-mail	mohammed.a@sc.uobaghdad.edu.iq iqbal.naji@sc.uobaghdad.edu.iq saadtm2000@gmail.com	
Peer Reviewer Name	Dr. Falah A-H. Mutlak		e-mail	Falah.mutlak@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 2313	Semester	3
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	8. Teaching students the basic principles of physics. 9. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 10. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 11. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff.

	12. The service of preparing graduates specialized in physics who contribute to development in the country. 13. Meeting the needs of various sectors with highly qualified personals in the field of physics. 14. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*I. Cognitive goals* 5. To enable the student to know and understand the basics of physics. 6. To make students able to understand physical phenomena from a mathematical point of view. 7. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 8. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *J. The skills goals special to the program* 5. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 6. Usage and development skills. 7. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 8. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	The course aims to teach the student one of the most important basics of physics (atomic physics), which includes a lot of basics that must be seen and known by a student specializing in physics and making him able to understand these basics and logical and scientific analysis in the interpretation of physical phenomena, as well as enabling the student to solve issues related to vocabulary matter using the laws of atomic physics.

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	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	The atomic models of Rutherford and Bohr 1.1 Introduction 1.2 The Rutherford model of the atom
Week 2	1.3 Spectrum of hydrogen gas1.3 Spectrum of hydrogen gas 1.4 Boher model of theory of atoms
Week 3	1.5 Energy levels of hydrogen atom 1.6 Binding energy
Week 4	1.7 Ionization potentials of hydrogen atom 1.8 Many electron atoms
Week 5	1.9 Quantum numbers 1.10 Pauli exclusion principle
Week 6	1.10 Electron shells and chemical activity and Examples
Week 7	Midterm Exam
Week 8	X-rays 3.1 Discovery 3.2 Production of x-rays
Week 9	3.3 The nature of x-rays 3.4 X-rays diffraction
Week 10	3.5 Mechanism of x-ray production 3.6 X-ray energy
Week 11	3.7 X-ray spectra of the elements atomic number

	3.8 Compton scattering
Week 12	Structure of solids 2.1 Introduction 2.2 Atomic bonding - Ionic bonding - Covalent bonding
Week 13	- Metallic bonding - Vander wall's bonding 2.3 Unit cell 2.4 Miller indices
Week 14	2.5 Crystal structure - Lattice planes and direction - Atomic packing
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	Find the Rydberg constant
Week 2	Backscattering of a beta particle
Week 3	Measure the ionization potential using Frank-Hertz tube
Week 4	Spectrum of helium atom
Week 5	Inverse square law
Week 6	Planck's constant
Week 7	Midterm Exam
Week 8	Stefan's law
Week 9	Find the stopping potential
Week 10	Light absorption coefficient using half thickness
Week 11	Determination of the charge of an electron by Millikan experiment
Week 12	Determining the wavelengths Hα , Hβ , and Hγ from Balmer series of Hydrogen atom
Week 13	Black body radiation
Week 14	Diffraction of electrons in a polycrystalline lattice (Debye-Scherrer diffraction), Rutherford dispersed
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1- M. Russell Wehr and James A. Richards "The physics of the atom" 2- Richard T. Wridner and Robert L. Sells "Elementary modern physics" 3- M.C. Lovell and A. J. Avery "Physical properties of material"	Yes
Recommended Texts	Modern Physics Books	
Websites	Modern Physics 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	*Thermodynamic and Statistical mechanics*			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2421				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UGII		Semester of Delivery	4	
Administering Department	Department of Physics		College	Science College/ University of Baghdad	
Module Leader	Dr. Bushra Abbas Hasan Dr. Hussein Khazal Rasheed Dr. Ali Adil Abbas		e-mail	Bushra.ab@sc.uobaghdad.edu.iq Hussein.k@sc.uobaghdad.edi.iq Ali.adel@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Bushra Abbas Hasan Dr. Hussein Khazal Rasheed Dr. Ali Adil Abbas		e-mail	Bushra.ab@sc.uobaghdad.edu.iq Hussein.k@sc.uobaghdad.edi.iq Ali.adel@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Farah Tariq M. Noori		e-mail	farah.noori@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 2314	Semester	3
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff.

