



Module Handbook of
B.Ed. in Physics Program
Physics Department
College of Education in Zulfi
Majmaah University
Kingdom of Saudi Arabia
2015-2016

Module Handbook of B.Ed. in Physics Program

Preface:

The basis of the Bachelor of Education in Physics degree (B.Ed. in Physics) is the traditional preparation of a student for graduate study in physics.

Each of the Bachelor program contains the following:

1. Courses needed to meet general University degree requirements;
2. A core of technical courses intended to give a strong background in Education and teaching;
3. A core of technical courses intended to give a strong background in the physical principles of mechanics, electricity and magnetism, thermodynamics, computational physics, and the quantum theory that governs physical phenomena at the microscopic level of molecules, atoms, and nuclei;
4. Training that enable the student to teaching in the schools.

Standard period of study and credit points gained

The extent of studies required for Bachelor degree is 144 credit hour KSA systems (240 ECTS credits).

The university must arrange the education to enable the student to complete his degree of full-time study).

(1) In order to be awarded the Bachelor Degree, students have to achieve 240 ECTS credit points including the recognition of prior learning at one of the Colleges of Education. One ECTS credit point is equivalent to a workload of 25 - 30 hours. Workload indicates the time students typically need to complete all learning activities (such as lectures, seminars, projects, self-study and examinations) required to achieve the expected learning outcomes. The total workload of the four year study program is 6639 working load hours. (equal to 240 ECTS: European Credit Transfer and Accumulation System) .

(2) In the study program, the following student performance is required:

Table 1.1 Student Performance

Education Categories	Total of Credit	Percentage of Credit	ECTS
University Requirements	12	8.3%	20
Compulsory Sciences Departments	6	4.17 %	10
Physics Courses	94	65.3%	156.5
Educational Courses	26	18.06%	43.5
Field Training	6	4.17%	10
Total	144	100%	240

4- Compulsory Department Requisites

Course Code	Course Number	Course	Credit Hours	Pre-requisite
PHYS	111	General Physics (1)	(1+1+0)2	
PHYS	121	Mathematical Physics (1)	(3+1+0)4	MATH111
PHYS	122	Classical Mechanics (1)	(2+1+0)3	PHYS 111
PHYS	123	General Physics (2)	(2+1+0)3	
PHYS	124	Optics	(3+0+0)3	
PHYS	126	Optics Lab.	(0+1+0)1	
PHYS	212	Mathematical Physics (2)	(2+1+0)3	PHYS 121
PHYS	213	General Physics (3)	(2+1+0)3	PHYS 123
PHYS	214	Thermodynamics	(3+0+0)3	PHYS 123
PHYS	215	Classical Mechanics (2)	(2+1+0)3	PHYS 122
PHYS	221	Mathematical Physics (3)	(2+1+0)3	PHYS 212
PHYS	222	Electricity and Magnetism (1)	(3+1+0)4	PHYS 123

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PHYS	223	Wave motion and Vibrations	(2+1+0)3	PHYS 121 PHYS 123
PHYS	224	Modern Physics	(3+1+0) 4	PHYS 123
PHYS	311	Quantum Mechanics (1)	(3+0+0)3	PHYS 215 PHYS 224
PHYS	312	Electricity and Magnetism (2)	(3+1+0)4	PHYS 222
PHYS	313	Electronics (1)	(2+1+0)3	
PHYS	314	Electrodynamics	(3+1+0)4	
PHYS	321	Statistical Physics	(3+0+0)3	PHYS 214
PHYS	322	Quantum Mechanics (2)	(3+0+0)3	PHYS 311
PHYS	323	Solid State Physics (1)	(2+1+0)3	PHYS 224
PHYS	324	Electronics (2)	(2+1+0)3	PHYS 313
PHYS	411	Computational Physics (1)	(2+1+0)3	PHYS 321
PHYS	412	Solid State Physics (2)	(2+1+0)3	PHYS 323
PHYS	413	Atomic and Molecular Spectra	(3+1+0)4	PHYS 324 PHYS 322
PHYS	415	Nuclear Physics (1)	(3+1+0)4	PHYS 322 PHYS 321
PHYS	421	Computational Physics (2)	(2+1+0)3	PHYS 411
PHYS	423	Nuclear Physics (2)	(3+1+0)4	PHYS 415
PHYS	424	Laser Physics and its Applications	(2+1+0)3	PHYS 413

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Module designation	<i>PHYSCIS</i>
Module level, if applicable	<i>1st Level</i>
Code, if applicable	<i>PHYS 111</i>
Subtitle, if applicable	-
Courses, if applicable	<i>General Physics (1)</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Bodoor E. Altheeb</i>
Lecturer	<i>Bodoor E. Altheeb</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory course in B.Ed. in Physics.</i>
Type of teaching, contact hours	<i>15 hours of Lectures,30 hours of laboratory</i>
Workload	<i>120</i>
Credit points	<i>NCAAA (2) / ECTS(4)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	-

<p>Module objectives/intended learning outcomes</p>	<p>Objectives</p> <ul style="list-style-type: none"> • <i>The definition of the student the foundations vectors and Si units and derived Si units physics</i> • <i>student also recognize the different types of movements and studying detailed motion in a straight line and the movement of projectiles and circular motion</i>
	<p>Knowledge:</p>
	<ul style="list-style-type: none"> • <i>To know Student the foundations of Vector</i>
	<ul style="list-style-type: none"> • <i>To know the student the Si units and derived Si units of Physics</i>
	<ul style="list-style-type: none"> • <i>To know the student the different types of movements and studying detailed motion in a straight line and the movement of projectiles and circular motion.</i>
	<p>Cognitive Skills:</p>
	<ul style="list-style-type: none"> • <i>The development of means to obtain information for the Student</i>
	<ul style="list-style-type: none"> • <i>Personal Development the student to become a personal constructive dialogue</i>
	<ul style="list-style-type: none"> • <i>Urge the student to seek knowledge by several means, and most important electronic means.</i>
	<p>Interpersonal Skills & Responsibility:</p>
<ul style="list-style-type: none"> • <i>Communication skill with others</i> 	
<ul style="list-style-type: none"> • <i>Skill to take responsibility and lead the team</i> 	
<ul style="list-style-type: none"> • <i>Cooperative work skills through discussions, seminars and collaborative work.</i> 	
<p>Communication, Information Technology, Numerical</p>	
<ul style="list-style-type: none"> • <i>The use of electronic networks to serve the course</i> 	
<ul style="list-style-type: none"> • <i>Develop the skills of teamwork and communication</i> 	

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Content	1. <i>Si units and derived Si units</i>
	2. <i>Vectors</i>
	3. <i>Vectors (Continued)</i>
	4. <i>motion in one dimension</i>
	5. <i>motion in one dimension(Continued)</i>
	6. <i>motion in two dimensions</i>
	7. <i>Projectile motion</i>
	8. <i>Circular motion</i>
	9. <i>Simple harmonic motion and Simple pendulum</i>
	10. <i>Work and energy</i>
	11. <i>The law of conservation of energy</i>
	12. <i>Ohm's Law</i>
	13. <i>resistors in series and parallel</i>
Study and examination requirements and forms of examination	<i>Mid-term test: 20%</i>
	<i>Quiz test/ theoretical: 10%</i>
	<i>Quiz test / practical:10%</i>
	<i>Final practical test: 20%</i>
	<i>final theoretical test: 40%</i>
Media employed	Data Show, Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments
Reading list	<i>General Physics to Dr. Samani Ali Shukrallah.</i> <i>General Physics authored d / Khalil my scarf d / known Abdullah and d / Riad al-Bitar.</i>

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Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>2nd Level</i>
Code, if applicable	<i>PHYS 123</i>
Subtitle, if applicable	-
Courses, if applicable	<i>General Physics (2)</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Rasha A. Taha</i>
Lecturer	<i>Rasha A. Taha</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course.</i>
Type of teaching, contact hours	<i>30 hours of Lectures,30 hours of laboratory</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS111</i>

<p>Module objectives/intended learning outcomes</p>	<p>Objectives To recognize the methods of heat- transferring, nature & Behavior of light and the fundamental of electricity & magnetism.</p> <p>Knowledge:</p> <ol style="list-style-type: none">1. To recognize the basic principles of light, heat, electricity and magnetism2. To recognize on some applications of light, heat, electricity and magnetism in the life.3. To show some applied researches in this field. <p>Cognitive Skills:</p> <ol style="list-style-type: none">1. Collect general information to the related topics.2. Use the mathematical equations and related work to be use for the universe understanding.3. Apply the gained mathematical and experimental knowledge in any physical related topic. <p>Interpersonal Skills & Responsibility:</p> <ol style="list-style-type: none">1. Work in a group and learn time management.2. Learn how to search for information through library and internet.3. Present a short report in a written form and orally using appropriate scientific language. <p>Communication, Information Technology, Numerical:</p> <ol style="list-style-type: none">1. Communicate with teacher, ask questions, solve problems, and use computers.2. Illustrate deal with confidence with differential equations, integrations, and differentials.3. Operate questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended.4. Students use information technology in the classroom.
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Content	<ol style="list-style-type: none"> 1. <i>Temperature, Units of Temperature, Conversion between the units of Temperature</i> 2. <i>Types of Thermometers</i> 3. <i>Methods of transferring the heat</i> 4. <i>General law of an ideal gas</i> 5. <i>Elasticity, Hook's law, Stress, Strain</i> 6. <i>Surface Tension, Determination of the Surface Tension Coefficient</i> 7. <i>Nature and behavior of Light</i> 8. <i>Determination of refractive index</i> 9. <i>Luminous flux & illumination</i> 10. <i>Calculating the velocity of light, Fokker Method, ...</i> 11. <i>Coulomb's law, voltage, capacitance</i> 12. <i>Kirchhoff's laws, Wheatstone Bridge, Metre Bridge</i> 13. <i>Magnetic Permeability, retardation circuit</i> 14. <i>Faraday's law, Lenz law, Self inductance</i> 15. <i>Photoelectric effect, Thompson experiment to measure (for an electron) the ratio between the charge and the mass</i>
Study and examination requirements and forms of examination	<p><i>Theoretical Midterm Exam: 20%</i> <i>Homework, Quizzes, Discussions, Team Group, Projects & Lab:20%</i> <i>Experimental Final Exam:20%</i> <i>Theoretical Final Exam: 40%</i></p>
Media employed	<p>Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .experiments</p>
Reading list	<p><i>General Physics, by A.S. Al Sulaimani.</i> <i>General Physics, by K. Weshah, M. Alhaaj and R. Albeetaar.</i></p>

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Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>2nd Level</i>
Code, if applicable	<i>PHYS 121</i>
Subtitle, if applicable	
Courses, if applicable	<i>Mathematical Physics (1)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Elham Aldufeery</i>
Lecturer	<i>Elham Aldufeery</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>46 hours of Lectures, 30 hours of exercises.</i>
Workload	<i>199</i>
Credit points	<i>NCAAA (4) / ECTS(7)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>MATH 111</i>

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge:</p> <ul style="list-style-type: none"> • Remember the most important definitions and concepts of Matrices. • Define determinants. • Define Vectors. • Recall expression of straight lines, planes and quadratic curves. <p>Cognitive Skills:</p> <ul style="list-style-type: none"> • solve a problems on matrices. • Solve a system of linear equations. • Compared between scalar and vector products. • compared between quadratic curves. <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> • Communication skills with others. • Skills of take responsibility and lead the team. • Cooperative work skills. <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> • Develop the skills of observations, conclusion and explanation for the student • develop the student personal to be a Dialogic personality • Urged students to seek knowledge in several ways, the most important electronic tools • Use electronics networks to serve the course • Develop the skills of teamwork and communication
<p>Content</p>	<p>A) Linear Algebra</p> <p>1- Matrices: Basic definition, matrix operations, types of matrices. 2- Determinants: General definition, properties of determinants, determinant calculation. 3- Inverse Matrices 4- Systems of linear equations</p> <p>B) Vector Algebra</p> <p>Vectors: Basic definition, scalar and vector products</p> <p>C) Analytical Geometry</p> <p>1- Straight lines 2- Planes 3- Quadratic curves</p>
<p>Study and examination requirements and forms of examination</p>	<p>Test theoretical first mid test: 20% Test theoretical second mid test: 20% Homework, discussion: 10% Theoretical final test: 50%</p>
<p>Media employed</p>	<p>Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .experiments</p>
<p>Reading list</p>	<p>Lecture notes</p>

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Module level, if applicable	<i>2nd Level</i>
Code, if applicable	<i>PHYS 122</i>
Subtitle, if applicable	
Courses, if applicable	<i>Classical Mechanics (1)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Elham Aldufeery</i>
Lecturer	<i>Elham Aldufeery</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>30 hours of Lectures, 30 hours of exercises,</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 111</i>

<p>Module objectives/intended learning outcomes</p>	<p>Objectives To provide the student with the basic concepts in the Vectors, the laws of motion in one dimension and in two dimensions, Newton's laws and the linear momentum.</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Recognize the importance of classical mechanics in solving the physical problems. • Identifying some of the important aspects of programs to help in solving the different equations of motion. • Identify the scientific basis for a number of physical quantities such as energy, work and and interest in applications. • Identify some of the important aspects of inertia and movement of projectiles and her representation and review their benefits through different applications. <p>Cognitive Skills:</p> <ul style="list-style-type: none"> • Student will have a knowledge in the laws of motion. • Student will know the basic physics quantities. • Student will know some of the physics quantities like work and energy. <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> • Communication skills with others. • Skills of take responsibility and lead the team. • Cooperative work skills. <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> • Develop the skills of observations, conclusion and explanation for the student • develop the student personal to be a Dialogic personality • Urged students to seek knowledge in several ways, the most important electronic tools • Use electronics networks to serve the course • Develop the skills of teamwork and communication
<p>Content</p>	<ol style="list-style-type: none"> 1. Vectors 2. Motion in one dimension 3. Motion in two dimensions 4. The law of motion (Newton's law) 5. Work 6. Kinetic and potential energy 7. Conservation of total energy law 8. linear momentum 9. Elastic and inelastic collisions 10. The center of mass law
<p>Study and examination requirements and forms of examination</p>	<p>Test theoretical first mid test: 20%</p> <p>Test theoretical second mid test: 20%</p> <p>Homework, discussion: 10%</p> <p>Theoretical final test: 50%</p>
<p>Media employed</p>	<p>Data Show, Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments.</p>

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Reading list	<ul style="list-style-type: none"> • <i>Physics for Scientists and Engineers, Serway and Jewett.</i> • <i>Lecture notes.</i>
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Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>2nd Level</i>
Code, if applicable	<i>PHYS 124</i>
Subtitle, if applicable	
Courses, if applicable	<i>Optics</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Sarah Alfahd</i>
Lecturer	<i>Sarah Alfahd</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>45 hours of Lectures</i>
Workload	<i>126</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 111</i>

<p>Module objectives/intended learning outcomes</p>	<p>objectives</p> <ul style="list-style-type: none">• <i>The main goal of this course is to use the scientific methods to understand the individual points of the course and its relation with the applied technology surrounding him.</i> <p>Knowledge:</p> <ul style="list-style-type: none">• <i>Description of the knowledge to be acquired</i>• <i>Learning basic fundamentals in physical optics.</i>• <i>Understanding the physics of wave motion, superposition of waves, interference, diffraction, and polarization</i>• <i>Improving logical thinking.</i>• <i>To use high mathematical formulation to describe the physical principle of different physical phenomena</i> <p>Cognitive Skills:</p> <ul style="list-style-type: none">• <i>How to use physical laws and principles to understand the subject</i>• <i>How to simplify problems and analyze phenomena</i>• <i>Analyze and explain natural phenomena.</i>• <i>Ability to explain the idea with the student own words.</i>• <i>5.Represent the problems mathematically.</i> <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none">• <i>The student work independently.</i>• <i>The students learn independently and take up responsibility.</i> <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none">• <i>Computation</i>• <i>Problem solving</i>• <i>3. Data analysis and interpretation</i>
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Content	<ol style="list-style-type: none"> 1. <i>Waves theory of light: wave equation, sinusoidal waves, phase velocity, complex representation, and plane waves.</i> 2. <i>Reflection and refraction of light: reflection and refraction laws, refraction by plane-parallel plate, total internal reflection and the critical angle.</i> 3. <i>Geometrical optics: mirrors, lenses, and prisms.</i> 4. <i>Superposition of waves: superposition principle, superposition of waves of the same frequency, standing waves, phase and group velocities, energy and power, random and coherent Sources.</i> 5. <i>Interference: two-beam interference, Young's double-slit experiment, double-slit interference with virtual sources, interference in dielectric films, Newton's Rings.</i> 6. <i>Optical Interferometry: Michelson, Mach-Zehnder, and Fabry-Perot interferometer.</i> 7. <i>Polarization: Linear, circular, and elliptical polarization, production of polarized light, double refraction (birefringence), optical activity, and photo elasticity.</i> 8. <i>Diffraction of light: types of diffraction, Fraunhofer diffraction by single slit, by double slit, and by many slits, rectangular and circular apertures, beam spreading, and resolution. Diffraction grating, grating equation, dispersion, types of grating and grating instruments.</i>
Study and examination requirements and forms of examination	<p><i>Attendance and Oral discussions: 10%</i></p> <p><i>Quiz: 10%</i></p> <p><i>Mid-term exam: 20%</i></p> <p><i>Final exam: 60%</i></p>
Media employed	<p><i>Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .experiments</i></p>
Reading list	<p><i>Introduction to Optics, by Frank J. Pedrotti, Leno M, Leno S. Pedrotti, 3rd ed. 2006, Publisher: Benjamin Cummings.</i></p> <p><i>Optics by Eugene Hecht, 4th ed. 2002, Publisher: Addison Wesley.</i></p>

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Module designation	PHYSICS
Module level, if applicable	2nd Level
Code, if applicable	PHYS 126
Subtitle, if applicable	
Courses, if applicable	<i>Optics Lab.</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Sarah Alfahd</i>
Lecturer	<i>Asma Alaowis</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>30 hours of laboratory</i>
Workload	<i>97</i>
Credit points	<i>NCAAA (1) / ECTS(2)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 111</i>
Module objectives/intended learning outcomes	<i>Develop the practical skills of students in optics.</i>
Content	<i>Experimental in optics.</i>
Study and examination requirements and forms of examination	<i>Attendance and Oral discussions: 10%</i> <i>Quiz: 10%</i> <i>Mid-term exam: 20%</i> <i>Final exam: 60%</i>
Media employed	<i>Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .experiments</i>
Reading list	

Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>3rd Level</i>
Code, if applicable	<i>PHYS 212</i>
Subtitle, if applicable	
Courses, if applicable	<i>Mathematical Physics (2)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Fatemah Alzahra M. Hassan</i>
Lecturer	<i>Nagwa I. Ibrahim</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>30 hours of Lectures, 15 hours of exercises</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 121</i>

<p>Module objectives/intended learning outcomes</p>	<p>Objectives</p> <ol style="list-style-type: none"> 1. Have a good basic knowledge of structures and functional aspects of complex variables. 2. Apply knowledge complex functions in other branches of physics. 3. An introduction to algebra of sequences and series <p>Knowledge:</p> <ul style="list-style-type: none"> • Remember the most important definitions and concepts of compound numbers. • Define sequences and series. • Recall expression of De-Moivre theory. • Know the concepts of complex functions and their properties. <p>Cognitive Skills:</p> <ul style="list-style-type: none"> • solve a problems on complex number(s addition – subtraction- multiplications). • Differentiate and integrate the complex functions. • compared between sequences and series. • classify several types on sequences and series. <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> • Engage in teamwork and manage time effectively. • Respect community ethics traditions and moral values. • Identify his/her rights and responsibilities as a member of a research / teaching team and as a member of the scientific community at large. <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> • Use information, communication technology and numerical technology effectively. • Engage work in a teamwork and effective communications.
<p>Content</p>	<ol style="list-style-type: none"> 1. Introduction to complex number(s addition – subtraction- multiplications). 2. De-Moivre Theory – Roots of complex numbers. 3. Complex functions, complex variables, differentiation of complex functions – Cauchy Riemann relations. 4. integral of complex functions. 5. useful physical applications 6. sequences and its applications 7. series and its applications
<p>Study and examination requirements and forms of examination</p>	<p>Test theoretical first mid test: 20%</p> <p>Homework, Quizzes, Discussions, Team Group.: 20%</p> <p>Final practical test: 20%</p> <p>Theoretical final test: 40%</p>
<p>Media employed</p>	

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Reading list	<i>Lecture notes prepared by academic staff member. Anton, Calculus. 6th edition, Wiley(2006). Smith Minton, Calculus, early transcendental functions, McGraw-Hill int</i>
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Module designation	PHYSICS
Module level, if applicable	3rd Level
Code, if applicable	PHYS 213
Subtitle, if applicable	
Courses, if applicable	<i>General Physics (3)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Sanaa M. Barakat</i>
Lecturer	<i>Sanaa M. Barakat</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>30 hours of Lectures, 15 hours of laboratory</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 123</i>

<p>Module objectives/intended learning outcomes</p>	<p>Objectives</p> <p>To know about the properties of temperature, heat, fluids and sound and its applications.</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • <i>Understanding and Knowing about the properties of temperature, heat, fluids and sound and its applications.</i> <p>Cognitive Skills:</p> <ul style="list-style-type: none"> • <i>Accessing Information Skill</i> • <i>Note Taking Skill</i> • <i>Drawing Conclusion Skill</i> • <i>The skill of determining cause-effect relationship</i> • <i>Classifying skill</i> • <i>Developing concepts skill</i> • <i>The skill of generating and testing hypotheses</i> • <i>Comparing and contrasting skill</i> • <i>Managing attention skill</i> • <i>Problem-solving skill</i> • <i>Questioning skill.</i> <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> • <i>Skill to take responsibility</i> • <i>Effective communication skills</i> • <i>collective decision making Skill</i> • <i>The skill of teamwork and participation in scientific communities</i> • <i>Leadership skill or skill to work within the group to get the Desired result</i> • <i>The skill of time management and organization</i> • <i>collaborative work Skill</i> <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> • <i>The use of technology in communication and scientific research.</i> • <i>the use of software and computers to solve problems in the physical and numerical difficulties. .</i> • <i>-the use of technology in teaching and learning.</i>
<p>Content</p>	<ol style="list-style-type: none"> 1. <i>Fundamentals of temperature and heat</i> 2. <i>Thermal properties and heat transfer</i> 3. <i>Fluid mechanics: Elasticity, density, pressure</i> 4. <i>Sound</i>
<p>Study and examination requirements and forms of examination</p>	<p><i>Attendance and Oral discussions: 10%</i></p> <p><i>Quiz: 10%</i></p> <p><i>Mid-term exam : 20%</i></p> <p><i>Practical exam: 20%</i></p> <p><i>Final exam: 20%</i></p>

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Media employed	Data Show,.Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments
Reading list	<i>General Physics, By Wishaa' Khalil, Maarooof Alhaaj and Riyadh Albeetar</i>

Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>3rd Level</i>
Code, if applicable	<i>PHYS 214</i>
Subtitle, if applicable	
Courses, if applicable	<i>Thermodynamics</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Sarah Alfahd</i>
Lecturer	<i>Emad M. Alhami</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>30 hours of Lectures, 15 hours of exercises.</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 123</i>

<p>Module objectives/intended learning outcomes</p>	<p>objectives</p> <p><i>The study thermodynamics has played a major role in the development of physics and in the development of our understanding of the structures of matter as it is encountered in everyday life. The course outline as:</i></p> <ol style="list-style-type: none"><i>1. System definition with thermodynamics properties</i><i>2. Heat transfer in thermodynamics systems</i><i>3. Pure substance properties</i><i>4. Thermodynamics cycles</i> <p>Knowledge:</p> <ul style="list-style-type: none"><i>• Learning about Systems definition with thermodynamics properties</i><i>• Learning about Heat transfer in thermodynamics systems</i><i>• Learning about Pure substance properties</i><i>• Thermodynamics cycles</i><i>• Learning about thermodynamics laws with its applications</i> <p>Cognitive Skills:</p> <ul style="list-style-type: none"><i>• Collect general information to the related topics.</i><i>• Use the mathematical equations and related work to be use for the universe understanding.</i><i>• Apply the gained mathematical and experimental knowledge in any physical related topic.</i> <p>Interpersonal Skills & Responsibility</p> <ul style="list-style-type: none"><i>• Work in a group and learn time management.</i><i>• Learn how to search for information through library and internet</i><i>• Present a short report in a written form and orally using appropriate scientific language.</i> <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"><i>• Communicate with teacher, ask questions, solve problems, and use computers.</i><i>• Illustrate deal with confidence with differential equations, integrations, and differentials.</i><i>• Operate questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended</i><i>• Students use information technology in the classroom</i>
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Content	<ol style="list-style-type: none"> 1. <i>Thermodynamic units</i> 2. <i>Kinetic Theory of Gases</i> 3. <i>Zeroth Law of Thermodynamics</i> 4. <i>First Law of Thermodynamics</i> 5. <i>Transformations at Constant Volume & Pressure, Internal Energy Function, Thermal Work</i> 6. <i>Reversible Processes & Irreversible Processes</i> 7. <i>Applications</i> 8. <i>Ideal & Real Gases, Carnot Cycle, Second Law of Thermodynamics</i> 9. <i>The Entropy and its applications in Different Thermal Systems</i> 10. <i>Third Law of Thermodynamics</i>
Study and examination requirements and forms of examination	<p><i>Midterm Exams: 40%</i></p> <p><i>Homework, Quizzes, Discussions, Team Group, Projects,: 20%</i></p> <p><i>Final Exam: 40%</i></p>
Media employed	<i>Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .experiments</i>
Reading list	<i>Thermodynamics, Philip S. Schmidt, Ofodike A. Ezekoye, John R. Howell and Derek K. Baker.</i>

Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>3rd Level</i>
Code, if applicable	<i>PHYS 122</i>
Subtitle, if applicable	
Courses, if applicable	<i>Classical Mechanics (2)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Rasha A. Taha</i>
Lecturer	<i>Rasha A. Taha</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>30 hours of Lectures, 15 hours of exercises.</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>

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Requirements according to the examination regulations	
Recommended prerequisites	
Module objectives/intended learning outcomes	<p>Knowledge:</p> <ol style="list-style-type: none"> 1. Remember the most important definitions and concepts of mathematical calculations that used in classical mechanics 2 course 2. Recognize the basics of the central force, circular motion, center of mass, and moment of inertia. <p>Cognitive Skills:</p> <ol style="list-style-type: none"> 1. derivative the relations between coordinates and 2. convert between them. 3. Using equation of motion to determine circle motion 4. Using equation of motion to determine central force law 5. Develop lines of argument and appropriate judgments in accordance with handling classical mechanics 6. compared between Newton, Lagrange, and Hamilton mechanics <p>Interpersonal Skills & Responsibility:</p> <ol style="list-style-type: none"> 1. Work in a group and learn time management. 2. Learn how to search for information through library and internet 3. Present a short report in a written form and orally using appropriate scientific language <p>Communication, Information Technology, Numerical:</p> <ol style="list-style-type: none"> 1. Communicate with teacher, ask questions, solve problems, and use computers. 2. Illustrate deal with confidence with differential equations, integrations, and differentials. 3. Operate questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended 4. Students use information technology in the classroom
Content	<ol style="list-style-type: none"> 1. Cartesian, cylindrical and spherical coordinates. 2. center of mass & moment of inertia 3. moment of inertia for some shape theories 4. central forces , central orbits motion and Kepler's laws 5. circular motion 6. variation calculus 7. Lagrange mechanics 8. Hamilton mechanics
Study and examination requirements and forms of examination	<p>Theoretical Midterm Exam: 20%</p> <p>Homework, Quizzes, Discussions, Team Group, Projects & Lab: 20%</p> <p>Practical final exam: 20%</p> <p>Theoretical final exam: 40%</p>

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Media employed	Data Show, Smart Board, Blended, - e-learning(D2L).WhatsApp group, White Board .experiments
Reading list	<i>Fundamentals of physics , Halliday et al</i> <i>Stephen T. Thornton , and Jerry B. Marion, "Classical Dynamics of Particles and Systems " , 2004 (Fifth Edition), ISBN:0-534-40896-6, THOMSON</i>

Module designation	PHYSICS
Module level, if applicable	4th level
Code, if applicable	PHYS 221
Subtitle, if applicable	
Courses, if applicable	<i>Mathematical Physics (3)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Fatemah Alzahra M. Hassan</i>
Lecturer	<i>Fatemah Alzahra M. Hassan</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course.</i>
Type of teaching, contact hours	<i>30 hours of Lectures, 15 hours of exercises.</i>
Workload	<i>150</i>
Credit points	<i>NCAAA (3) / ECTS(5)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 212</i>

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge:</p> <ul style="list-style-type: none"> • Remember the most important definitions and concepts of special function and differential equation. • know several applications in physics that using DE. <p>Cognitive Skills:</p> <ul style="list-style-type: none"> • Solve a problems by using DE. • Using DE in physical applications. • Distinguishable between special function. • Solve DE by using Ferbinous Method. <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> • Engage in teamwork and manage time effectively • Respect community ethics traditions and moral values • Identify his/her rights and responsibilities as a member of a research / teaching team and as a member of the scientific community at large. <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> • Use information, communication technology and numerical technology effectively. • Engage work in a teamwork and effective communications.
<p>Content</p>	<ol style="list-style-type: none"> 1. classification of Differential Equations(DE). 2. solution of Differential Equations(DE) by using several methods. 3. physical applications. 4. introduction to special functions. 5. Gamma and Beta functions and its properties. 6. Legendre function. 7. Revision
<p>Study and examination requirements and forms of examination</p>	<p>Test theoretical first mid test: 20%</p> <p>Homework, Quizzes, Discussions, Team Group.: 20%</p> <p>Final practical test: 20%</p> <p>Theoretical final test: 40%</p>
<p>Media employed</p>	
<p>Reading list</p>	<p>Lecture notes prepared by academic staff member .</p> <p>Dr. R. Ibrahim Elkhatib, " introduction to differential equations", Dar El Massira, 2012.</p> <p>Anton, Calculus. 6th edition, Wiley(2006).</p> <p>Smith Minton, Calculus, early transcendental functions, McGraw-Hill int</p>

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Module designation	<i>PHYSICS</i>
Module level, if applicable	<i>4th Level</i>
Code, if applicable	<i>PHYS 222</i>
Subtitle, if applicable	
Courses, if applicable	<i>Electricity and Magnetism (1)</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Emad M. Alhami</i>
Lecturer	<i>Emad M. Alhami</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>45 hours of Lectures, 15 hours of laboratory</i>
Workload	<i>184</i>
Credit points	<i>NCAAA (4) / ECTS(7)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 213</i>

Module objectives/intended learning outcomes	Objectives:
	1. To be known about electrical charge, force, field, voltage, capacity, current, simple and complicated circuits.
	Knowledge
	Student should define the electrical charge, force, field, voltage, capacity, current, simple and complicated circuits.
	Cognitive Skills
	Accessing Information Skill Note Taking Skill Drawing Conclusion Skill The skill of determining cause-effect relationship Classifying skill Developing concepts skill The skill of generating and testing hypotheses Comparing and contrasting skill Managing attention skill Problem-solving skill Questioning skill.
	Interpersonal Skills & Responsibility
Skill to take responsibility - Effective communication skills - collective decision making Skill - The skill of teamwork and participation in scientific communities - Leadership skill or skill to work within the group to get the Desired result - The skill of time management and organization - collaborative work Skill	
Communication, Information Technology, Numerical	
-The use of technology in communication and scientific research. -the use of software and computers to solve problems in the physical and numerical difficulties. . - the use of technology in teaching and learning.	

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Content	<ul style="list-style-type: none"> • Coulomb's law, electrical field, Gauss's law and applications • Electrical voltage, relation between voltage and electrical field • Charged particle moving inside an electrical field • Capacity and capacitors • Electrical current, Ohm's law • resistors • Energy, power and the electromotive force • Kirchhoff's laws • Charging and discharging and special circuits
Study and examination requirements and forms of examination	<p><i>Mid-term test: 20%</i></p> <p><i>Quiz, attendance, Home work: 20%</i></p> <p><i>Practical final test: 20%</i></p> <p><i>Theoretical final test: 40%</i></p>
Media employed	Data Show, Smart Board, Blended, - e-learning(D2L).WhatsApp group, White Board .experiments
Reading list	1- "Electricity and Magnetism", Alnaby H Ibrahim, 5th Edition

Module designation	PHYSICS
Module level, if applicable	4th Level
Code, if applicable	PHYS 223
Subtitle, if applicable	
Courses, if applicable	<i>Wave Motion and Vibrations</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Elham Aldufeery</i>
Lecturer	<i>Elham Aldufeery</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>

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Type of teaching, contact hours	30 hours of Lectures, 15 hours of exercises
Workload	150
Credit points	NCAAA (3) / ECTS(5)
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	PHYS 124- PHYS 123.
Module objectives/intended learning outcomes	<p>objectives</p> <ul style="list-style-type: none"> To provide the students with the basic concepts in some of mechanical Phenomena like Vibrations, simple harmonic oscillator and wave motion. <p>Knowledge:</p> <ul style="list-style-type: none"> Recognize the importance of wave motion and vibration. Identifying some of the important aspects of wave motion and some examples. Identify the type of waves type. Identify some of mathematical proof in achieve the laws. <p>Cognitive Skills:</p> <ul style="list-style-type: none"> Student will have a knowledge in the laws of wave motion Student will know the basic physics quantities Student will know some of the physics quantities like work and energy <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> Communication skills with others Skills of take responsibility and lead the team Cooperative work skills <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> Develop the skills of observations, conclusion and explanation for the student develop the student personal to be a Dialogic personality Urged students to seek knowledge in several ways, the most important electronic tools Use electronics networks to serve the course Develop the skills of teamwork and communication

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Content	<ol style="list-style-type: none"> 1. Introduction in Periodic motion, simple Harmonic motion and examples of simple Harmonic motion 2. Simple Harmonic motion Energy and simple pendulum 3. Damped oscillations, Light damped, severe damped, critical, Forced oscillations 4. Wave motion: Types of waves, mechanical waves, electromagnetic waves, moving wave model 5. General equation to describe waves, velocity of wave Spread in rods and gases 6. The reflection of wave, wave superposition principle 7. Waves interference 8. Sound waves: types according to frequency, speed of sounds waves in medium, sound levels in decibel 9. Resonance in air Column 10. Doppler effect and shock waves 11. Light waves, Hingis theory, Diffraction and light wave theory, Diffraction of x-ray, waves in 4 dimension
Study and examination requirements and forms of examination	<p>Test theoretical first mid test: 20%</p> <p>Test theoretical second mid test: 20%</p> <p>Homework, discussion: 10%</p> <p>Theoretical final test: 50%</p>
Media employed	Data Show, Smart Board, Blended, - e-learning(D2L).WhatsApp group, White Board .experiments
Reading list	<p>Lecture notes.</p> <p>Physics for Scientists and Engineers, Serway and Jewett.</p>

Module designation	PHYSICS
Module level, if applicable	4th Level
Code, if applicable	PHYS 224
Subtitle, if applicable	
Courses, if applicable	Modern Physics
Semester(s) in which the module is taught	1 st & 2 nd Semester
Person responsible for the module	Bodoor Altheeb
Lecturer	Nagwa I. Ibrahim

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Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course</i>
Type of teaching, contact hours	<i>45 hours of Lectures, 15 hours of laboratory</i>
Workload	<i>184</i>
Credit points	<i>NCAAA (4) / ECTS(7)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS 123</i>
Module objectives/intended learning outcomes	<p>objectives</p> <ul style="list-style-type: none"> • <i>Develop student knowledge about Newton relativity - Galileo relativity - Einstein relativity - the experience of Michelson and Morley - photoelectric effect - the phenomenon of Kempton - black body radiation - Planck model of black body radiation interaction of radiation with the article - the interaction of heavy charged particles - the interaction of light charged particles.</i> <p>Knowledge:</p> <ul style="list-style-type: none"> • <i>Recognize the importance of modern physics.</i> • <i>Identify some of the important aspects and applications of quantum physics.</i> • <i>Identify the theoretical foundation The definition of modern physics.</i> • <i>Understand the theory of relativity.</i> • <i>Identify Haw was black body radiation. for Theoretical Physics.</i> <p>Cognitive Skills:</p> <ul style="list-style-type: none"> • <i>The student learns to what modern physics,</i> • <i>The student explains that the theory of relativity</i> • <i>To know the importance of modern physics in the development of modern scientific</i> <p>Interpersonal Skills & Responsibility:</p> <ul style="list-style-type: none"> • <i>Division students to groups to conduct joint research group</i> • <i>Skills take responsibility and lead the team</i> <p>Communication, Information Technology, Numerical:</p> <ul style="list-style-type: none"> • <i>Ability to use the World Wide Web in search of the latest findings of modern science</i> • <i>Ability to use computers in research writing and presentation using power point</i> • <i>use the computers in the provision of research and scientific reports required</i> • <i>Use the modern techniques in scientific research</i> • <i>The ability to analyze research information required</i>