	5. The service of preparing graduates specialized in physics who contribute to development in the country. 6. Meeting the needs of various sectors with highly qualified personals in the field of physics. 7. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*K. Cognitive goals* 9. To enable the student to know and understand the basics of physics. 1. To make students able to understand physical phenomena from a mathematical point of view. 2. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 3. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *L. The skills goals special to the program* 1. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 2. Usage and development skills. 3. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 4. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	In this course content a brief introduction to thermodynamics which is concerned with heat or thermal energy in the first place and with all phenomena that appear or relate to this energy, such as the processes of heat transfer from one body to another or how this energy stored or generated.The zeroth law of thermos dynamics which define temperature and scales used to measure it, the first law of thermodynamics, or the law of conservation of energy,

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	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Heat Engines and the Second Law of Thermodynamics
Week 2	Reversible and Irreversible Processes The Carnot Engine
Week 3	Gasoline and Diesel Engines Heat Pumps and Refrigerators Entropy
Week 4	Entropy Changes in Irreversible Processes
Week 5	Total Differential of a Dependent Variable Total Differential of the Internal Energy Enthalpy, Helmholtz Energy, and Gibbs Energy
Week 6	Closed Systems. Open Systems Maxwell Equations
Week 7	Midterm Exam
Week 8	Expressions for Heat Capacity Surface Work Criteria for Spontaneity
Week 9	The Clayperon equation
Week 10	General Relation of du,
Week 11	General Relation of dh
Week 12	General Relation of ds
Week 13	TdS equations

Week 14	General relation of C_P, C_V Mayer relation, The Joule–Thomson coefficient
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	Introduction to the laboratory experiments
Week 2	Measuring the heat of vaporization of a liquid by electrical method
Week 3	Measurement of saturated vapor pressure of a rapidly evaporating liquid such as alcohol
Week 4	Calculate the ratio of the thermal conductivity coefficients of two inferior materials
Week 5	joule equivalent
Week 6	Thermal conductivity coefficient of glass
Week 7	Midterm Exam
Week 8	The specific heat of a poorly conductive body by mixing method
Week 9	The change of viscosity coefficient of a liquid with temperature
Week 10	Measuring energy in terms of voltage and current and comparing it with the energy of water
Week 11	Converting mechanical energy to thermal energy
Week 12	Finding the efficiency of solar collector
Week 13	Study the characteristics of heat pump
Week 14	Measuring the volume expansion coefficient of liquids, Review the experiments
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Mark Waldo Zemanski_ Richard Dittman - Heat and thermodynamics _ an intermediate textbook (1997, McGraw Hill Thermodynamics and engineering approach, fifth edition, Younis A. Cengel and Michael A. Boles Thermodynamics and chemistry, Second Edition Version 4, March 2012, Haward Devone	Yes
Recommended Texts		
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	Analytical Mechanics (2)			Module Delivery	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2422				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	2		Semester of Delivery	4	
Administering Department	Department of Physics		College	Science College/ University of Baghdad	
Module Leader	Dr. Akram Noori Al-Shadeedi Dr. Mustafa Mohammed Ali		e-mail	Akram.sadeq@sc.uobaghdad.edu.iq Mustafa.Hussein@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Akram Noori Al-Shadeedi Dr. Mustafa Mohammed Ali		e-mail	Akram.sadeq@sc.uobaghdad.edu.iq Mustafa.Hussein@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad M. S. Al-Haddad.		e-mail	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 2315	Semester	3
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 5. The service of preparing graduates specialized in physics who contribute to development in the country.

	6. Meeting the needs of various sectors with highly qualified personals in the field of physics. 7. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***M. Cognitive goals*** 1. To enable the student to know and understand the basics of physics. 2. To make students able to understand physical phenomena from a mathematical point of view. 3. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 4. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. ***N. The skills goals special to the program*** 1. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 2. Usage and development skills. 3. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 4. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	In this course content a many particle systems, Lagrangian points, Conservation laws and collisions. Expanded presentation of rocket motion, Rotation of body about a fixed axis. Expanded discussion of laminar motion, Moments of inertia, Rotation of a body in three dimensions, Numerical solutions of the rotation of bodies with differing principal moments of inertia, Lagrangian and Hamiltonian mechanics. Conservation laws.