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Content	<ol style="list-style-type: none"> 1. <i>The emergence of science relative.</i> 2. <i>The basic concepts of relativity.</i> 3. <i>Relative Newton and exercises.</i> 4. <i>Galileo relativity and exercises.</i> 5. <i>A complete study of the theory of special relativity.</i> 6. <i>Lorentz transformations of time and distance.</i> 7. <i>Lorentz transformations of the speed and amount of traffic.</i> 8. <i>Some applications and exercises.</i> 9. <i>Entrance of quantum mechanics:</i> 10. <i>Black body radiation.</i> 11. <i>Property duplication of waves and particles and exercises.</i> 12. <i>Atomic structure.</i>
Study and examination requirements and forms of examination	<p><i>Mid-term test: 20%</i></p> <p><i>Quiz, attendance, Home work: 20%</i></p> <p><i>Practical final test: 20%</i></p> <p><i>Theoretical final test: 40%</i></p>
Media employed	Data Show, Smart Board, Blended, - e-learning(D2L).WhatsApp group, White Board .experiments
Reading list	<p><i>Lecture notes</i></p> <p><i>Introduction to Modern Physics: Ibrahim Fakhry</i></p>

Module designation	Physics
Module level, if applicable	5th
Code, if applicable	PHYS. 313
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	<i>Electronics-1</i>
Semester(s) in which the module is taught	<i>1ST & 2ND Semester</i>
Person responsible for the module	<i>Dr. Sana .M. Barakat</i>
Lecturer	<i>Dr. Sana .M. Barakat</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45H, laboratory session 15H,.) *65</i>
Workload	<i>176</i>
Credit points	<i>(2 Theoretical + 1 Experimental)CH /5 ECTs</i>

Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	PHYS222
Module objectives/intended learning outcomes	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Understand the fundamentals of electronics. 2. To do some applications that depends on the basic principles of electronics. 3. To encourage the students to develop these applications <p>Knowledge</p> <ul style="list-style-type: none"> To recognize the importance of the electronics To identify some properties of some electronic devices like diodes and transistors To show the applications of the electronic devices <p>Cognitive Skills</p> <ul style="list-style-type: none"> Collect general information to the related topics. Use the mathematical equations and related work to be use for the universe understanding. Apply the gained mathematical and experimental knowledge in any physical related topic. <p>Interpersonal Skills & Responsibility</p> <ul style="list-style-type: none"> Work in a group and learn time management. Learn how to search for information through library and internet Present a short report in a written form and orally using appropriate scientific language <p>Communication, Information Technology, Numerical</p> <ul style="list-style-type: none"> Communicate with teacher, ask questions, solve problems, and use computers. Illustrate deal with confidence with differential equations, integrations, and differentials.

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	Operate questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended		
	Students use information technology in the classroom		
Content			
List of Topics	No. Of Weeks	Contact Hours	
Energy levels of electrons	1	2	
Bands theory	1	2	
Pure (and non pure) semiconductors	1	2	
Charge carriers: electrons and holes	1	2	
diode	2	4	
Applications of diode	1	2	
Types of diodes	1	2	
Bipolar junction transistor	2	4	
Applications of PJT	2	4	
Field-effect transistor (FET)	1	2	
Types of FET	1	2	
Signal amplifiers	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40
Media employed	Data Show,.Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments		
Reading list	ELECTRONIC DEVICES, second edition, by THOMAS FLOYD		

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Module designation	Physics
Module level, if applicable	5th
Code, if applicable	PHYS 314
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Electrodynamics
Semester(s) in which the module is taught	1 ST & 2 ND Semester
Person responsible for the module	Dr. Ismat Ali
Lecturer	Dr. Ismat Ali
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics study plan</i>
Type of teaching, contact hours	<i>Contact hours (lecture 60H, exercise 45H, laboratory session 15H,.) and private study, including examination preparation, specified in hours,¹ and in total.</i>
Workload	210
Credit points	4CH / 7 ECTs
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS121</i>
Module objectives/intended learning outcomes	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Understand the basic concepts of classical electrodynamics, e.g., electromagnetic waves and its propagation in different media and Maxwell relations. 2. Acquire the necessary skills (e.g mathematical and numerical skills) to solve electrodynamics problems and gain deeper understanding of the concepts <p>Knowledge</p> <p>Remember the most important definitions and concepts of mathematical calculations that used in electrodynamics course</p>

	Cognitive Skills	
	1.derivative Poisson and Laplace equations fromGaussian law	
	2.Using Maxwell equations in determine the speed of light	
	3.Develop lines of argument and appropriate judgments in accordance with handling electrodynamics theories	
	4.Manipulate problems of electromagnetic data	
	Interpersonal Skills & Responsibility	
	1-The student work independently.	
	2. The students learn independently and take up responsibility.	
	Communication, Information Technology, Numerical	
	1. Computation	
	2. Problem solving	
	3. Data analysis and interpretation	

Content

List of Topics	No. Of Weeks	Contact Hours
Vectors , scalar product and dot product	2.	6.
-Divergence- gradient- curle in Cartesian,	.2.	6.
-Derivative Poisson and Laplace equations in cylindrical and spherical coordinates.	2	.6.
-displacement current by Maxwell theory	2.	6.
-derivative Maxwell's equation in differential form.	2.	6.
derivative Maxwell's equation in integral form..	2.	6.
-determination the speed of light by using wave equation with Maxwell's equation..	2	6
Revesion	1	3.

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Tutorials	No. of Weeks	Contact Hours	
Problems Vectors , scalar product and dot product	2	6	
Problems Divergence- gradient- curle in Cartesian,	2	6	
solve a problems on Poisson and Laplace equations	2	6	
solve a problems on Maxwell's equation in differential form	2	6	
solve a problems on Maxwell's equation in integral form	2	6	
determination the speed of light by using wave equation with Maxwell's	2	6	
Revision	3	9	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Attendance and Oral discussions	From 2 ^{ed}	10%
	Quiz	4 th	10%
	Mid term exam	8 th	20%
	Final exam	16 th	60%
Media employed	Data Show, .Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments		
Reading list	1- Foundations of Electromagnetic Theory; John R. Reitz, Frederick J. Milford, and Robert W. Christy, Addison-Wesley Publishing Company, Inc., 3rd Edition, 1980		

Module Handbook of B.Ed. in Physics Program

Module designation	Physics
Module level, if applicable	5th
Code, if applicable	PHYS. 311
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Quantum Mechanics (1)
Semester(s) in which the module is taught	1 ST & 2 ND Semester
Person responsible for the module	<i>D r. Nagwa Ibrahim</i>
Lecturer	<i>D r. Nagwa Ibrahim</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45H, exercise45H,.) and private study, including examination preparation, specified in hours,² and in total.</i>
Workload	<i>144</i>
Credit points	<i>3CH /5 ECTs</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>PHYS224</i>
Module objectives/intended learning outcomes	<p>Objectives:</p> <p>Introduce students to: the principles of quantum mechanics, behavior waveform and beams of particles and interpretation of probabilistic function wave and equation Schrödinger equation, equation Hydrogen in one dimension, effects in quantum mechanics, the theory of angular momentum, the equation Hodnger of a particle in three dimensions and the hydrogen atom, determined angular momentum , perturbation theory of independent time</p> <p>Knowledge</p> <p>Recognize the importance of modern physics.</p>

	Identify some of the important aspects and applications of quantum physics.
	Identify the theoretical foundation for Theoretical Physics.
	Cognitive Skills
	The student learns the principles of quantum mechanics,
	The student should be able to solve the Schrodinger equations
	To know the importance of modern physics in the development of modern scientific
	Interpersonal Skills & Responsibility
	Division students to groups to conduct joint research group
	Skills take responsibility and lead the team
	Communication, Information Technology, Numerical
	Ability to use the World Wide Web in search of the latest findings of modern science
	- Ability to use computers in research writing and presentation using power point
	use - The computers in the provision of research and scientific reports required
	- use the modern techniques in scientific research
	- The ability to analyze research information required

Content

List of Topics	No. Of Weeks	Contact Hours
The principles of quantum mechanics,	1	3
Follow the principles of quantum mechanics	1	3
Waveform behavior	1	3
The beams of the particles and the probabilistic interpretation of the wave function	1	3

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Schrödinger equation	1	3	
Hydrogen equation in one dimension	1	3	
Theory of angular momentum	1	3	
Effects in quantum mechanics,	1	3	
Hydrogen equation for a particle in three dimensions	1	3	
Hydrogen equation independent of time	1	3	
Perturbation theory	1	3	
Angular momentum and spin	1	3	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	40
	Final Theoretical Exam	16	40
Media employed	Data Show, Smart Board, Blended, - e-learning(D2L).WhatsApp group, White Board .experiments		
Reading list	.Quantum Physics, By: Stephen Gasiorowicz, 3rd edition, Wiley, 2003 ISBN:978-471-05700 . <i>introduction to Quantum Mechanics, David J. Griffiths (2nd Ed. 2004)</i> .. .		

Module Handbook of B.Ed. in Physics Program

Module designation	<i>Physics</i>						
Module level, if applicable	5th						
Code, if applicable	PHYS. 312						
Subtitle, if applicable	<i>Not applicable</i>						
Courses, if applicable	Electromagnetism-2						
Semester(s) in which the module is taught	1 ST & 2 ND Semester						
Person responsible for the module	Dr. Isamt Ali						
Lecturer	Dr. Isamt Ali						
Language	<i>Arabic</i>						
Relation to curriculum	<i>compulsory in B .Ed Physics study plan</i>						
Type of teaching, contact hours	<i>Contact hours (lecture 60H, exercise45H, laboratory session15H,.) and private study, including examination preparation, specified in hours,³ and in total.</i>						
Workload	210						
Credit points	4CH /7 ECTs						
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.						
Recommended prerequisites	PHYS222						
Module objectives/intended learning outcomes	<p>Objectives:</p> <table border="1"> <tr> <td>Understand the fundamentals of electromagnetism.</td> </tr> <tr> <td>2. To do some applications that depends on the basic principles of electromagnetism.</td> </tr> <tr> <td>3. To encourage the students to develop these applications</td> </tr> </table> <p>Knowledge</p> <table border="1"> <tr> <td>To recognize the importance of the electromagnetism</td> </tr> <tr> <td>To identify some properties of the electromagnetism</td> </tr> <tr> <td>To show some applied researches in this field</td> </tr> </table>	Understand the fundamentals of electromagnetism.	2. To do some applications that depends on the basic principles of electromagnetism.	3. To encourage the students to develop these applications	To recognize the importance of the electromagnetism	To identify some properties of the electromagnetism	To show some applied researches in this field
Understand the fundamentals of electromagnetism.							
2. To do some applications that depends on the basic principles of electromagnetism.							
3. To encourage the students to develop these applications							
To recognize the importance of the electromagnetism							
To identify some properties of the electromagnetism							
To show some applied researches in this field							

	Cognitive Skills	
	Collect general information to the related topics.	
	Use the mathematical equations and related work to be use for the universe understanding.	
	Apply the gained mathematical and experimental knowledge in any physical related topic.	
	Interpersonal Skills & Responsibility	
	Work in a group and learn time management.	
	Learn how to search for information through library and internet	
	Present a short report in a written form and orally using appropriate scientific language	
	Communication, Information Technology, Numeric	
	Communicate with teacher, ask questions, solve problems, and us	
	Illustrate deal with confidence with differential equations, integrati	
	Operate questions during the lecture, work in groups, and commur me electronically, and periodically visit the sites I recommended	
Students use information technology in the classroom		

Content

List of Topics	No. Of Weeks	Contact Hours
Magnetic Fields of the Electric Current, Right Hand Rule, Biot-Savart Law	1	3
Ampere's Law, Electric Voltage, Problems	1	3
Applications on the Ampere's Law, Problems	1	3
A Charge Moving in a Magnetic Field, Definition of the Coulomb & Ampere	1	3
Magnetic Force, Torque, Right Hand Rule, Problems	1	3
Faraday's Low, Self & Mutual Inductance	1	3

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Coils Inductance Connecting, Increasing & Decreasing the Current in the Inductance Circuits	1	3
Density of Energy for a Magnetic Field, Electric Driver	1	3
Dynamos, Transformers, Electric Power Transferring	1	3
Magnetization Strength, Magnetic Affects, Cyclic Currents	1	3
Paramagnetic Materials, Ferromagnetic Materials, Diamagnetic Materials	1	3
Galvanometer, Magnetic Flux Gauge	1	3
LC-Circuit, Resonance Circuit	1	3
Bridges that can be used in Alternating-Current Circuits	1	3

Experiment Number	Experiment Subject
1	Galvanometer
2	Charge to Mass Ratio
3	Determination of the Self Inductance Coefficient for a Coil
4	Connection of Self Inductance Coils in Series & in Parallel
5	Charging & Discharging of a Capacitor with existing an Inductance Coil
6	Magnetic Retardation Cycle
7	Phase Relations in Alternating-Current Circuits
8	Series & Parallel Resonance Circuits
9	Materials Coefficient
10	Maxwell's Bridge
11	Mutual Inductance Bridge
12	Cyclic Currents and Hall Effect
13	General Revision
14	Final Exam

	Assessment task	Week Due	Proportion of Total Assessment

Module Handbook of B.Ed. in Physics Program

Study and examination requirements and forms of examination	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40
Media employed	Data Show,.Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments		
Reading list	Electromagnetism, by M. H. AL Naby, 5ed, Arabic Nahdah Library, Alqahera, 1989.		

Module designation	PHYSICS
Module level, if applicable	6th
Code, if applicable	PHYS324
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	<i>Electronics-2</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Dr. Sana .M. Barakat</i>
Lecturer	<i>Dr. Sana .M. Barakat</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45, laboratory session30,.)</i> .
Workload	<i>154</i>
Credit points	<i>(2 Theoretical + 1 Experimental)CH /5 ECTs</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.

Recommended prerequisites	PHYS313
Module objectives/intended learning outcomes	<p>Objectives:</p> <p>1. Understand and analyze relatively simple electronic layouts and circuits.</p> <p>2. Design special purpose circuits that meet his requirements in his scientific life</p> <p>3.To encourage the students to develop these applications</p> <p>Knowledge</p> <p>Learning fundamentals in electronics and electronic elements</p> <p>Understanding the physics of electronics and their applications mentioned in the text.</p> <p>Improving logical thinking Improving logical thinking</p> <p>Ability to understand and design simple electronic circuits</p> <p>Ability to explain how things work</p> <p>Cognitive Skills</p> <p>Collect general information to the related topics.</p> <p>Use the mathematical equations and related work to be use for the universe understanding.</p> <p>Apply the gained mathematical and experimental knowledge in any physical related topic.</p> <p>Interpersonal Skills & Responsibility</p> <p>Work in a group and learn time management.</p> <p>Learn how to search for information through library and internet</p> <p>Present a short report in a written form and orally using appropriate scientific language</p> <p>Communication, Information Technology, Numerical</p> <p>The use of technology in communication and scientific research.</p> <p>The use of software and computers to solve problems in the physical and numerical difficulties. .</p> <p>The use of technology in teaching and learning.</p>

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Content			
List of Topics	No. Of Weeks	Contact Hours	
Thyristors: Shockley diod –Diac -, Triac, - operational amplifiers and their types	4	8	
frequency response curve of operational amplifiers	2	4	
Feedback and its types	2	4	
oscillators and their types- Active Filters and their types	2	4	
properties of Filters	2	4	
Integrated circuits	2	4	
revision	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40
Media employed	Data Show,.Smart Board, Blended,- e-learning,White Board .experiments		
Reading list	<p>1-Ben G. Streetman, Solid State Electronic Devices, Prentice – Hall Inc., 1990.</p> <p>2-Sze, S. M., Semiconductor Devices-Physics and Technology, AT& T Bell Laboratories,Murray Hill, New Jersey, John Wiley & Sons, 1985.</p> <p>3-Runyan, W. R., Semiconductor Measurements and Instrumentation, International Students edition,McGraw-Hill,Kogakusha</p>		

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Module designation	PHYSICS
Module level, if applicable	6th
Code, if applicable	PHYS322
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Quantum Mechanics 2
Semester(s) in which the module is taught	1 st & 2 nd Semester
Person responsible for the module	Dr. Rasha Abd Alhai
Lecturer	Dr. Rasha Abd Alhai
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45) and private study, including examination preparation, specified in hours,⁴ and in total.</i>
Workload	112
Credit points	3 CH /5 ECTs
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	PHYS311

Module objectives/intended learning outcomes	Objectives:
	Derivation of mathematical methods, such as semi-classical approximation and variational principle and turbulence theory, in order to obtain approximate solutions of the Schrodinger equation.
	. Definition of spin and the Pauli exclusion principle, and thus explain the mathematical basics of the periodic table of the elements
	quantum theory of the interaction of electromagnetic radiation with the use of temporal turbulence theory
	The use of dispersion theory to achieve the interaction between the particles, and thus the probability or the cross

	<p>section of a dispersion and can be inferred from the quantum theory calculated.</p> <p>Knowledge</p> <p>recognizes the angular momentum and operators</p> <p>Recognizes the approximate methods of quantum mechanics to solve problem</p> <p>Remembers the laws and principles of approximate methods</p> <p>Known scattering theory and its application</p> <p>Cognitive Skills</p> <p>analyzes the physical phenomena in the light of what he learned from the foundations of physical and mathematical</p> <p>Data sets of physical issues and then determine the appropriate laws to resolve</p> <p>Distinguish between the various approximate methods</p>
	<p>Interpersonal Skills & Responsibility</p> <p>Students salving study</p> <p>work with colleagues in a team spirit</p> <p>able to diction and group discussion</p> <p>Communication, Information Technology, Numerical</p> <p>Locating, evaluating and choosing credible textual and other sources for information</p> <p>Interpreting the social, legal, and ethical uses of information.</p> <p>Researching data and drawing conclusions based on an analysis of that data.</p> <p>Using technologies to communicate, solve problems, and complete tasks.</p>

Content

List of Topics	No. Of Weeks	Contact Hours
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Module Handbook of B.Ed. in Physics Program