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

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Dynamics of Systems of Particles, Center of Mass and Linear Momentum of a System, Angular Momentum and Kinetic Energy of a System.
Week 2	Motion of Two Interacting Bodies: The Reduced Mass, The Restricted Three-Body Problem, Collisions, Oblique Collisions and Scattering: Comparison of Laboratory and Center of Mass Coordinates.
Week 3	Motion of a Body with Variable Mass: Rocket Motion, Center of Mass of a Rigid Body, Rotation of a Rigid Body about a Fixed Axis: Moment of Inertia.
Week 4	Calculation of the Moment of Inertia, The Physical Pendulum, The Angular Momentum of a Rigid Body in Laminar Motion, Examples of the Laminar Motion of a Rigid Body.
Week 5	Impulse and Collisions Involving Rigid Bodies, Motion of Rigid Bodies in 3D, Rotation of a Rigid Body about an Arbitrary Axis: Moments and Products of Inertia—Angular Momentum and Kinetic Energy.
Week 6	Principal Axes of a Rigid Body, Euler's Equations of Motion of a Rigid Body, Free Rotation of a Rigid Body: Geometric Description of the Motion.
Week 7	Mid Term Exam
Week 8	The Energy Equation and Nutation, The Gyrocompass, Why Lance Doesn't Fall Over (Mostly), Lagrangian Mechanics, Hamilton's Variational Principle: An Example.
Week 9	Generalized Coordinates, Calculating Kinetic and Potential Energies in Terms of Generalized Coordinates: An Example.
Week 10	Lagrange's Equations of Motion for Conservative Systems, Some Applications of Lagrange's Equations, Generalized Momenta: Ignorable Coordinates.
Week 11	Forces of Constraint: Lagrange Multipliers, D'Alembert's Principle: Generalized Forces, The Hamiltonian Function: Hamilton's Equations.
Week 12	Potential Energy and Equilibrium: Stability, Oscillation of a System with One Degree of Freedom about a Position of Stable Equilibrium.

Week 13	Coupled Harmonic Oscillators: Normal Coordinates, General Theory of Vibrating Systems.
Week 14	Vibration of a Loaded String or Linear Array of Coupled Harmonic Oscillators, Vibration of a Continuous System: The Wave Equation.
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Analytical mechanics (Fowles and Cassiday).	Yes
Recommended Texts		
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	Digital Electronics			**Module Delivery**	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	PHY 2423				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UGII		**Semester of Delivery**	4	
Administering Department	Department of Physics		**College**	Science /University of Baghdad	
Module Leader	Dr. Estabraq Talib Abdullah Dr. Asmaa Shawqi Khaleel Dr. Falah Hasan Ali		**e-mail**	Estabraqtalib@sc.uobaghdad.edu.iq asmaa.khaleel@sc.uobaghdad.edu.iq Falah.Ali@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Estabraq Talib Abdullah Dr. Asmaa Shawqi Khaleel Dr. Falah Hasan Ali		**e-mail**	Estabraqtalib@sc.uobaghdad.edu.iq asmaa.khaleel@sc.uobaghdad.edu.iq Falah.Ali@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Falah A-H. Mutlak		**e-mail**	Falah.mutlak@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 2316	**Semester**	3
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	8. Teaching students the basic principles of physics. 9. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 10. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 11. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff.

	12. The service of preparing graduates specialized in physics who contribute to development in the country. 13. Meeting the needs of various sectors with highly qualified personals in the field of physics. 14. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*O. Cognitive goals* 5. To enable the student to know and understand the basics of physics. 6. To make students able to understand physical phenomena from a mathematical point of view. 7. Making the student able to know and understand the basics of physics through the use of modern software and keeping pace with scientific development. 8. Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. *P. The skills goals special to the program* 5. Sound scientific research skills and constructive scientific discussions and expressing of opinions. 6. Usage and development skills. 7. Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 8. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	Content of this course A brief introduction to digital electronic circuits including the logic gates, Boolean equation, Arithmetic logic circuits and simplifying logic equations their practical applications.