Angular momentum and spinning spin: angular momentum vector for a range of particle - matrix representation - self function and values of self-function spin. Pauli exclusion principle periodic table of elements. Spin in an external magnetic field.	3	9	
Approximate methods of quantum mechanics: semi-classical approximation (WKB) and its applications Variational principles in quantum mechanics: Ritz variational principle - limits on the energy levels of quantum systems.	3	9	
Perturbation theory: Rayleigh-Schrodinger independently of time Perturbation theory. Energy levels of disturbances due to external electromagnetic fields - Stark effect on the ground state of the hydrogen atom - Zeeman effect	3	9	
Systems varying with time: the study of time -dependent Schrödinger equation The expected values of the physical quantities - Fermi quantity theory - different representations in quantum mechanics: Schrödinger representation - representation Heisenberg - internal representation of mutual influence - Dirac formats	3	9	
Perturbation theory situations varying with time - absorption and emission - Green function	1	3	
Scattering theory: the definition of the cross-section of the scattering and scattering amplitude Born approximation	2	6	
	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team	14	40

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Study and examination requirements and forms of examination	Group, Projects, & Lab		
	Final Theoretical Exam	16	40
Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments		
Reading list	<p>* Introduction to quantum mechanics, David J. Griffith, Printice Hall, 2004.</p> <p>*"Quantum Mechanics" Volumes 1 & 2, by Claude Cohen-Tannoudji, Bernard Diu, and Franck Laloe (1977 John Wiley & Sons).</p> <p>* Introductory Quantum Mechanics, R.L. Liboff, Addison-Wesley</p> <p>* Principles of quantum mechanics. R. Shankar Quantum physics, Stephen Gasiorwics, John Wiley & Sons, 2003.</p> <p>* Quantum mechanics, L. I. Schiff, Mc Grow Hill, 1986.</p>		

Module designation	PHYSICS
Module level, if applicable	6th
Code, if applicable	PHYS321
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Statistical Physics
Semester(s) in which the module is taught	1 st & 2 nd Semester
Person responsible for the module	<i>Dr. Sana .M. Barakat</i>
Lecturer	<i>Dr. Sana .M. Barakat</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45, exercise30, laboratory session15,.) and private study, including examination preparation, specified in hours,⁵ and in total.</i>
Workload	<i>154</i>
Credit points	<i>3 CH /5 ECTs</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total

	lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.												
Recommended prerequisites	PHYS214												
Module objectives/intended learning outcomes	<p>Objectives:</p> <table border="1"> <tr> <td>1. Understanding of the basic principles of Statistical physics .</td> </tr> <tr> <td>2. Make the connections between classical equilibrium thermodynamics and the basic statistical mechanics, which includes analytical and numerical calculations of Partition Functions, towards solutions of various problems, including the problems about 1) ideal and real gases, 2) simple models of solids, 3) quantum gases, and other thermodynamic systems</td> </tr> <tr> <td>3. Explanation statistical of systems that contains large number of particles</td> </tr> <tr> <td>4. Statistical distribution functions: Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac</td> </tr> </table> <p>Knowledge</p> <table border="1"> <tr> <td>the ability to understand and apply the principles of statistical mechanics on ensembles of molecules</td> </tr> <tr> <td>the ability to understand the association between statistical mechanics and thermodynamics</td> </tr> <tr> <td>deep understanding of how intermolecular interaction affects the properties of matter</td> </tr> <tr> <td>the ability to use statistical mechanical computer programmers to calculate the properties of macroscopic systems</td> </tr> </table> <p>Cognitive Skills</p> <table border="1"> <tr> <td>We will apply the principles of statistics to develop</td> </tr> <tr> <td>(1) the concepts of ensembles and distribution functions;</td> </tr> <tr> <td>(2) statistical mechanical expressions for thermodynamic functions;</td> </tr> <tr> <td>(3) models of polyatomic gases, monatomic crystals, polymers.</td> </tr> </table>	1. Understanding of the basic principles of Statistical physics .	2. Make the connections between classical equilibrium thermodynamics and the basic statistical mechanics, which includes analytical and numerical calculations of Partition Functions, towards solutions of various problems, including the problems about 1) ideal and real gases, 2) simple models of solids, 3) quantum gases, and other thermodynamic systems	3. Explanation statistical of systems that contains large number of particles	4. Statistical distribution functions: Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac	the ability to understand and apply the principles of statistical mechanics on ensembles of molecules	the ability to understand the association between statistical mechanics and thermodynamics	deep understanding of how intermolecular interaction affects the properties of matter	the ability to use statistical mechanical computer programmers to calculate the properties of macroscopic systems	We will apply the principles of statistics to develop	(1) the concepts of ensembles and distribution functions;	(2) statistical mechanical expressions for thermodynamic functions;	(3) models of polyatomic gases, monatomic crystals, polymers.
1. Understanding of the basic principles of Statistical physics .													
2. Make the connections between classical equilibrium thermodynamics and the basic statistical mechanics, which includes analytical and numerical calculations of Partition Functions, towards solutions of various problems, including the problems about 1) ideal and real gases, 2) simple models of solids, 3) quantum gases, and other thermodynamic systems													
3. Explanation statistical of systems that contains large number of particles													
4. Statistical distribution functions: Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac													
the ability to understand and apply the principles of statistical mechanics on ensembles of molecules													
the ability to understand the association between statistical mechanics and thermodynamics													
deep understanding of how intermolecular interaction affects the properties of matter													
the ability to use statistical mechanical computer programmers to calculate the properties of macroscopic systems													
We will apply the principles of statistics to develop													
(1) the concepts of ensembles and distribution functions;													
(2) statistical mechanical expressions for thermodynamic functions;													
(3) models of polyatomic gases, monatomic crystals, polymers.													

	Interpersonal Skills & Responsibility
	Work in a group and learn time management.
	Learn how to search for information through library and internet
	Present a short report in a written form and orally using appropriate scientific language
	Communication, Information Technology, Numerical
	-The use of technology in communication and scientific research.
-the use of software and computers to solve problems in the physical and numerical difficulties. .	
- the use of technology in teaching and learning..	

Content

List of Topics	No. Of Weeks	Contact Hours
1. Basics of probability and statistics: probability distributions, statistical averages, law of large numbers, random walk, examples of various distributions. Thermodynamics entropy, distinguishable and indistinguishable particles, Boltzmann statistics, Maxwell-Boltzmann distribution. Foundations of statistical mechanics. Microstates. Quantum and classical systems.	3	9
2. Partition function of an ideal gas, diatomic gas: vibrational and rotational modes, the total heat capacity of a diatomic gas.	3	9
3. Microcanonical, canonical and grand canonical statistical ensembles.	3	9
4. Fermi-Dirac and Bose-Einstein (calculated by two methods), and applied to free electron theory and Bose-Einstein condensation.	3	9
5. Thermodynamics of radiation, blackbody spectrum, Bose-Einstein gases, Bose-Einstein condensation, liquid helium	3	9

	Assessment task	Week Due	Proportion of Total Assessment
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Study and examination requirements and forms of examination	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	40
	Final Theoretical Exam	16	40
Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments		
Reading list	Mandl, F. statistical physics, 2nd ed. (Wiley, 1988) Reif , F. fundamentals of statistical and thermal physics (McGraw Hill , 1965)		

Module designation	PHYSICS
Module level, if applicable	6th
Code, if applicable	PHYS323
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Solid state -1
Semester(s) in which the module is taught	1 st & 2 nd Semester
Person responsible for the module	Dr. Emad Alhami
Lecturer	Dr. Emad Alhami
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45, laboratory session30,.)</i>
Workload	154
Credit points	(2 Theoretical + 1 Experimental)CH /5 ECTs
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	None

<p>Module objectives/intended learning outcomes</p>	<p>Objectives:</p>
	<p>To be known about solid state crystal growth, solid objects amorphous and Allamthblorh and nanoparticles, interdependence atomic crystal structure and lattice, transactions Millar, constants crystalline defects crystalline, Fourier analysis systems repeatability, dispersion wavelength and lattice inverted, areas Berluan, X-rays and Hyudha, phonons and oscillation crystal,thermal properties of materials, heat capacity, distribution Blanc, density of states, Debye model, the Einstein model, free-electron model (Fermi gas)</p>
	<p>Knowledge</p>
	<p>Understanding and Knowing about solid state crystal growth, solid objects amorphous and nanoparticles, interdependence atomic crystal structure and lattice, transactions Millar, constants crystalline defects crystalline, Fourier analysis systems repeatability, dispersion wavelength and lattice inverted, areas Berluan, X-rays and Hyudha, phonons and oscillation crystal, thermal properties of materials, heat capacity, distribution Blanc, density of states, Debye model, the Einstein model, free-electron model (Fermi gas)</p>
	<p>Cognitive Skills</p>
	<p>Accessing Information Skill,Note Taking Skill Drawing Conclusion Skill,The skill of determining cause-effect relationship,Classifying skill,Developing concepts skill,The skill of generating and testing hypotheses Comparing and contrasting skill,Managing attention skill Problem-solving skill,Questioning skill.</p>
<p>Interpersonal Skills & Responsibility</p>	
<p>Work in a group and learn time management.</p>	
<p>Learn how to search for information through library and internet</p>	
<p>Present a short report in a written form and orally using appropriate scientific language</p>	

	Communication, Information Technology, Numerical
	The use of technology in communication and scientific research.
	-the use of software and computers to solve problems in the physical and numerical difficulties. .
	- the use of technology in teaching and learning..

Content

List of Topics	No. Of Weeks	Contact Hours
Definition solid state crystal growth, solid objects amorphous and nanoparticles.	2	4
interdependence atomic crystal structure and lattice,.	2	4
transactions Millar,	1	2
constants crystalline defects crystalline	2	4
Fourier analysis systems repeatability,.	2	4
dispersion wavelength and lattice inverted, areas Berluan,	2	4
X-rays and Hyudha, phonons and oscillation crystal,thermal properties of materials	1	2
heat capacity, distribution Blanc and density of states	1	2
Debye model, Einstein model and free-electron model (Fermi gas).	2	4

Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40

Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments
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Reading list	<p>1- "An Introduction to Solid States Physics", C. Kittel, 6th Edition, John Wiley & Son Inc (1986).</p> <p>2- "Solid State Physics, Ashcroft & Mermin", 1st Edition, Harcourt Asia Pte Ltd (1976).</p> <p>3- "Introduction to condensed matter physics." Feng Duan & Jin Guojun, (World Scientific, 2005).</p>
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Module designation	PHYSICS
Module level, if applicable	6th
Code, if applicable	PHYS387
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Nanotechnology
Semester(s) in which the module is taught	1 st & 2 nd Semester
Person responsible for the module	<i>Dr. Ismat Ali</i>
Lecturer	<i>Dr. Ismat Ali</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>Elective course in B .Ed Physics plan study</i>
Type of teaching, contact hours	<i>Contact hours (lecture 45, exercise30, laboratory session15,..) and private study, including examination preparation, specified in hours,⁶ and in total.</i>
Workload	<i>80</i>
Credit points	<i>2 CH /3 ECTs</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	None

Module objectives/intended learning outcomes	Objectives:
	1 . Nature, importance, principles of nanotechnology
	2. Properties of nano particles and forms of of nano materials
	3. Microscopes in nanotechnology
	4. Developments of nanotechnology in different science
	Knowledge
	To know the importance of nanotechnology
	To know some applications of nanotechnology
	To know some researches in the fields of nanotechnology
	Cognitive Skills
	Collect general information to the related topics.
	Use the mathematical equations and related work to be use for the universe understanding.
	Apply the gained mathematical and experimental knowledge in any physical related topic.
	Interpersonal Skills & Responsibility
	Work in a group and learn time management.
	Learn how to search for information through library and internet
	Present a short report in a written form and orally using appropriate scientific language
	Communication, Information Technology, Numerical
	Communicate with teacher, ask questions, solve problems, and use computers.
	Illustrate deal with confidence with differential equations, integrations, and differentials.
Operate questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended	
Students use information technology in the classroom	

Module Handbook of B.Ed. in Physics Program

Content			
List of Topics	No. Of Weeks	Contact Hours	
Essential expressions in nanotechnology	1	2	
Important stages in nanotechnology-development	1	2	
Different principles of nanotechnology	1	2	
Properties of material at nano scale	1	2	
Forms of nano materials	1	2	
Problems	1	2	
Mid Exam	1	2	
General importance of nanotechnology	1	2	
Methods to reach the nano volume	1	2	
Basic requirements to construct the material	1	2	
Microscopes in nanotechnology	1	2	
Uses of nanotechnology	1	2	
Creations in nanotechnology	1	2	
Nanotechnology-situation in the world	1	2	
Nanotechnology-situation in Arab countries, i.e.: in KSA	1	2	
Final Exam	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40
Media employed	Data Show, Smart Board, Blended, e-learning, White Board experiments		

Module Handbook of B.Ed. in Physics Program

Reading list	Nanotechnology, 1 st edition, Mohammad Ali Mohammad, 2012.
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Module designation	<i>Physics</i>		
Course level, if applicable	7th level.		
Code, if applicable	PHYS 411.		
Subtitle, if applicable	<i>computational physics1</i>		
Courses, if applicable	-		
Semester(s) in which the module is taught	<i>1st and 2nd semesters.</i>		
Person responsible for the module	<i>Dr. Fatema Alzahraa Mohummad</i>		
Lecturer	<i>Dr. Fatema Alzahraa Mohummad</i>		
Language	<i>Arabic language.</i>		
Relation to curriculum	<i>Compulsory course in B.Ed. in Physics study plan.</i>		
Type of teaching,	No.	Type of Teaching	Contact hours per week.
	1	<i>Lecture</i>	30
	2	<i>practical</i>	15
Workload	<i>129 H in semester.</i>		
Credit points	<i>3 C.H. - 5 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	<i>PHYS 321</i>		

Module objectives/intended learning outcomes	<p>objectives</p> <p>1. Understand the basic concepts of computers science and programmers language e.g., C language, other programming languages and using matlab program.</p> <p>2. Acquire the necessary skills (e.g computational and numerical skills) to solve systems problems and gain deeper understanding of the concepts of physics.</p>
	<p>Knowledge</p> <p>1.1 Remember the most important definitions and concepts of computer hardware and software and basic concepts of programming language.</p> <p>1.2 Recognize the basics of matlab programe</p>
	<p>Cognitive Skills</p> <p>2.1 setup of matlab program in PC. now the content of the subject</p> <p>2.2 Using mathematical operations in matlab.</p> <p>2.3 Compared between software, hardware, programming language, matlab program.</p> <p>2.4 Develop lines of argument and appropriate judgments in accordance with handling computational physics</p>
	<p>Interpersonal Skills & Responsibility</p> <p>3.1 Engage in teamwork and manage time effectively.</p> <p>3.2 Respect community ethics traditions and moral values</p> <p>3.3 Identify his/her rights and responsibilities as a member of a research / teaching team and as a member of the scientific community at large.</p>
	<p>Communication, Information Technology, Numerical</p> <p>4.1 Use information, communication technology and numerical technology effectively. unicationg with peers, lecturers and community, use of the computer and the internet, problem solving.</p> <p>4.2 Engage work in a teamwork and effective communications.</p> <p>4.3 Using computer professionally in programming language.</p>

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Content	<ol style="list-style-type: none"> 1. <i>Introduction to computer science in our life.</i> 2. <i>Introduction to programming languages (matlab program).</i> 3. <i>Installation of matlab program.</i> 4. <i>Introduction to matlab.</i> 5. <i>Using matlab program in mathematical calculations.</i> 6. <i>Instruction of mathematical functions by matlab.</i> 7. <i>application in physics</i> 8. <i>revision</i> 		
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20 %
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20 %
	Final Experimental and Theoretical Exam Exam	16	60 %
Media employed	Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .Matlab program- computers.		
Reading list	<ol style="list-style-type: none"> 1. <i>Lecture notes prepared by academic staff member.</i> 2. <i>Computer Solutions in physics steve vanwyk , world scientific .(2003).</i> 3. <i>An Introduction to Computational Physics, Tao Pang , amzong try prime ISBN-13: 9781840858839, ISBN-10: 0521128749: 2nd ,2006.</i> 4. <i>Computational Physics, Peter Hertel, 2008, Fachbereich Physik 4. University at Osnabruck.</i> 5. <i>David M. Cook, Computation and Problem Solving in Undergraduate Physics (selfpublished).</i> 		

Module designation	PHYSICS		
Module level, if applicable	7 th		
Code, if applicable	PHYS412		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	Solid state -2		
Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	<i>Dr. Fatima AL Zahra M. Hassan</i>		
Lecturer	Dr. Emad Alhami		
Language	<i>Arabic</i>		
Relation to curriculum	<i>compulsory in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	1	<i>Lecture</i>	30
	2	<i>practical</i>	15
Workload	129		
Credit points	(2 Theoretical + 1 Experimental)CH /5 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	PHYS224		
Module objectives/intended learning outcomes	Objectives:		
	Fermi surfaces, the energy levels in one dimension, power strips, calculate the energy gap, the theory of electrical transport, Hall effect, the theory and applications of vectors and streaks in the semiconductor and micro-devices, magnetic materials, superconducting materials, the interaction of radiation with materials		
	Knowledge		
	<ul style="list-style-type: none"> - Definition of Solid State Physics. - The definition of the physical properties of solids. - Definition of Semiconductor. 		