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	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		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 / Lab.	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

Week	Material Covered
Week 1	Introduction to Digital Electronics
Week 2	Logic gates
Week 3	Combinational logic Circuits
Week 4	Applications
Week 5	Boolean algebra
Week 6	Simplicity logic equations using Boolean algebra
Week 7	Mid Term Exam
Week 8	Arithmetic Logic Circuits: Addition (Half adder, full adder, binary adder)
Week 9	Subtraction (half subtractor, full subtractor, binary subtractor)
Week 10	RS flip-flop and D flip-flop
Week 11	JK flip-flop and T flip-flop
Week 12	Master-Slave flip-flop and Preset and Clear
Week 13	Simplifying Logic Equations using Karnaugh Maps
Week 14	AND-OR network and OR-AND network, NAND-NAND network and NOR-NOR network
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Introduction to Digital Electronics
Week 2	Introduction of Digital Electronic Components
Week 3	Logic Gate Elements (Part 1)
Week 4	Logic Gate Elements (Part 2)
Week 5	Boolean Algebra (Part 1)
Week 6	Boolean Algebra (Part 2)
Week 7	Mid Term Exam
Week 8	Decimal-to-Binary encoder
Week 9	Binary -to- Decimal decoder
Week 10	XOR GATE and its APPLICATION
Week 11	XNOR GATE and its APPLICATION
Week 12	Binary Addition (Part 1)
Week 13	Binary Addition (Part 2)
Week 14	Binary Subtraction (Part 1), Binary Subtraction (Part 2)
Week 15	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Digital Fundamental by Thomas L. Floyd	No
Recommended Texts	Theory And Problem of Digital Principles by Roger L. Tokheim	
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 (3)			Module Delivery	
Module Type	Basic learning activity			☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	COS 2424				
ECTS Credits	3				
SWL (hr/sem)	75				
Module Level	UGII		Semester of Delivery	4	
Administering Department	Department of Physics		College	Science College/ University of Baghdad	
Module Leader	Dr. Zainab Hadi Mahmood		e-mail	zainab.mahmood@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Dr. Zainab Hadi Mahmood		e-mail	zainab.mahmood@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		e-mail	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	COS 1210	Semester	2
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objectives of the academic program of teaching mathematics for the first stage in universities typically include the following: 11. **Developing fundamental mathematical skills**: The first stage of university mathematics education aims to develop students' fundamental mathematical skills, including algebra, geometry, trigonometry, and calculus. Students are expected to master these skills to build a strong foundation for more advanced mathematical concepts. 12. **Promoting critical thinking**: Mathematics education in universities aims to promote critical thinking skills by teaching students to solve problems using logical reasoning, deduction, and analysis. Students learn how to approach complex problems and break them down into simpler, more manageable parts. 13. **Fostering creativity**: Mathematics education can also foster creativity by encouraging students to explore new ideas and develop their own approaches to problem-solving. By encouraging creativity, students can develop a deeper appreciation for the beauty and elegance of mathematics. 14. **Preparing students for advanced study**: The first stage of university mathematics education is often a prerequisite for advanced study in mathematics and related