	Cognitive Skills	
	The student recognizes what's the Solid State Physics,	
	That explains the physical properties of solids	
	To know the importance of solid state physics & evolution of modern scientific	
	Interpersonal Skills & Responsibility	
	Division students to groups to conduct joint research group	
	Skills take responsibility and lead the team	
	Communication, Information Technology, Numerical	
	Ability to use the World Wide Web in search of the latest findings of modern science	
	- Ability to use computers in research writing and presentation using power point	
	use - The computers in the provision of research and scientific reports required	
	- use the modern techniques in scientific research	
	- The ability to analyze research information required	

Content

List of Topics	No. Of Weeks	Contact Hours
Energy levels and the density of distribution	1	2
Fermi distribution Drake	1	2
Heat capacity for electrons gas	1	2
Electrical & thermal conductivity in solids & Wiedemann and Franz law	2	4
Electrical conductivity & optical properties in solids	1	2

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Movement in the field of the magnet	1	2	
Band theory - nearly free electron model	1	2	
Conduction by electrons and holes	1	2	
Bloch model & Kronig – Penney model	1	2	
Electrical conductivity of semiconductor	1	2	
Calculate the energy gap of intrinsic semiconductor	1	2	
The mechanism of conduction in semiconductor	1	2	
Relationship conductivity temperature	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40
Media employed	Data Show, Smart Board, Blended, e-learning, White Board, experiments		
Reading list	1- Principle of solid state physics F.Ghalib et al 2- solid state physics A.Hazm et al. 3- solid state physics prof.A.elshazli		

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Module designation	Physics		
Course level, if applicable	7th level.		
Code, if applicable	PHYS 413.		
Subtitle, if applicable	<i>Atomic and Molecular Physics</i>		
Courses, if applicable	-		
Semester(s) in which the module is taught	<i>1st and 2nd semesters.</i>		
Person responsible for the module	<i>Dr. Mohsen B. Shaalan.</i>		
Lecturer	<i>Dr. Mohsen B. Shaalan.</i>		
Language	<i>Arabic language.</i>		
Relation to curriculum	<i>Compulsory course in B.Ed. in Physics study plan.</i>		
Type of teaching,	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	<i>1</i>	<i>Lecture</i>	<i>45</i>
	<i>2</i>	<i>practical</i>	<i>15</i>
Workload	<i>169 H in semester.</i>		
Credit points	<i>4 C.H. - 7 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	<i>PHYS 322</i>		

Module objectives/intended learning outcomes	<p>objectives</p> <p><i>The application of quantum theory to atomic and molecular structure, and the interaction between electromagnetic radiation and atoms and simple molecules.</i></p>
	<p>Knowledge</p> <p>1.3 <i>This is an introductory course, which gives the student a wide and general look at the different aspects of atomic and molecular physics.</i></p> <p>1.4 <i>specially that related to general properties of the atoms</i></p> <p>1.5 <i>Excitation reactions and decay spectra.</i></p> <p>1.6 <i>Atomic models</i></p>
	<p>Cognitive Skills</p> <p>2.5 <i>Know the content of the subject</i></p> <p>2.6 <i>Develop the student's ability to solve and analyse problems related to the course.</i></p> <p>2.7 <i>Develop the student's ability to use physical laws.</i></p> <p>2.8 <i>principles to understand the subject</i></p>
	<p>Interpersonal Skills & Responsibility</p> <p>3.4 <i>Work independently</i></p> <p>3.5 <i>3.2 Work within a group</i></p> <p>3.6 <i>Share research ideas and findings with other</i></p> <p>3.7 <i>Leadership development (managing time, resources and people)</i></p>
	<p>Communication, Information Technology, Numerical</p> <p>4.4 <i>Communicating with peers, lecturers and community, use of the computer and the internet, problem solving.</i></p> <p>4.5 <i>Communicating with lecturers.</i></p> <p>4.6 <i>Communicating with community.</i></p> <p>4.7 <i>Use of the computer and the internet.</i></p> <p>4.8 <i>Problems solving</i></p>

<p>Content</p>	<p>9. Overview of the atomic structure: atomic models, Rutherford atom, Bohr model, Sommerfeld model of the atom, the study of the atomic spectrum, spectral imaging, gentle flame, electric arc spectrum Experimental investigations of discrete levels of atomic energy.</p> <p>10. Pauli exclusion principle, electronic distribution Review the meaning of the quantum numbers, Quantization Rule and magnetic moments</p> <p>11. General rules of selection (double beam), the intensity of spectral lines, the intensity ratios lines available, the rules for the selection, forbidden transfer, problems magnetic Dipole moment, Bohr magneton Quantitative numbers and solving Schrödinger equation Orbital angular momentum and magnetic</p> <p>12. Larmour precession, Zeeman effect, issues Experiment of Stern - Gerlach, problems Combining rule, General considerations for the analysis of atomic spectra, hyperfine structure of hyperbolic atomic spectra, model Vector wrap nuclear. Gentle rotation caused by the rotational motion of the diatomic molecules</p> <p>13. Molecular oscillation spectrum resulting from the vibratory motion of the nuclei of diatomic molecules (infrared spectrum) Spectrum resulting from electronic transitions in diatomic molecules (the visible spectrum + UV spectrum) Physical applications (physical characteristics – ionization Energy- electronic affinity- electronic bonds.</p>		
<p>Study and examination requirements and forms of examination</p>	<p>Assessment task</p>	<p>Week Due</p>	<p>Proportion of Total Assessment</p>
	<p>Midterm Exam</p>	<p>8</p>	<p>20 %</p>
	<p>Homework, Quizzes, Discussions, Team Group, Projects, & Lab</p>	<p>14</p>	<p>20 %</p>
	<p>Final Experimental Exam</p>	<p>15</p>	<p>20 %</p>
	<p>Final Theoretical Exam</p>	<p>16</p>	<p>40 %</p>
<p>Media employed</p>	<p>Data Show,.Smart Board, Blended,- e-learning(D2L).WhatsApp group,White Board .experiments</p>		
<p>Reading list</p>	<p>- Atomic Spectra and Atomic Structure, by G. Herzberg, 1984. - Physics of Atoms and Molecules, by Bransden and Joachain, 1994. - Fundamentals of Modern Physics, by Eisberg, John&Wiley, 1995. 3</p>		

Module Handbook of B.Ed. in Physics Program

Module designation	Physics		
Course level, if applicable	7th level.		
Code, if applicable	PHYS 415.		
Subtitle, if applicable	<i>Nuclear Physics 1</i>		
Courses, if applicable	-		
Semester(s) in which the module is taught	<i>1st and 2nd semesters.</i>		
Person responsible for the module	<i>Dr. Mohsen B. Shaalan.</i>		
Lecturer	<i>Dr. Mohsen B. Shaalan.</i>		
Language	<i>Arabic language.</i>		
Relation to curriculum	<i>Compulsory course in B.Ed. in Physics study plan.</i>		
Type of teaching,	No.	Type of Teaching	Contact hours per week.
	1	<i>Lecture</i>	45
	2	<i>practical</i>	15
Workload	<i>169 H in semester.</i>		
Credit points	<i>4 C.H. - 7 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	<i>PHYS 322</i>		

Module objectives/intended learning outcomes	<p>objectives</p> <ul style="list-style-type: none"> - <i>Introduction to basic nuclear physics.</i> - <i>Develop the student ability to use physical laws and principles.</i> - <i>Work independently and within a group. Use of the internet</i>
	<p>Knowledge</p>
	<p>1.1 <i>This is an introductory course, which gives the student a wide and general look at the different aspects of nuclear physics.</i></p>
	<p>1.2 <i>specially that related to general properties of the atomic nucleus</i></p>
	<p>1.3 <i>Nuclear reactions and nuclear decay.</i></p>
	<p>1.4 <i>Nuclear models</i></p>
	<p>Cognitive Skills</p>
	<p>1.1 <i>Know the content of the subject</i></p>
	<p>1.2 <i>Develop the student's ability to solve and analyse problems related to the course.</i></p>
	<p>1.3 <i>Develop the student's ability to use physical laws.</i></p>
	<p>1.4 <i>principles to understand the subject</i></p>
	<p>Interpersonal Skills & Responsibility</p>
	<p>1.1 <i>Work independently</i></p>
	<p>1.2 <i>3.2 Work within a group</i></p>
	<p>1.3 <i>Share research ideas and findings with other</i></p>
<p>1.4 <i>Leadership development (managing time, resources and people)</i></p>	
<p>Communication, Information Technology, Numerical</p>	
<p>1.1 <i>Communicating with peers, lecturers and community, use of the computer and the internet, problem solving.</i></p>	
<p>1.2 <i>Communicating with lecturers.</i></p>	
<p>1.3 <i>Communicating with community.</i></p>	
<p>1.4 <i>Use of the computer and the internet.</i></p>	
<p>1.5 <i>Problems solving</i></p>	

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Content	<ol style="list-style-type: none"> 1. <i>Nuclear Masses and Stability</i> 2. <i>Radioactive Decay Alpha and Beta</i> 3. <i>Energy in Nuclear Reactions and Radioactive Decay</i> 4. <i>Interaction of Radiation with Matter and Radiation Detection</i> 5. <i>Nuclear Models: Liquid Drop Model and The Shell Model.</i> 		
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20 %
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20 %
	Final Experimental Exam	15	20 %
	Final Theoretical Exam	16	40 %
Media employed	Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .experiments		
Reading list	<ul style="list-style-type: none"> - <i>Kenneth S. Krane, Introductory Nuclear Physics, 1988, John Wiley & Sons</i> - <i>Nuclear Physics by Irving Kaplan, 1979.</i> - <i>Irving Kaplan Nuclear Physics, Addison, Wesley Publ. Comp., 1963.</i> - <i>H.A. Enge, "Introduction to Nuclear Physics" Addison, Wesley Publ. Comp., 1981.</i> 		

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Module designation	Physics		
Course level, if applicable	8th level.		
Code, if applicable	PHYS 421.		
Subtitle, if applicable	<i>computational physics2</i>		
Courses, if applicable	-		
Semester(s) in which the module is taught	<i>1st and 2nd semesters.</i>		
Person responsible for the module	<i>Dr. Fatema Alzahraa Mohummad</i>		
Lecturer	<i>Dr. Fatema Alzahraa Mohummad</i>		
Language	<i>Arabic language.</i>		
Relation to curriculum	<i>Compulsory course in B.Ed. in Physics study plan.</i>		
Type of teaching,	No.	Type of Teaching	Contact hours per week.
	1	<i>Lecture</i>	30
	2	<i>practical</i>	15
Workload	<i>114 H in semester.</i>		
Credit points	<i>3 C.H. - 5 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	<i>PHYS 411</i>		

Module objectives/intended learning outcomes	<p>objectives</p> <p>1. Understand the basic concepts of computers science and programmers language e.g., C language, other programming languages and using Mathematica program.</p> <p>2. Acquire the necessary skills (e.g computational and numerical skills) to solve systems problems and gain deeper understanding of the concepts of physics with simulations.</p>
	<p>Knowledge</p>
	<p>1.1 Recognize the basics of Mathematica program</p>
	<p>1.2 Recognize the basics of modelling and simulation.</p>
	<p>1.3 Rename the most using of computer program in physics.</p>
	<p>Cognitive Skills</p>
	<p>1.1 setup of Mathematica program in PC.</p>
	<p>1.2 Using mathematical operations in Mathematica program.</p>
	<p>1.3 Compared between programming language, between matlab and Mathematica program..</p>
	<p>1.4 Develop lines of argument and appropriate judgments in accordance with handling computational physics</p>
	<p>1.5 Using simulations in physics</p>
	<p>Interpersonal Skills & Responsibility</p>
	<p>3.8 Engage in teamwork and manage time effectively.</p>
	<p>3.9 Respect community ethics traditions and moral values</p>
<p>3.10 Identify his/her rights and responsibilities as a member of a research / teaching team and as a member of the scientific community at large.</p>	
<p>Communication, Information Technology, Numerical</p>	
<p>4.9 Use information, communication technology and numerical technology effectively. unicating with peers, lecturers and community, use of the computer and the internet, problem solving.</p>	
<p>4.10 Engage work in a teamwork and effective communications.</p>	
<p>4.11 Using computer professionally in programming language.</p>	

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Content	<ol style="list-style-type: none"> 1. <i>Installation of mathematica program.</i> 2. <i>Introduction to mathematica.</i> 3. <i>Using mathematica program in mathematical calculations.</i> 4. <i>Instruction of mathematical functions by mathematica.</i> 5. <i>application in physics</i> 6. <i>introduction to simulation experiments.</i> 7. <i>simulation experiments.</i> 8. <i>revision</i> 		
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20 %
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20 %
	Final Experimental and Theoretical Exam Exam	16	60 %
Media employed	Data Show, Smart Board, Blended, e-learning(D2L).WhatsApp group, White Board .Matlab program- computers.		
Reading list	<ol style="list-style-type: none"> 1. <i>Lecture notes prepared by academic staff member.</i> 2. <i>Computer Solutions in physics steve vanwyk , world scientific .(2003).</i> 3. <i>An Introduction to Computational Physics, Tao Pang , amzong try prime ISBN-13: 9781840858839, ISBN-10: 0521128749: 2nd ,2006.</i> 4. <i>Computational Physics, Peter Hertel, 2008, Fachbereich Physik 4. University at Osnabruck.</i> 5. <i>David M. Cook, Computation and Problem Solving in Undergraduate Physics (selfpublished).</i> 		

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Module designation	Physics		
Course level, if applicable	8th level.		
Code, if applicable	PHYS 423.		
Subtitle, if applicable	<i>Nuclear Physics 2</i>		
Courses, if applicable	-		
Semester(s) in which the module is taught	<i>1st and 2nd semesters.</i>		
Person responsible for the module	<i>Dr. Mohsen B. Shaalan.</i>		
Lecturer	<i>Dr. Mohsen B. Shaalan.</i>		
Language	<i>Arabic language.</i>		
Relation to curriculum	<i>Compulsory course in B.Ed. in Physics study plan.</i>		
Type of teaching,	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	<i>1</i>	<i>Lecture</i>	<i>45</i>
	<i>2</i>	<i>practical</i>	<i>15</i>
Workload	<i>154 H in semester.</i>		
Credit points	<i>4 C.H. - 7 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	<i>PHYS 415</i>		

Module objectives/intended learning outcomes	<p>objectives</p> <ol style="list-style-type: none"> - Give the student a clear picture about the sources of radiation - How to identify radiations, intensity and their interactions, risks, and hazards How to shield radioactive sources and radiation protection principles through an introduction of basic nuclear physics. - Developing of student ability to use the laws of the physical principles in both theoretical and experimental aspects, and illustrate the importance of its in respects to the applied fields. - Practicing students to work independently, and within the group, using the Internet. 	
	<p>Knowledge</p> <p>1.1 This is an introductory course which gives the student a wide and <i>general</i> lo different aspects of nuclear physics.</p> <p>1.2 Recognize the importance of nuclear reactors in nuclear physics with re structures.</p> <p>1.3 Identify some of the important characteristics of the active nuclei aspects radiation types and analysis, the interaction of radiation with the matter.</p> <p>1.4 To identify the theoretical and scientific fundamentals of the nuclear acce Identify some of the important aspects for the detection of nuclear radiation, protection, and biological effects and to follow-up applied research in this ar</p>	
	<p>Cognitive Skills</p> <p>1.1 Know the content of the subject</p> <p>1.2 Develop the student's ability to solve and analyse problems related to the</p> <p>1.3 Develop the student's ability to use physical laws.</p> <p>1.4 principles to understand the subject</p>	
	<p>Interpersonal Skills & Responsibility</p> <p>1.1 Work independently</p> <p>1.2 3.2 Work within a group</p> <p>1.3 Share research ideas and findings with other</p> <p>1.4 Leadership development (managing time, resources and people)</p>	
	<p>Communication, Information Technology, Numerical</p> <p>1.1 Communicating with peers, lecturers and community, use of the comput and the internet, problem solving.</p> <p>1.2 Communicating with lecturers.</p> <p>1.3 Communicating with community.</p> <p>1.4 Use of the computer and the internet.</p> <p>1.5 Problems solving</p>	

Content	<ol style="list-style-type: none"> 1. Nuclear reactors (the basic structure of the reactors, classification, criticality of reactors, fission products. 2. Damage inside the reactors, Protection systems, most popular types of reactors. 3. Nuclear accelerators (the theoretical principles of acceleration), types of accelerators. 4. Resonance accelerators, Betatron accelerator, Synchrotron, Synchro-cyclotron accelerators, Isochronous Cyclotrons. 5. Radiation sources (fast electrons sources - sources of heavy charged particles - sources of electromagnetic radiation - neutron sources). 6. Interaction of radiation with matter: interaction of the heavy ions, electrons, alphas, neutrons and gamma-rays with matters. 7. Interaction of radiation with matter: interaction of the alphas with matters. 8. Interaction of radiation with matter: interaction of the electrons with matters. 9. Interaction of radiation with matter: interaction of the gamma-rays with matters. 10. Interaction of radiation with matter: interaction of the neutrons with matters. 11. Biological effects of ionizing radiation: entry of radioactive materials into the human body, what is a living cell, the interaction of radiation with the cell and physical stages and physicochemical, chemical stage, biological stage, early and late effects of radiation, genetic effects. 12. Units of radiation dose and its borders measure (flux intensity, exposure, absorbed dose, equivalence between Roentgen and radio. Biological effect in the body and the relative biological effect 13. Quality factor - equivalent dose rate - dose - dose endurance. 14. The maximum allowable dose limits - equivalent dose. 15. Risk factor, Multiply model, NIH Model 																	
Study and examination requirements and forms of examination	<table border="1"> <thead> <tr> <th data-bbox="462 1447 898 1608">Assessment task</th> <th data-bbox="898 1447 970 1608">Week Due</th> <th data-bbox="970 1447 1404 1608">Proportion of Total Assessment</th> </tr> </thead> <tbody> <tr> <td data-bbox="462 1608 898 1666">Midterm Exam</td> <td data-bbox="898 1608 970 1666">8</td> <td data-bbox="970 1608 1404 1666">20 %</td> </tr> <tr> <td data-bbox="462 1666 898 1765">Homework, Quizzes, Discussions, Team Group, Projects, & Lab</td> <td data-bbox="898 1666 970 1765">14</td> <td data-bbox="970 1666 1404 1765">20 %</td> </tr> <tr> <td data-bbox="462 1765 898 1823">Final Experimental Exam</td> <td data-bbox="898 1765 970 1823">15</td> <td data-bbox="970 1765 1404 1823">20 %</td> </tr> <tr> <td data-bbox="462 1823 898 1877">Final Theoretical Exam</td> <td data-bbox="898 1823 970 1877">16</td> <td data-bbox="970 1823 1404 1877">40 %</td> </tr> </tbody> </table>	Assessment task	Week Due	Proportion of Total Assessment	Midterm Exam	8	20 %	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20 %	Final Experimental Exam	15	20 %	Final Theoretical Exam	16	40 %		
Assessment task	Week Due	Proportion of Total Assessment																
Midterm Exam	8	20 %																
Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20 %																
Final Experimental Exam	15	20 %																
Final Theoretical Exam	16	40 %																
Media employed	Data Show, Smart Board, Blended, - e-learning(D2L). WhatsApp group, White Board .experiments																	

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Reading list	<ul style="list-style-type: none">- <i>Kenneth S. Krane, Introductory Nuclear Physics, 1988, John Wiley & Sons</i>- <i>Nuclear Physics by Irving Kaplan, 1979.</i>- <i>Irving Kaplan Nuclear Physics, Addison, Wesley Publ. Comp., 1963.</i>- <i>H.A. Enge, "Introduction to Nuclear Physics" Addison, Wesley Publ. Comp., 1981.</i>
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Module designation	PHYSICS		
Module level, if applicable	<i>8th level</i>		
Code, applicable if	PHYS424		
Subtitle, applicable if	<i>Not applicable</i>		
Courses, applicable if	<i>Laser physics and it's applications.</i>		
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>		
Person responsible for the module	<i>Dr. Ismat Ali</i>		
Lecturer	<i>Dr. Ismat Ali</i>		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Elective course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	<i>1</i>	<i>Lecture</i>	<i>30</i>
	<i>2</i>	<i>practical</i>	<i>15</i>
Workload	<i>114</i>		
Credit points	<i>3 CH / 5 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	PHYS 413		
Module objectives/intended learning outcomes	<p>Objectives:</p> <ol style="list-style-type: none"> 1. The fundamental theories of general optics and properties of optic . Emission and absorption of light, Einstein relations, distribution inverted, gain coefficient, optical resonators, laser patterns. He-Ne laser, Nd-YAG. Characteristics of lasers: the spectral line width of the laser, the beam breakthrough, thread Beam, Flashing 'assembling lasers, switches coefficient Q, doubling the frequency, phase pairing. 		

	<p>2. Applications of lasers: medical applications, industrial, military, scientific, standard, Holography, communications</p>
	<p>Knowledge</p> <p>Identify the laser</p> <p>Identify laser applications in public life</p> <p>Identify the basis for the production of laser</p>
	<p>Cognitive Skills</p> <p>The definition of the student on the concept of laser</p> <p>The student applied laser in everyday life</p> <p>To know the student the bases for the production of laser</p>
	<p>Interpersonal Skills & Responsibility</p> <p>Division students to groups to conduct joint research group</p> <p>Skills take responsibility and lead the team</p>
	<p>Communication, Information Technology, Numerical</p> <p>Ability to use the World Wide Web in search of the latest findings of modern science</p> <p>- Ability to use computers in research writing and presentation using power point</p> <p>use - The computers in the provision of research and scientific reports required</p> <p>- use the modern techniques in scientific research</p> <p>- The ability to analyze research information required</p>

Content

List of Topics	No. Of Weeks	Contact Hours
Characteristics of lasers: the spectral line width of the laser, a breakthrough beam, the beam coherence, gloss',	2	4

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Interaction Material with Photons(processes absorbance, emission, stimulated)	2	4	
Emission and absorption of light	1	2	
Einstein relations, distribution inverted, gain coefficient	2	4	
Population inversions Optical resonators	2	4	
Laser patterns	1	2	
Laser applications (He-Ne and Nd-Yag Laser)	2	4	
Revision	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Experimental Exam	15	20
	Final Theoretical Exam	16	40
Media employed	Data Show, Smart Board, Blended, - e-learning, White Board .experiments		
Reading list	Lasers : principles and applications , by J.Wilson and J.F.B. Hawkes Prentice Hall, 1992.		

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Module designation	PHYSICS		
Module level, if applicable	8th		
Code, if applicable	PHYS391		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	<i>biophysics</i>		
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>		
Person responsible for the module	<i>Dr. Emad M. Elhami</i>		
Lecturer	<i>Dr. Emad M. Elhami</i>		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Elective course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	<i>1</i>	<i>Lecture</i>	<i>30</i>
	<i>2</i>	<i>practical</i>	<i>15</i>
Workload	<i>80</i>		
Credit points	<i>2 CH /3 ECTs</i>		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	<i>None</i>		
Module objectives/intended learning outcomes	Objectives:		
	1 . Nature, importance, principles of nanotechnology		
	2. Properties of nano particles and forms of of nano materials		
	3. Microscopes in nanotechnology		
	4. Developments of nanotechnology in different science		
	Knowledge		
-Learning fundamentals of biophysics			
-identify some important programs to help solve the equations of motion of different aspects.			

	Identify the scientific basis. Article interaction with radiation - radiation applications in medical diagnosis and treatment
	Cognitive Skills
	- Gain knowledge of student applications Biophysics
	- Knowledge of X-ray and CT - NMR
	- The application of physics in treatment
	- the use of physical concepts such as electron spin resonance -
	Interpersonal Skills & Responsibility
	Communication skills with others
	Skills to take responsibility and lead the team
	Communication, Information Technology, N
	The use of technology in communication and scientific rese
	-the use of software and computers to solve problems in t and numerical difficulties. .
- the use of technology in teaching and learning..	

Content

List of Topics	No. Of Weeks	Contact Hours
Branches of the science of biophysics - A Brief History	2	4
Matter interaction with radiation - radiation applications in medical diagnosis and treatment	1	2
Random effects and the inevitable effects - the impact of radiation on biological molecules - the effects of radiation with a high linear energy transfer rate:	2	4
The ability of the suspension and the rate of linear energy transfer - the relative	2	4

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biological effectiveness - the direct and indirect effects of damage to biodiversity -			
The nature of the sound and the level of intensity of sound - ultrasound and how they produce - the application of ultrasound in the diagnosis and treatment	2	4	
Laser Radiations in Medical Physics -	1	2	
X-ray and CT - NMR - Methods Altair	1	2	
The application of Nano Technology in the diagnosis and treatment	2	4	
Revision	2	4	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Midterm Exam	8	20
	Homework, Quizzes, Discussions, Team Group, Projects, & Lab	14	20
	Final Theoretical Exam	16	60
Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments		
Reading list	fundamentals in biophysics -talev Dr. Marwan Ahmad Fahad -dar Obeikan Publishing .		

Compulsory College Requisites				
Educational Courses				
Course Code	Course Number	Course	Credit Hours	Pre-requisite
EDU	116	Teaching Techniques and Communications Skills	(2+0+0)2	-
EDU	117	Fundamentals of Islamic Education	(2+0+0)2	-
EDU	118	The System and Policy of Education in KSA	(2+0+0)2	-
EDU	126	Developmental Psychology	(2+0+0)2	-
EDU	216	Psychological Health	(2+0+0)2	EDU 126
EDU	217	Principles of Educational Research	(2+0+0)2	-
EDU	226	Educational Psychology	(2+0+0)2	EDU 126
EDU	316	Administration and Educational planning	(2+0+0)2	-
EDU	317	Production of E-learning resources	(2+0+0)2	EDU 116
EDU	326	Teaching Strategies	(2+0+0)2	-
EDU	327	Educational Curricula	(2+0+0)2	-
EDU	416	Modern Trends in Teaching Strategy	(2+0+0)2	EDU 326
EDU	417	Educational Evaluation	(2+0+0)2	-
EDU	427	Practicum	(0+0+12) 6	120 Successful Hours. EDU 416 & EDU 417

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Module designation	<i>Educational</i>
Module level, if applicable	<i>1st Level</i>
Code, if applicable	<i>EDU 116</i>
Subtitle, if applicable	-
Courses, if applicable	<i>Educational Techniques & Communication skills</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Imen Hassen Hassen Zaghloul</i>
Lecturer	<i>Imen Hassen Hassen Zaghloul</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory course in B.Ed. in Physics.</i>
Type of teaching, contact hours	<i>30 hours of Lectures</i>
Workload	<i>80</i>
Credit points	<i>NCAAA (2) / ECTS(3)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	-

Module objectives/intended learning outcomes	Knowledge:	
	<ul style="list-style-type: none"> The notion of communication and its methods and techniques 	
	<ul style="list-style-type: none"> Educational techniques and their resources 	
	<ul style="list-style-type: none"> The types of educational techniques/ materials 	
	<ul style="list-style-type: none"> Curriculum Design 	
	<ul style="list-style-type: none"> The scope of educational techniques 	
	<ul style="list-style-type: none"> Modern Trends in the field 	
	Cognitive Skills:	
	<ul style="list-style-type: none"> Writing Reports. 	
	<ul style="list-style-type: none"> Data analysis 	
	<ul style="list-style-type: none"> Gaining research skills 	
	Interpersonal Skills & Responsibility:	
	<ul style="list-style-type: none"> Communication skills 	
	<ul style="list-style-type: none"> Scientific discussion 	
	<ul style="list-style-type: none"> Leadership skills 	
<ul style="list-style-type: none"> Participating in debates 		
Communication, Information Technology, Numerical:		
<ul style="list-style-type: none"> Acquiring the necessary IT skills to carry out research. 		
<ul style="list-style-type: none"> Using electronic databases in research 		
<ul style="list-style-type: none"> Data collection and data presentation 		
<ul style="list-style-type: none"> Computer-based data analysis 		
Content	1. An Introduction to Communication	
	2. The nature and classification of educational methods	
	3. Educational materials and their design	
	4. Real Objects, samples and models	
	5. Modern educational systems	
	6. Introduction to the Educational systems and their design.	
	7. The concepts of educational techniques	
	8. Modern Trends in Educational Techniques	
	9. Modern Trends in Educational Techniques	

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Study and examination requirements and forms of examination	<i>Midterm exam : 20%</i>
	<i>Research: 10%</i>
	<i>Production of educational resources: 7%</i>
	<i>Assignments and discussions: 3%</i>
	<i>Final exam: 60%</i>
Media employed	-
Reading list	<ul style="list-style-type: none"> • <i>Hila Ahmed Mohamed (2008) Educational Technology between theory and Practice, 2nd ed. Amman: Al Masira Publishing House.</i> • <i>Messaoudi Saad Hamdi (2007). Skills of Improving Communication. Jeddah: The Centre for producing E-learning materials.</i> • <i>Sabri, Maher (2003) The Arabic Encyclopedia of Educational and Technological Terms. Riyadh: Al Rashed Bookshop</i>

Module designation	<i>Educational</i>
Module level, if applicable	<i>1st Level</i>
Code, if applicable	<i>EDU 117</i>
Subtitle, if applicable	-
Courses, if applicable	<i>The Principles of Islamic Education</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Al Kahtani Al Refaat Mesfer</i>
Lecturer	<i>Al Kahtani Al Refaat Mesfer</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory course in B.Ed. in Physics.</i>
Type of teaching, contact hours	<i>30 hours of Lectures</i>
Workload	<i>80</i>
Credit points	<i>NCAAA (2) / ECTS(3)</i>

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Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.	
Recommended prerequisites	-	
Module objectives/intended learning outcomes	Knowledge:	
	<ul style="list-style-type: none"> • <i>Understanding education in general and in Islam.</i> 	
	<ul style="list-style-type: none"> • <i>The Importance and goals of education in Islam</i> 	
	<ul style="list-style-type: none"> • <i>Understanding the methods of Islamic Education</i> 	
	<ul style="list-style-type: none"> • <i>Understanding the major sources of Islamic Education.</i> 	
	<ul style="list-style-type: none"> • <i>Understanding the major theories of Islamic Education.</i> 	
	<ul style="list-style-type: none"> • <i>Acquiring problem solving skills</i> 	
	Cognitive Skills:	
	<ul style="list-style-type: none"> • <i>Comparing the ideas of the different thinkers in Islam.</i> 	
	<ul style="list-style-type: none"> • <i>Discussing the contemporary issues from the point of view Islam.</i> 	
	<ul style="list-style-type: none"> • <i>Employing the theories of the different thinkers in Islam.</i> 	
	<ul style="list-style-type: none"> • <i>Identifying the major challenges of education</i> 	
	Interpersonal Skills & Responsibility:	
	<ul style="list-style-type: none"> • <i>Understanding the theories of the different thinkers of Islam.</i> 	
<ul style="list-style-type: none"> • <i>Understanding the role of school in promoting moderate ideas.</i> 		
Communication, Information Technology, Numerical:		
<ul style="list-style-type: none"> • <i>Acquiring the necessary IT skills to carry out research.</i> 		
<ul style="list-style-type: none"> • <i>Using electronic databases in research</i> 		
Content		1. <i>What is Education? What is Islamic Education?</i>
		2. <i>The Importance and Objectives of Islamic Education.</i>
		3. <i>The characteristics and sources of Islamic Education</i>
		4. <i>The Principles of Islamic Education</i>
		5. <i>The Institutions of Islamic Education</i>
		6. <i>The Methods of Islamic Education</i>
		7. <i>The Theorists and thinkers of Education in Islam</i>
		8. <i>Islamic Education in Contemporary Society & Modern Issues</i>
		9. <i>Islamic Education in the Numerical Age</i>

Module Handbook of B.Ed. in Physics Program

Study and examination requirements and forms of examination	<i>Midterm exam</i> : 20%
	<i>Individual Research Project: 10%</i>
	<i>Group project: 5%</i>
	<i>Attendance : 5%</i>
	<i>Final exam: 60%</i>
Media employed	-
Reading list	<ul style="list-style-type: none"> • <i>Ali, Ismail Said et el. Islamic Education : Concepts and Practices. Riyadh: Al Rashed Bookshop.</i> • <i>Khatib Mohamed Shahat et el (2004) The Principles of Islamic Education. Riyadh: Al Khriji Publishing House.</i> • <i>Ghamdi, Abderrahman (1996). An Introduction to Islamic Education. Riyadh: Al Khriji Publishing House.</i> • <i>Nahlawi Abderrahman (2009) The Principles and Methods of Islamic Education at home and at school. Damascus: Al Feker Publishing house.</i>

Module designation	<i>Educational</i>
Module level, if applicable	<i>1st Level</i>
Code, if applicable	<i>EDU 118</i>
Subtitle, if applicable	-
Courses, if applicable	<i>The System and Policy of Education in the Kingdom</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Majda Mohamed Ibrahim Al Imam</i>
Lecturer	<i>Majda Mohamed Ibrahim Al Imam</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>compulsory course in B.Ed. in Physics.</i>
Type of teaching, contact hours	<i>30 hours of Lectures</i>

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Workload	80
Credit points	NCAAA (2) / ECTS(3)
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	-
Module objectives/intended learning outcomes	Knowledge:
	<ul style="list-style-type: none"> • <i>The Socio-economic and cultural situation prior to the Establishment of the Ministry of Education</i>
	<ul style="list-style-type: none"> • <i>The Pre-Saudi systems of traditional Education</i>
	<ul style="list-style-type: none"> • <i>The birth of modern education in the kingdom</i>
	<ul style="list-style-type: none"> • <i>Short and long-term goals of Education in the Kingdom</i>
	<ul style="list-style-type: none"> • <i>Public Education for boys and girls</i>
	Cognitive Skills:
	<ul style="list-style-type: none"> • <i>King AbdulAziz as the founder of modern Education.</i>
	<ul style="list-style-type: none"> • <i>The Role of King Fahd in improving the educational system.</i>
	<ul style="list-style-type: none"> • <i>The Socio-economic and cultural situation prior to the Establishment of the Ministry of Education</i>
	<ul style="list-style-type: none"> • <i>The notion of Permanent Education</i>
	<ul style="list-style-type: none"> • <i>Identifying the problems of Higher Education</i>
	<ul style="list-style-type: none"> • <i>The goals of Girls' education</i>
	Interpersonal Skills & Responsibility:
	<ul style="list-style-type: none"> • <i>Communication skills</i>
	<ul style="list-style-type: none"> • <i>Scientific discussion</i>
	<ul style="list-style-type: none"> • <i>Leadership skills</i>
	<ul style="list-style-type: none"> • <i>Participating in debates</i>
	Communication, Information Technology, Numerical:
	<ul style="list-style-type: none"> • <i>Acquiring the necessary IT skills to carry out research.</i>
<ul style="list-style-type: none"> • <i>Using electronic databases in research</i> 	
<ul style="list-style-type: none"> • <i>Data collection and data presentation</i> 	
<ul style="list-style-type: none"> • <i>Data sorting</i> 	

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Content	1. <i>The Educational Policy of Saudi Arabia</i>	
	2. <i>The Socio-economic and cultural situation prior to the Establishment of the Ministry of Education</i>	
	3. <i>The objectives of Education in the Kingdom</i>	
	4. <i>Public Education</i>	
	5. <i>Higher Education</i>	
	6. <i>Private Education</i>	
	7. <i>Educational Systems for People with special needs</i>	
	8. <i>Educational Systems for People with special needs</i>	
	9. <i>Teacher training</i>	
Study and examination requirements and forms of examination	<i>Midterm exam : 20%</i>	
	<i>Individual Research Project: 3%</i>	
	<i>Group project: 7%</i>	
	<i>Attendance : 5%</i>	
	<i>Essays: 5%</i>	
	<i>Final exam: 60%</i>	
Media employed	-	
Reading list	<ul style="list-style-type: none"> • <i>Akil Abdullah Ben Akil.(2013) The policy of Education in Saudi Arabia: Its roles and Principles. 10 ed. Riyadh: Al Rashed Bookshop</i> • <i>Sunbol, Abdulaziz et al. (1987) The System of Education in Saudi Arabia. Riyadh: King Saudi University Press.</i> 	

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Module designation	<i>Educational</i>
Module level, if applicable	<i>2nd Level</i>
Code, if applicable	<i>EDU 126</i>
Subtitle, if applicable	-
Courses, if applicable	<i>Developmental Psychology</i>
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>
Person responsible for the module	<i>Amina Mohamed Othman</i>
Lecturer	<i>Amina Mohamed Othman</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course.</i>
Type of teaching, contact hours	<i>30 hours of Lectures</i>
Workload	<i>80</i>
Credit points	<i>NCAAA (2) / ECTS(3)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	-

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge:</p> <ol style="list-style-type: none"> 1. Theories of psychology and development 2. Understanding the link between age and development. 3. The different stages of development 4. Understanding Developmental problems 5. Understanding childhood problems 6. Understanding the factors of development <p>Cognitive Skills:</p> <ol style="list-style-type: none"> 1. Understanding psychology. 2. The importance of psychology 3. Understanding the stages of development 4. The factors affecting development 5. Understanding the problems of development <p>Interpersonal Skills & Responsibility:</p> <ol style="list-style-type: none"> 1. Communication skills 2. Scientific discussion 3. Leadership skills 4. Participating in debates <p>Communication, Information Technology, Numerical:</p> <ol style="list-style-type: none"> 1. Acquiring the IT skills to carry out research. 2. Using electronic databases in research 3. Data collection and data presentation 4. Computer-based data analysis
<p>Content</p>	<ol style="list-style-type: none"> 1. An Introduction to Psychology and developmental psychology. 2. The Scientific methods of psychology 3. The factors of Human Development 4. Real Objects, samples and models 5. General rules of development 6. The stages of Human development in the Quran 7. The Cradle stage and the different ways of development 8. Early childhood and the different ways of development 9. Late Childhood and the different ways of development 10. Adolescence and the different ways of development 11. Adolescence: Some case studies
<p>Study and examination requirements and forms of examination</p>	<p>Theoretical Midterm Exam: 20%</p> <p>Research: 10%</p> <p>Attendance : 5%</p> <p>Assignments and discussions: 5%</p> <p>Final Exam: 60%</p>
<p>Media employed</p>	<p>-</p>