	fields. Therefore, one of the primary objectives is to prepare students for more advanced coursework by building a strong foundation in fundamental mathematical skills. 15. Enhancing career prospects: Mathematics education can also enhance students' career prospects by providing them with the analytical and problem-solving skills that are highly valued in a wide range of industries, including finance, engineering, and computer science. Thus, the academic program of teaching mathematics at the first stage in universities aims to equip students with the necessary skills and knowledge to succeed in their future careers.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	*Module learning outcomes in math typically include the following*: 21. ***Knowledge***: Students should be able to demonstrate a comprehensive understanding of mathematical concepts, theories, and principles relevant to the module. 22. ***Problem-solving***: Students should be able to apply mathematical knowledge and skills to solve problems and analyze real-world situations. 23. ***Mathematical reasoning***: Students should be able to use mathematical reasoning to derive conclusions and make predictions based on available data. 24. ***Communication***: Students should be able to communicate mathematical ideas and concepts clearly and effectively, both in writing and orally. 25. ***Use of technology***: Students should be able to use technology, such as calculators, computer software, and online resources, to enhance their understanding of mathematical concepts and solve problems. 26. ***Independent learning***: Students should be able to engage in independent learning, such as reading relevant literature, conducting research, and applying mathematical concepts to novel problems. 27. ***Critical thinking***: Students should be able to critically evaluate mathematical arguments and solutions, identify potential errors or weaknesses, and propose alternative solutions. 28. ***Numeracy:*** Students should be able to demonstrate proficiency in numerical skills, including arithmetic, algebra, geometry, and statistics, as appropriate to the module. 29. ***Mathematical modeling:*** Students should be able to create and interpret mathematical models of real-world phenomena, using appropriate mathematical tools and techniques. 30. ***Ethics and professionalism***: Students should be able to apply mathematical knowledge and skills in an ethical and professional manner, respecting the rights and dignity of others and adhering to relevant codes of conduct and professional standards.
Indicative Contents المحتويات الإرشادية	The mathematics course typically covers a range of fundamental mathematical topics, including calculus, Infinite sequences and series, Vectors and geometry space and Partial derivatives. . The course aims to develop students' mathematical skills, including problem-solving, critical thinking, and analytical reasoning, and to prepare them for advanced study in mathematics and related fields.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	*There are many effective learning and teaching strategies for math, including:* 17. **Active learning**: In math, active learning can involve solving problems, working on projects, engaging in discussions, and participating in peer instruction. Active learning helps to reinforce concepts and skills, and encourages students to take ownership of their learning. 18. **Visual aids**: Visual aids, such as graphs, diagrams, and illustrations, can help to make abstract concepts more concrete and easier to understand. They can also help to illustrate complex ideas and relationships. 19. **Real-world applications**: Using real-world examples and applications can help to motivate students and show them the relevance of math to their lives and future careers. Real-world applications can also help to illustrate the practical value of mathematical concepts and techniques. 20. **Scaffolding**: Scaffolding involves breaking down complex concepts and skills into smaller, more manageable steps, and providing support and guidance as students work through each step. Scaffolding can help to build students' confidence and competence, and reduce frustration and anxiety. 21. **Feedback**: Providing timely and constructive feedback is essential for effective learning in math. Feedback can help to identify strengths and weaknesses, reinforce good practices, and provide guidance for improvement. 22. **Collaborative learning**: Collaborative learning involves working in groups or pairs to solve problems, discuss ideas, and provide feedback to one another. Collaborative learning can help to build teamwork skills, deepen understanding of concepts, and promote critical thinking. 23. **Use of technology**: Technology, such as calculators, computer software, and online resources, can be used to enhance learning and teaching in math. Technology can help to visualize abstract concepts, simulate complex systems, and provide interactive and engaging learning experiences. 24. **Differentiated instruction**: Differentiated instruction involves tailoring instruction to meet the diverse learning needs of students. This can involve providing multiple modes of instruction, varying the pace and complexity of instruction, and providing additional support or challenge as needed. **These strategies can be used in combination to create a rich and engaging learning environment for math students.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
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	12	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	**Infinite sequences and series**: Infinite series
Week 2	**Infinite sequences and series**: Integral, comparison, ratio and dinates system
Week 3	**Infinite sequences and series:** Power series
Week 4	**Infinite sequences and series**: Taylor and Maclaurin series
Week 5	**Vectors and geometry space**: 3-dim space, vectors
Week 6	**Vectors and geometry space**: Dot and cross product
Week 7	Midterm exam
Week 8	**Vectors and geometry space**: Lines and planes in space
Week 9	**Vectors and geometry space**: Lines and planes in space
Week 10	**Vectors and geometry space** Cylinders and quadratic surfaces
Week 11	**Vectors and geometry space**: Application + Examples
Week 12	**Partial derivatives**: Function of several variables, limits and continuity
Week 13	**Partial derivatives**: Partial derivatives, **Partial derivatives**: Chain rule, directional derivatives, Taylor formal for two variables
Week 14	**Partial derivatives**: Extrema values and saddle points, Lagrange multipliers
Week 15	Final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1. Stewart. J. "Calculus", 7th Edition, 2012. 2. Thomas. G. B. & Finney. R. L., "Calculus and Analytic Geometry", 6th Edition, 1984.	yes
Recommended Texts		
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