Module Handbook of B.Ed. in Physics Program

Reading list	<ul style="list-style-type: none"> • <i>Hamam Fadia & Ahmed Ali (2002) Developmental Psychology. Riyadh: Azzahra Punlishing House.</i> • <i>Hcine Mahmoud Atah (1991) Human Development. Riyadh: Al Khirjine Publishing House.</i> • <i>Zahran Hamed.(1982) Developmental Psychology. Cairo: The book Universe publishing house.</i>
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Module designation	<i>Educational</i>
Module level, if applicable	<i>3rd Level</i>
Code, if applicable	<i>EDU 217</i>
Subtitle, if applicable	-
Courses, if applicable	<i>Principles of Educational Research</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	Dr. Iftikar Abdullah Al-Ibraheem
Lecturer	Dr. Iftikar Abdullah Al-Ibraheem
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course.</i>
Type of teaching, contact hours	<i>30 hours of Lectures</i>
Workload	<i>80</i>
Credit points	<i>NCAAA (2) / ECTS(3)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge:</p> <ol style="list-style-type: none">1. <i>Understanding the basic concepts of educational research.</i>2. <i>Identifying the elements of educational research plan</i>3. <i>Knowing the tools of educational research</i>4. <i>Mentioning the tools of educational research</i>5. <i>Identifying the methods of educational research</i>6. <i>Identifying the steps of the scientific method of educational research.</i> <p>Cognitive Skills:</p> <ol style="list-style-type: none">1. <i>Applying the scientific research steps in doing a research project.</i>2. <i>Search and collecting data and information about different research projects.</i>3. <i>Criticizing and analyzing a number of scientific thesis.</i>4. <i>Positive communication with others and the exchange of views.</i>5. <i>Tracking the style of logical scientific thinking in addressing the problems faced by students</i> <p>Interpersonal Skills & Responsibility:</p> <ol style="list-style-type: none">1. <i>Retaining the ethics of educational research</i>2. <i>Communicate positively and respect the cooperative learning groups.</i>3. <i>Self-research and surveying the research assignments.</i>4. <i>Using the scientific method in thinking, research and discussion.</i>5. <i>Thinking in combination with cooperative research groups to solve some problems and provide solutions to them.</i> <p>Communication, Information Technology, Numerical:</p> <ol style="list-style-type: none">1. <i>Identifying the skills needed to be developed in this field:</i>2. <i>Using the self- research skills on different websites related to the subject.</i>3. <i>Using skills of cooperative learning and the active participation in achieving the tasks and various activities.</i>4. <i>Using thinking maps in the preparation of research plans</i>
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<p>Content</p>	<p>First: Educational research (definition, objectives, fields)</p> <ol style="list-style-type: none"> 1. Definition of educational research 2. Objectives of educational research 3. Importance of educational research 4. Characteristics of educational research 5. Fields of educational research <p>Second: Scientific method in educational research:</p> <ol style="list-style-type: none"> 1. Definition of science and its objectives 2. Scientific way of research 3. Trends of scientific research 4. Scientific behavior and normal behaviour, the non-scientific. <p>Third: Plan of Educational Research:</p> <p>A: Identifying the problem:</p> <ol style="list-style-type: none"> 1. The nature of the problem in educational research. 2. Access to the sources of the problem in educational research 3. Considerations and conditions that must be taken into account in the selection of the problem of educational research 4. Types of research problems and identifying the methods of problem formulation in educational research. 5. Standards of evaluating the problem in educational research. <p>B: Contents of Research Plan:</p> <p>Title, introduction, problem, previous studies, research objectives, importance of research, assumptions, axioms, research limitations, procedures of study, identifying the concepts, and a list of references and documentation.</p> <p>Four: Sources of collecting data and information in educational research.</p> <ol style="list-style-type: none"> 1. Library and educational research 2. Classification system in the library 3. Internet and educational research 4. Training on how to use the library and educational research <p>Five: Samples and tools of educational research:</p> <ol style="list-style-type: none"> 1. Samples: Definition, sample selection, types of samples (random sampling methods, methods of non-random sample) research tools. 2. Questionnaire: Steps of designing a questionnaire, forms of questionnaire, rules of forming a questionnaire, and the distribution of the questionnaire. 3. Interview: Interview procedures, forms of interview, and traits of conducting an interview. 4. Observation: types of observation, observation procedures, traits and limitations of observation, and differences between interview and observation. 5. Tests. <p>Six: Methods of educational research:</p> <ol style="list-style-type: none"> 1. Descriptive method: Definition, steps, styles of descriptive studies.
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	<p>2. <i>Semi-experimental method: definition, characteristics, and evaluation of this method.</i></p> <p>3. <i>Experimental method: Concepts, adjusting the variables, types of experimental designs, evaluating the experimental method.</i></p> <p>4. <i>Seven: Educational research (ethics, mistakes, and obstacles):</i></p> <p>5. <i>Ethics of educational research (Intellectual property, data confidentiality, impartiality....)</i></p> <p><i>Inherited errors in educational research.</i></p> <p><i>Obstacles to educational research.</i></p>
Study and examination requirements and forms of examination	<p><i>Midterm Exam: 20%</i></p> <p><i>Research assignments and preparing a suggested research Plan: 10%</i></p> <p><i>Classroom discussions: 10%</i></p> <p><i>Final Exam: 60%</i></p>
Media employed	-
Reading list	<ul style="list-style-type: none"> • <i>Mohammad Abdulrazak Ibraheem And Abdulbaqi Abdulmonem Abu Zaid: Skills of Educational Research, Al-Fikr House.</i> • <i>Sameer Younes Salah and others: Methods of Educational Research between Theory and Practice, Alfalah Library, Kuwait 2007.</i> • <i>Abdullah Sulaiman Ibraheem, Zain bin Hassan Raddadi: Methods of Research in Human Sciences, Al-Rushd Bookstore., Riyadh, 2007.</i> • <i>Mohammad Khaleel Abbas and others: Introduction to Methods of Research in Education and Psychology, Al-Moieserah House, Jordan, 2007.</i>

Module designation	<i>Educational</i>
Module level, if applicable	<i>3rd Level</i>
Code, if applicable	<i>EDU 216</i>
Subtitle, if applicable	-
Courses, if applicable	<i>Mental Health</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Dr. Rajawat Abdulateef</i>
Lecturer	<i>Dr. Rajawat Abdulateef</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course.</i>

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Type of teaching, contact hours	<i>30 hours of Lectures</i>
Workload	<i>80</i>
Credit points	<i>NCAAA (2) / ECTS(3)</i>
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.
Recommended prerequisites	<i>EDU 126</i>

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge:</p> <ol style="list-style-type: none">1. <i>Understanding the basic concepts of mental health.</i>2. <i>Identifying the role of Islamic education in mental health.</i>3. <i>Recognizing the standards of normality and abnormality.</i>4. <i>Identifying the aspects of mental health.</i>5. <i>Identifying the personal characteristics of mental health</i>6. <i>Identifying the curriculums of mental health.</i> <p>Cognitive Skills:</p> <ol style="list-style-type: none">1. <i>Students discern the modern concepts of mental health</i>2. <i>Students differentiate between the basic concepts of mental health</i>3. <i>Applying the basic principles and theories of metal health according to reality.</i>4. <i>Applying the theoretical concepts of mental health in the house, school, and community.</i>5. <i>Evaluating and criticizing what you read of concepts and theories in the field of mental health. (Developing critical thinking skills).</i>6. <i>Students should be able to solve problems using the direct method</i> <p>Interpersonal Skills & Responsibility:</p> <ol style="list-style-type: none">1. <i>Students should be able to develop themselves benefiting from the courses of mental health.</i>2. <i>Enhancing the ethical values and commitment with oneself and others.</i>3. <i>Accepting team-work, promoting cooperation and participation values, and the ability to lead groups.</i>4. <i>Act responsibly in personal and professional relationships.</i>5. <i>Know how to use the skill of dialogue and exchange of ideas, commit to the ethics of discourse and respect others' opinions.</i>6. <i>Accept other's opinion</i> <p>Communication, Information Technology, Numerical:</p> <ol style="list-style-type: none">1. <i>Using communication and information technology</i>2. <i>Using the world wide web to accomplish the assigned tasks.</i>3. <i>Having the ability to check the E-references.</i>4. <i>Be able to access digital libraries.</i>5. <i>Communicate effectively with instructor</i>6. <i>Participation in private forums o exchange information</i>
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Content	<ol style="list-style-type: none"> 1. <i>Definition of Mental Health</i> 2. <i>personal characteristics of mental health</i> 3. <i>Mental health approaches</i> 4. <i>Definition of Mental Illness</i> 5. <i>Mental health from the perspective of Islam</i> 6. <i>Definition of Mental health in Islam</i> 7. <i>Indicators of Mental health in the light of the Holy Quran and Sunnah.</i> 8. <i>Concepts of personal normality and abnormality</i> 9. <i>Standards of normality and abnormality (medical, statistical, social and religious)</i> 10. <i>Compatibility and mental health</i> 11. <i>Definition of Compatibility</i> 12. <i>Differences between Compatibility and Adaptation</i> 13. <i>Aspects of Compatibility</i> 14. <i>Mental health in the family</i> 15. <i>Mental health in the school</i> 16. <i>Mental health in the community</i> 17. <i>Defensive tricks</i> 18. <i>Definition of Defensive tricks</i> 19. <i>Defensive tricks – types</i> 20. <i>Models of defensive tricks</i> 21. <i>Psychological and mental disorders – origin, definition, and differences between them.</i> 22. <i>Models of neurological disorders (anxiety, hysteria, obsessive-compulsive disorder, phobias)</i> 23. <i>Models of psychotic disorders (psychotic depression - schizophrenia)</i> 24. <i>The treatment of psychosis - the fate of psychosis</i> 25. <i>Psychosomatic disorders</i> 26. <i>Definitions - causes</i> 27. <i>Psychotherapy -Types</i> 28. <i>Mental health for teachers</i> 29. <i>Importance of metal health for teachers</i> 30. <i>Role of the teacher in achieving the metal health for students.</i>
Study and examination requirements and forms of examination	<p><i>Midterm Exam: 20%</i> <i>Research and discussion: 10%</i> <i>Classwork : 10%</i> <i>Final Exam: 60%</i></p>
Media employed	-
Reading list	

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Module designation	<i>Educational</i>
Module level, if applicable	<i>4th Level</i>
Code, if applicable	<i>EDU 226</i>
Subtitle, if applicable	-
Courses, if applicable	<i>Educational Psychology</i>
Semester(s) in which the module is taught	<i>1ST & 2nd Semester</i>
Person responsible for the module	<i>Dr. Mona Hamed Mohammad Abo Wardeh</i>
Lecturer	<i>Dr. Mona Hamed Mohammad Abo Wardeh</i>
Language	<i>Arabic</i>
Relation to curriculum	<i>B.Ed. In Physics, compulsory course.</i>
Type of teaching, contact hours	<i>30 hours of Lectures</i>
Workload	<i>80</i>
Credit points	<i>NCAAA (2) / ECTS(3)</i>
Requirements according to the examination regulations	<i>The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.</i>
Recommended prerequisites	<i>EDU 126</i>

<p>Module objectives/intended learning outcomes</p>	<p><i>Knowledge:</i></p> <ol style="list-style-type: none"> 1. <i>Understanding the basic concepts and conditions of learning.</i> 2. <i>Identifying the role of Educational Psychology in the learning process.</i> 3. <i>Recognizing the importance of Educational Psychology for the teacher and student.</i> 4. <i>Identifying the objectives of Educational Psychology.</i> 5. <i>Identifying the concept and basic conditions of learning</i> 6. <i>Identifying the importance of practice and its impact on learning</i> <p><i>Cognitive Skills:</i></p> <ol style="list-style-type: none"> 1. <i>Students discern the role of Educational Psychology in the learning process</i> 2. <i>Understanding the topics of Educational Psychology</i> 3. <i>Students differentiate between the importance of Educational Psychology for students and teachers.</i> 4. <i>Practically, applying the theoretical objectives of Educational Psychology</i> 5. <i>Analyzing the concept of learning and recognizing its basic conditions.</i> 6. <i>Recognizing the different types of practices and its importance in learning</i> <p><i>Interpersonal Skills & Responsibility:</i></p> <ol style="list-style-type: none"> 1. <i>Cooperation, group work and teamwork.</i> 2. <i>Affiliation, active participation, respect others opinions and not to underestimate this participation; no matter what is.</i> 3. <i>Practices of students for the phases that accept the values, preference and commitment.</i> 4. <i>Group participation in activities to develop personal relationships</i> 5. <i>Assign students for group activities achieved through cooperation with other partners.</i> <p><i>Communication, Information Technology, Numerical:</i></p> <ol style="list-style-type: none"> 1. <i>Search means about sources of information on World Wide Web</i> 2. <i>Search means about sources of information in libraries</i> 3. <i>Ways of documenting scientific references</i> 4. <i>Some statistical information for calculating the coefficient correlation in the correlation studies to examine the relationships between variables in the field of Educational Psychology</i>
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<p>Content</p>	<ol style="list-style-type: none"> 1. <i>Educational Psychology: topics, importance objectives, and principles of learning in Islam.</i> 2. <i>Learning: Definition and conditions of learning.</i> 3. <i>A: Motivation: definition, types, focus on the factors that create motivation at schools like focusing students' attention on the target of learning, exciting students tendencies - discussion - identifying learning outcomes - reward and punishment- school tests - to provide an appropriate educational environment.</i> 4. <i>B: Maturity: definition and its importance.</i> 5. <i>C: Practice: definition, methods and uses in school.</i> 6. <i>Four: some educational practices in the field of learning (memorization, retrieval, efforts distributed and effort retrieved, collective and partial way, and macro-learning and individual learning</i> 7. <i>Correlative theory of learning - learning by trial and error (Thorndike) - educational applications on the trial and error theory.</i> 8. <i>Theory of educational learning and its applications</i> 9. <i>Learning foresight (Aljhtalt) and educational applications.</i> 10. <i>Sematic meaning (Azobel) and its educational applications.</i> 11. <i>Social learning by observation (Bandoora) and its educational applications.</i> 12. <i>Effects of learning transfer - concept - types - scientific results for the transition of the impact of learning.</i> 13. <i>Conducting experiments on learning, drawing curves and interpretation of the results of learning theories in this light.</i>
<p>Study and examination requirements and forms of examination</p>	<p><i>Midterm Exam: 20%</i> <i>Group research : 10%</i> <i>Individual assignments: 5%</i> <i>Participation and various activities : 5%</i> <i>Final Exam: 60%</i></p>
<p>Media employed</p>	<p>-</p>
<p>Reading list</p>	

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Module designation	Educational		
Module level, if applicable	5th		
Code, if applicable	EDU316		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	Administration and Educational Planning		
Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	Dr. Yahia Mostafa		
Lecturer	Dr. Yahia Mostafa		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Compulsory course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	1	Lecture	30
Workload	80		
Credit points	2 CH /3 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	None		

<p>Module objectives/intended learning outcomes</p>	<p>Objectives:</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Developing students' skills and knowledge with respect to school administration and educational planning by considering the fundamental concepts of school administration, educational planning, and practical aspects that might benefit them in the practicum</p> </div> <p>Knowledge</p> <p>Students define the concept of educational and school administration</p> <p>Identifying the principles of the successful school administration and its objectives.</p> <p>Explain the fields of school administration</p> <p>Arrange the elements of the successful educational planning process</p> <p>Define the concept of administrative report</p> <p>Mention the concepts of organizing, directing, and evaluation.</p> <p>Cognitive Skills</p> <p>Compare between different schools to develop the administrative thinking.</p> <p>Demonstrate the relationship between the successful educational steps and organization</p> <p>Distinguishes between decision-making and decision-taking.</p> <p>Explain the steps of strategic planning</p> <p>Apply SWAT steps in dealing with educational issues.</p> <p>Write a correct administrative report</p> <p>Interpersonal Skills & Responsibility</p> <p>Share other partners in writing an educational plan</p> <p>Discuss the techniques of making decisions in relation to a specific issue.</p> <p>Provide others with the necessary data and information to write a successful report.</p>
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	Communication, Information Technology, Numerical
	Interact with others on different administrative websites and forums.
	Offer solutions to some administrative problems proposed by educational and school directorates via their websites.