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Computer (2)			Module Delivery	
Module Type	Basic learning activity			☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOB 203				
ECTS Credits	3				
SWL (hr/sem)	75				
Module Level		UGII	Semester of Delivery		4
Administering Department		Computer Science	College	College of Science	
Module Leader	Mela Ghazi Abdul-Haleem		e-mail	a.mela@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Lecturer	Module Leader's Qualification		M.Sc
Module Tutor	Ammar Mahana		e-mail		
Peer Reviewer Name		Dr. Assmaa A. Fahad	e-mail	Assmaa.fahad@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date		01/10/2024	Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	UOB 103	Semester	1
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	This module provides an introduction to essential computer skills. In this module, students will learn, • computer literacy, including hardware and software fundamentals in theory as well as practical. • various office applications (Microsoft Word, Excel, and PowerPoint), where students will use these software applications to create a current resume, and slide presentation. • basic computer knowledge and skills required to obtain an understanding of computer hardware, software, Internet, and web search.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module, students should be able to: 1. Understand computer hardware, software components, and peripheral devices, enabling them to use computers confidently. 2. Manage and organize files and folders on a computer effectively, including creating, renaming, moving, and deleting files and folders. 3. Efficiently employ Microsoft Office to execute fundamental tasks with ease.

	4. Navigate the internet and communicate via email, while understanding internet safety. 5. Upon finishing the course, students will be aware of the ethical and security considerations when using computers, promoting safe and responsible digital behavior.
Indicative Contents المحتويات الإرشادية	Part A: Understanding Computer Components Starting with an introduction to computers, the first part introduces learners to identify computer peripherals, internal components, and the operation of the Windows operating system. Part B: Exploring Microsoft Office In this part, the student will learn how to work with Microsoft Office package to create Word documents and Excel spreadsheets and get ideas to create a PowerPoint presentation. Part C: Navigating the Internet In this part, the student will learn the knowledge of harnessing the power of the internet to search for information through web browsers. Part D: Computer Ethics In this part, the student will learn to address issues related to the misuse of computers and how they can be prevented.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	5. Providing lectures to explain essential principles related to computer skills. 6. Projects and activities shared among students. 7. Examinations to gauge students' understanding and identify areas where additional support may be needed. Providing guidance on textbooks, online resources, and supplementary references that can aid students in their studies more efficiently.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Computer Fundamentals. Characteristics of Computers, Block Diagram of Computer: Input Unit, Storage Unit, Memory size, Output Unit, Arithmetic Logical Unit, Control Unit, Central Processing Unit, Data Representation: Binary Number System.
Week 2	Memory: Types, Units of memory, RAM, ROM, Secondary storage devices – HDD, Flash Drives, Optical Disks: DVD I/O Devices – Keyboard, Mouse, LCDs, Scanner, Plotter, Printer and Latest I/O devices in market
Week 3	MS Windows: Desktop, My Computer, Files and folders using windows explorer; Control Panel, Searching Files and folders
Week 4	MS Word: Introduction, Environment, Help, Creating and Editing Word Document. Saving Document, Working with Text: Selecting, Formatting, Aligning and Indenting
Week 5	MS Word: Finding Replacing Text, Bullets and Numbering, Header and Footer, Working with Tables, Properties Using spell checker, Grammar, AutoCorrect Feature, Synonyms and Thesaurus
Week 6	MS Word: Graphics: Inserting Pictures, Clipart, Drawing Objects, Using Word Art. Setting page size and margins; Printing documents. Mail Merge Practical
Week 7	Mid Exam
Week 8	MS-Excel: Environment, Creating, Opening, and Saving Workbook. Range of Cells. Formatting Cells, Functions: Mathematical, Logical, Date, Time, Auto Sum
Week 9	MS-Excel: Formulas. Graphs: Charts. Types and Chart Tool Bar. Printing: Page Layout, Header and Footer Tab
Week 10	MS PowerPoint: Environment, Creating and Editing presentation, Auto content wizard, using built-in templates
Week 11	MS PowerPoint: Types of Views: Normal, Outline, Slide, Slide Sorter, Slide Show, Creating customized templates; formatting presentations Graphics: AutoShapes, adding multimedia contents, printing slides
Week 12	Internet: Basic Internet terms: Web Page, Website, Home page, Browser, URL, Hypertext, ISP,
Week 13	Web Server Applications: WWW, e-mail, Instant Messaging, Internet Telephony, Videoconferencing, Web Browser and its environment
Week 14	Computer Ethics and Societal Impact: Computer ethics encompass a collection of moral principles that regulate the utilization of computers. It reflects society's perspectives regarding the use of computer hardware and software. These ethical considerations address a range of critical issues, including privacy concerns, intellectual property rights, and the broader societal impact of computer technology.
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week 1	Identifying hardware components (CPU, RAM, storage, etc.); Assemble and disassemble computer hardware components.
Week 2	Installing an operating system (e.g., Windows or Linux); Installing and uninstalling software applications.
Week 3	Understand the principles of data backup and recovery; the Importance of data backup, backup methods, and recovery procedures; Organize, manipulate, and maintain files and folders on a computer or other digital storage devices. It involves tasks such as creating, moving, copying, renaming, deleting, and searching for files.
Week 4	Word Processing. Understanding the Word interface and essential functions; Creating, saving, and opening documents; Formatting documents (headers, footers, styles).
Week 5	Word Processing (continued). Formatting text (font, size, style, and color); Formatting paragraph (alignment, spacing, and indentation); Setting up page layout (margins, orientation, and size).
Week 6	Word Processing (continued). Creating and formatting tables; Inserting images, shapes, and text boxes; Adding hyperlinks and bookmarks; Mail merge for personalized documents; Saving a PDF and setting options.
Week 7	Mid Exam
Week 8	MS-Excel. Overview of Excel and its interface; Basic spreadsheet concepts, including rows, columns, and cells; Entering data and formatting; Using basic functions like SUM, AVERAGE, and COUNT; Error handling in formulas; Absolute and relative references.
Week 9	MS-Excel (continued). More advanced functions, including IF, VLOOKUP, and HLOOKUP; Creating and formatting charts and graphs; Types of charts: bar, line, pie, and more; Adding titles, labels, and data labels to charts; Creating and working with Excel tables; Saving a PDF and setting options.
Week 10	MS-PowerPoint Overview of PowerPoint and its interface; Creating a presentation (Choosing a Template/Theme, Changing the Template/Theme, Adding Slides, and Typing in Content); Formating slide layouts (Choosing a Slide Layout, Changing the Slide Layout); Adding and editing text with outline view.
Week 11	MS-Power Point (continued). Adding/Adjusting pictures and graphics (placing pictures into placeholders, cropping photos, sizing graphics, fixing stretched/squished photos, where to get photos, picture border, and effects); Running a presentation (starting and stopping a slide show, ways to navigate slide shows); Saving a PDF and setting options.
Week 12	Using Email: Understanding how to send and receive email is essential for communication in the modern workplace. Basic skills include composing, sending messages, and attaching files
Week 13	Using Web Browsers: Web browsers such as Google Chrome or Mozilla Firefox are used for browsing the internet. Basic skills include navigating websites, using bookmarks, and completing online forms.
Week 14	Understanding computer ethics issues: 1) Divide the students into small groups. 2) Provide each group with (a real-world privacy scenario. For example, a social media company's data collection practices **or** present a case study involving intellectual property issues, such as software copyright infringement). 3) In their groups, students should discuss the ethical issues raised by the scenario, potential consequences, and possible solutions. 4) Each group presents their findings to the class.
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts		
Recommended Texts	Wallace Wang, Absolute Beginners Guide to Computing, Apress, 2016. Michael Miller, Absolute Beginner's Guide to Computer Basics, Que, 2022. Chris Ewin, Carrie Ewin, Cheryl Ewin, Computers for Seniors: Email, Internet, Photos, and More in 14 Easy Lessons, William Pollock, 2017.	**Available online**
Websites	https://ebooks.lpude.in/library_and_info_sciences/DLIS/Year_1/DCAP101_BASIC_COMPUTER_SKILLS.pdf	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
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	B - Very Good	جيد جدا	80 - 89	Above average with some errors
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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

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