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Content			
List of Topics	No. Of Weeks	Contact Hours	
1. Educational Administration 2. A: Concepts of Educational Administration 3. B: Comparison between Educational and Instructional Administration	1	२	
4. The evolution of administrative thinking (classical school, the movement of human relations, and entrance of systems).	2	॔	
5. Concepts of school administration and its objectives 6. Characteristics of the successful school administration	1	२	
7. Principles of successful school administration 8. Fields of school administration	1	२	
9. Functions of school administration and its actions (planning, organizing, directing and controlling, and evaluation)	2	॔	
10. Core of educational planning, its principles and levels.	1	२	
11. Fundamentals of the successful educational planning 12. Phases of the successful educational planning at schools	1	२	
13. Using SWAT strategy in the successful educational planning	2	॔	
14. Core of administrative reports and skills needed to write these reports	1	२	
15. Skills of making educational decisions	1	२	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Group work	Every two weeks	०%
	Individual work	Weekly	०%
	Quizzes	Weekly	०%
	Attendance and conduct	Weekly	5%

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	Periodical tests	Middle of semester	20%
	Final exam	End of semester	60%
Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments		
Reading list			

Module designation	Educational		
Module level, if applicable	5th		
Code, if applicable	EDU317		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	Production and Sources of E-learning		
Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	Dr. Ahlam Dessoqi Aref Ibraheem		
Lecturer	Dr. Ahlam Dessoqi Aref Ibraheem		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Compulsory course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	1	Lecture	30
Workload	80		
Credit points	2 CH /3 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	Educational Technology and Skills of Communication		

<p>Module objectives/intended learning outcomes</p>	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Students identify the definition of modern technologies, its forms, and how to apply these technologies in the learning process like technology of e-learning, mobile learning, and widespread learning. 2. Identify the stages of educational design models which can be used in designing and producing the sources of e-learning. 3. Identify the concept of sources of e-learning, its models, and standards that can be used like the digital library. 4. Students should be able to produce different kinds of e-learning sources like multimedia, PowerPoint presentations, e-learning courses, digital learning objects, e-exams, blogs, and learning channels. <p>Take the responsibility for self-learning and his personal, professional and ethical growth.</p>
	<p>Knowledge</p>
	<p>1. Identify the concept of e-learning, its kinds, elements, ways to apply e-learning, and ways of running this system.</p>
	<p>2. Identify the concept of mobile and widespread learning, wireless technologies used, and advantages and disadvantages.</p>
	<p>3. Mention the concept of sources of learning and e-learning, kinds, and ways of appointing these sources.</p>
	<p>4. Analyzing the models of educational design used in designing the sources of e-learning.</p>
	<p>5. Mention the uses of Facebook, blogs, twitter, and YouTube.</p>
	<p>Cognitive Skills</p>
	<p>Research skills and survey about information related to different sources of e-learning.</p>
	<p>Skill analysis and assessment of information and concepts that are obtained.</p>
<p>Skill in the use of the scientific method to solve some of the problems and propose innovative solutions.</p>	
<p>Skill of applying information results in the findings of the new positions.</p>	
<p>Skill of self-assessment and the development of skills beyond the knowledge that is gained</p>	

	Interpersonal Skills & Responsibility		
	Skills of leadership		
	Skills of making decisions		
	Listening to others and dialogue skills.		
	Skills of communication and group work		
	Skills of self-learning		
	Skills of respecting others, values, customs, and traditions		
	Communication, Information Technology, Numerical		
	Skill of using computer in the production of e-learning sources		
	Skills of using internet and available websites for the production of e-learning sources		
	Skills of electronic and human communications with other colleagues in both ways: written and oral.		
	Skills of effective communication within groups of cooperative learning.		
	Content		
	List of Topics	No. Of Weeks	Contact Hours
1. E-Learning	1	2	
2. Mobile and widespread learning	1	2	
3. Sources of learning and e-learning	1	2	
4. Models of educational design used in designing and production of sources of e-learning.	1	2	
5. Designs and productions of effective PowerPoint presentations in the light of educational and technical standards.	1	2	

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6. Design and production of interactive multi-media educational programs	1	2	
7. Design and production of electronic courses (e-lessons)	1	2	
8. Design and production of e-book	1	2	
9. Design and production of digital learning objects and databases	1	2	
10. Design and production of e-tests	1	2	
11. Design and production of educational websites	1	2	
12. Using website tools (2.0) in teaching and learning like blogs, Wiki, Facebook, Twitter, broadcast, and YouTube.	1	2	
13. Design and production of educational e-blogs	1	2	
14. Production of an educational channel on YouTube.	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Final exam	16	60
	Mid-term exam	8	10
	Discussions, assignments along the term (achievement file), and punctuality of attendance.	Weekly	10
	Practical exam	13	20
Media employed	Data Show,.Smart Board, Blended,- e-learning,White Board .experiments		
Reading list			

Module designation	Educational
Module level, if applicable	6th
Code, if applicable	EDU326
Subtitle, if applicable	<i>Not applicable</i>
Courses, if applicable	Teaching Strategies

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Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	Dr. Rasha Hashem Abdulhameed		
Lecturer	Dr. Rasha Hashem Abdulhameed		
Language	Arabic		
Relation to curriculum	Compulsory course in B .Ed Physics plan study		
Type of teaching, contact hours	No.	Type of Teaching	Contact hours per week.
	1	Lecture	30
Workload	80		
Credit points	2 CH /3 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	None		

Module objectives/intended learning outcomes	Objectives:
	The main objective of this course is to familiarize students with the importance of teaching methods, models and strategies, and be acquainted to the skills of teaching, how to write instructional objectives, types of teaching strategies, criteria for selecting appropriate methods of teaching, effective teaching, factors that lead to effective teaching, features of effective teacher, practicum, and the role of both the student and the teacher, the headmaster and the role of the internal supervisor at college for the sake of achieving success in relation to practicum.
	Knowledge
	Students define the following: A. Teaching B. Teaching strategies C. Teaching methods D. Teaching techniques E. Lesson F. Course G. Unit H. Teaching and learning I. School book
	Student mentions the specifications of good lesson plans.

	Student mentions the skills needed to implement the lesson.
	Student classifies teaching objectives into: knowledge, skills and emotions.
	Student mentions the standards and principles of selecting the suitable teaching strategies.
	Student mentions the teaching principles that the effective teacher must commit with.
	Students identify the goals of practicum
	Cognitive Skills
	Students distinguish between the meaning of method, strategy, technique, input, and teaching model.
	Student plans to explain a lesson within his major
	Student masters the various implementation skills
	Student writes the teaching objectives in three levels.
	Student infers the skills of effective teaching
	Student differentiates between the standards of applying various teaching strategies
	Interpersonal Skills & Responsibility
	Student develops himself personally and professionally
Students make positive relationships with others	
Student acquires the traits of effective teacher	
Student acquires the skills of making decisions	
Student acquires skills of team work	

	Communication, Information Technology, Numerical
	Student acquires skills of using the strategy of e-learning when explaining a lesson
	Student acquires skills of surfing various educational websites relevant to the course.
	Student acquires skills of communicating with learners
	Student acquires skills of using modern communication means in education

Content

List of Topics	No. Of Weeks	Contact Hours
1. Definitions and concepts of teaching strategies: A. Definition of teaching B. Teaching strategies C. Teaching methods D. Teaching techniques E. Lesson F. Course G. Unit H. Teaching and learning I. School book	1	2
2. Teaching system including (intended teaching system, the components of the educational system, teaching system characteristics and components, steps toward good teaching, relationship of teaching methods with other elements of the curriculum)	1	2
3. Teaching goals: classifications of teaching goals how to write each type of these objectives, standards for writing them, and common mistakes made when writing such instructional goals.	1	2
4. Stages of lesson planning: concept of planning, levels of planning, importance of planning, principles of planning, and good planning specifications.	1	2

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5. Lesson implementation skills : lesson preparation skills, skills of using teaching aids, skills of asking questions, classroom management skill, motivation skills, skills of verbal and non-verbal interaction)	3	6
6. Teaching strategies: the concept of teaching strategy, classification of teaching strategy, good strategy specifications in teaching, teaching strategies (lecture, discussion, inductive, standardization, problem-solving, discovery learning, project strategy, role-playing strategy, appointments , cooperative learning, e-learning, Six- Hat strategy), elements of teaching strategies, principles and criteria for selecting teaching strategies, choosing the teacher of the best strategy.	4	8
7. Effective teaching: concept of effective teaching, factors affecting effective teaching, behavior of the effective teacher, status of the effective teacher, qualities of effective teacher, rules that effective teacher must comply with.	1	2
8. Practicum: the role of both the student and the teacher, the headmaster and the role of the internal supervisor at college for the sake of achieving success in relation to practicum.	2	4

	Assessment task	Week Due	Proportion of Total Assessment
Study and examination requirements and forms of examination	Assignments and projects (individual and groups)	3-14	10%
	Writing the teaching objectives in the three levels	4	5%
	Every student prepares a lesson	14	5%

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	related to his major		
	Mid-term exam	10	20%
	Final exam	17	60%
Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments		
Reading list	Richard Callahan, Robert Harder, Donald Orich(2012): Teaching Strategies : A guide to effective education, Senior Publisher		

Module designation	Educational		
Module level, if applicable	6th		
Code, if applicable	EDU327		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	Educational Curricula		
Semester(s) in which the module is taught	<i>1st & 2nd Semester</i>		
Person responsible for the module	Dr. Ahlam Abdulazeem Mabrook		
Lecturer	Dr. Ahlam Abdulazeem Mabrook		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Compulsory course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	<i>1</i>	<i>Lecture</i>	<i>30</i>
Workload	80		
Credit points	2 CH /3 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	None		

<p>Module objectives/intended learning outcomes</p>	<p>Objectives:</p>
	<p>Students perfectly recognize the concepts and basic principles related to Curricula.</p>
	<p>Knowledge</p>
	<p>Identifying the definition of old and new approach of curriculum and the differences between both of them.</p>
	<p>Define curriculum as an educational system and the relationship between curriculum, teaching system , and education system.</p>
	<p>Explain the basic principles of constructing a curriculum.</p>
	<p>Organizing the various organizations of curriculum</p>
	<p>Mentioning advantages and drawbacks of the various organizations of curriculum.</p>
	<p>Identify the steps to develop the curriculum and how to evaluate and develop it.</p>
	<p>Cognitive Skills</p>
	<p>Compare practical skills and methods used for building curriculum.</p>
	<p>Considering the theoretical aspect of educational practices in constructing the central approach of curriculum</p>
	<p>Considering the theoretical aspect of educational practices in constructing the central approach of Curriculum activity.</p>
	<p>Linking the evolution of building the curriculum and changes taking place in contemporary Islamic society.</p>
	<p>Achieve the practical skills to evaluate the curriculum.</p>
	<p>Interpersonal Skills & Responsibility</p>
	<p>Observing students during seminars while expressing their opinions.</p>
	<p>Evaluation of students' skills to communicate effectively possessing the skills of team work through the different assignments done by groups of students.</p>
<p>Observing to what extent students accept criticism.</p>	
<p>Effective communication with other colleagues to finalize the given assignments.</p>	

	Communication, Information Technology, Numerical
	Develop students' ability to use modern technology
	The acquisition of effective communication skills with others through various participations related to the curriculum
	Using internet in the process of research to rich the content of the course.

Content

List of Topics	No. Of Weeks	Contact Hours
1. Introduction about the course and its specification mentioning the concepts, definitions, course, book.	1	2
2. Definition of curriculum approach now and then mentioning the differences between both of them and the criticism directed to the old approach of curriculum. - Factors of the emergence of the modern concept of the curriculum as an educational system and the relationship between the curriculum, system of teaching and education system.	1	2
3. Philosophical basis for the construction of the curriculum.	1	2
4. Social basis for the construction of the curriculum.	1	2
5. Cognitive basis for the construction of the curriculum.	1	2
6. Psychological basis for the construction of the curriculum.	1	2
7. Curricula organizations, traits, and drawbacks.	1	2
8. Main curricula (definition, traits, and drawbacks)	1	2
9. Curricula activity (definition, traits, and drawbacks)	1	2
10. Environmental approach (definition, traits, and drawbacks)	1	2
11. Technological approach (definition, traits, and drawbacks).	1	2
12. International approach (definition, traits, and drawbacks)	1	2
13. Evaluation of curricula	1	2

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14. Curricula development	1	2	
15. General revision for the topics of the course	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Mid-term exam	^	٢٠
	Assignments and research activities	3,7,10	١٠
	Classwork and participations	All weeks	5
	Participation in final seminars related to the course	15	5
	Final exam	Final week	60
Media employed	Data Show, Smart Board, Blended, e-learning, White Board experiments		
Reading list			

Module designation	Educational		
Module level, if applicable	7 th		
Code, if applicable	EDU416		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	New Trends in Teaching Strategies		
Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	Dr. Somayya Abdulraheem Badi		
Lecturer	Dr. Somayya Abdulraheem Badi		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Compulsory course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	1	Lecture	30
Workload	80		
Credit points	2 CH /3 ECTs		

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Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.											
Recommended prerequisites	Teaching Strategies											
Module objectives/intended learning outcomes	<p>Objectives:</p> <table border="1" data-bbox="624 495 1401 544"> <tr> <td>Defining the new strategies in teaching methods</td> </tr> </table> <p>Knowledge</p> <table border="1" data-bbox="624 658 1401 734"> <tr> <td>Identifying the concept of teaching in the traditional framework</td> </tr> </table> <table border="1" data-bbox="624 757 1401 833"> <tr> <td>Student understands the basic principles of teaching from the perspective of Russo, Diwi, and Herbart.</td> </tr> </table> <table border="1" data-bbox="624 855 1401 904"> <tr> <td>Student recognizes the main qualities of the teacher.</td> </tr> </table> <p>Cognitive Skills</p> <table border="1" data-bbox="624 1019 1401 1095"> <tr> <td>Compare between the definition of traditional and modern teaching</td> </tr> </table> <table border="1" data-bbox="624 1117 1401 1193"> <tr> <td>Student infers the importance of using teaching strategies in the right way</td> </tr> </table> <table border="1" data-bbox="624 1216 1401 1265"> <tr> <td>Student recognizes how to design a teaching strategy</td> </tr> </table> <table border="1" data-bbox="624 1288 1401 1364"> <tr> <td>Student differentiates between strategy, method and technique.</td> </tr> </table> <p>Interpersonal Skills & Responsibility</p> <table border="1" data-bbox="624 1491 1401 1568"> <tr> <td>Students coordinate between each other comparing between scientists' views in relation to teaching principles</td> </tr> </table> <table border="1" data-bbox="624 1590 1401 1639"> <tr> <td>Practical use of some strategies during lecture</td> </tr> </table> <table border="1" data-bbox="624 1662 1401 1738"> <tr> <td>Activating the active learning during lecture using all procedures and steps needed for that.</td> </tr> </table>	Defining the new strategies in teaching methods	Identifying the concept of teaching in the traditional framework	Student understands the basic principles of teaching from the perspective of Russo, Diwi, and Herbart.	Student recognizes the main qualities of the teacher.	Compare between the definition of traditional and modern teaching	Student infers the importance of using teaching strategies in the right way	Student recognizes how to design a teaching strategy	Student differentiates between strategy, method and technique.	Students coordinate between each other comparing between scientists' views in relation to teaching principles	Practical use of some strategies during lecture	Activating the active learning during lecture using all procedures and steps needed for that.
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Practical use of some strategies during lecture												
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	Communication, Information Technology, Numerical
	Communicating linguistically with teachers and the use of body language
	Using the means of modern educational communication web CT – clapboard
	Using the sources of e-learning and educational websites related to the course
	Interaction between students within groups

Content

List of Topics	No. Of Weeks	Contact Hours	
1. Teaching strategy (definition, importance, teacher's role, learner's role, and specifications of the good strategy)	1	2	
2. Role of teacher and learner in teaching, postulates underlying the teaching, and scientists who made a change in teaching trends and methods	1	2	
3. Advantages of old and new learning, brainstorming strategies, and Concepts Maps.	1	2	
4. Multiple intelligences strategies.	2	4	
5. Strategies of advanced organizations	2	4	
6. Thinking-based strategies (thinking related to brain)	2	2	
7. Strategies of active learning	2	2	
8. Strategies of e-learning	2	4	
9. Strategies of blended learning (coeducation)	1	2	
10. Practical models for teaching strategies.	1	2	
Study and examination requirements and forms of examination	Assessment task	Week Due	Proportion of Total Assessment
	Mid-term exam	8	20
	Research and discussion	10	10
	Classwork	12	10
	Final exam	16	60
	Total	-	100

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Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments
Reading list	

Module designation	Educational		
Module level, if applicable	7 th		
Code, if applicable	EDU 417		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	Educational Evaluation		
Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	Dr. Asma Mostpha Al Sihimi		
Lecturer	Dr. Asma Mostpha Al Sihimi		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Compulsory course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	1	Lecture	30
Workload	80		
Credit points	2 CH /3 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	None		
Module objectives/intended learning outcomes	Objectives:		
	Introducing students to the principles of Educational Evaluation and the ways of applying it to their academic and professional lives		
	Knowledge		
Training students to design appropriate written exams according to the standards.			

	Understanding the methods and steps of exam design and the types of exam questions.	
	Learning how to make observation cards to evaluate the teaching process.	
	Understanding the tools of content analysis.	
	Acquiring the ability to think logically	
	Cognitive Skills	
	Acquiring the ability solve education-related problems.	
	Acquiring the ability to make scientific deduction	
	Acquiring the ability to analyze.	
	Acquiring the ability to think critically.	
	Acquiring the ability to think innovatively	
	Acquiring the ability to put the acquired knowledge into practice	
	Interpersonal Skills & Responsibility	
	Raising awareness of collective work.	
	Being able to do assignments independently.	
	Maintaining positive relationships with others	
	The ability to take part in group discussion	
	The ability to run discussion	
Communication, Information Technology, Numerical		
Acquiring the necessary IT skills to carry out research.		
Interacting in a group		
Participation and Communication		
Acquiring the ability to employ knowledge.		
Content		
List of Topics	No. Of Weeks	Contact Hours

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1. General Introduction to the course and to the testing method.	1	2
2. What is Educational Evaluation?	2	4
3. The characteristics and conditions of Educational Evaluation	1	2
4. Types and classification of Educational Evaluation	1	2
5. The methods and tools of Educational Evaluation	1	2
6. The steps of Educational Evaluation	1	2
7. The domains of Educational Evaluation	1	2
8. Teacher Evaluation: rules and methods	1	2
9. Evaluating the Scientific outcomes of Education	2	4
10. Evaluating the professional outcomes of Education	1	2
11. Evaluating the psychological outcomes of Education	1	2
12. Modern Trends in Educational Evaluation	2	4

	Assessment task	Week Due	Proportion of Total Assessment
Study and examination requirements and forms of examination	Final Exam	As Scheduled	60%
	Midterm	seven	20%
	Assignments	Daily	15%
	Attendance	Daily	5%
	Media employed	Data Show, Smart Board, Blended, e-learning, White Board experiments	
Reading list			

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Module designation	Educational		
Module level, if applicable	8th		
Code, if applicable	-		
Subtitle, if applicable	<i>Not applicable</i>		
Courses, if applicable	Practicum		
Semester(s) in which the module is taught	1 st & 2 nd Semester		
Person responsible for the module	Dr. Hala Assaiyed		
Lecturer	Dr. Hala Assaiyed		
Language	<i>Arabic</i>		
Relation to curriculum	<i>Compulsory course in B .Ed Physics plan study</i>		
Type of teaching, contact hours	<i>No.</i>	<i>Type of Teaching</i>	<i>Contact hours per week.</i>
	1	<i>Field training</i>	180
Workload	360		
Credit points	6 CH /10 ECTs		
Requirements according to the examination regulations	The student shall be debarred from the final examination if the percentage of his absence exceeds (25%) out of the total lectures of the course without an acceptable excuse. The student who is debarred from the examination because of absence is considered as a failure in the course.		
Recommended prerequisites	Teaching Strategies EDU326 Modern trends in Teaching Strategies EDU416		

<p>Module objectives/intended learning outcomes</p>	<p>Objectives:</p> <table border="1" data-bbox="624 264 1401 315"> <tr> <td>Training students to teach in real life situations</td> </tr> </table> <p>Knowledge</p> <table border="1" data-bbox="624 371 1401 770"> <tr> <td>Explaining the role of the teacher.</td> </tr> <tr> <td>Understanding class management</td> </tr> <tr> <td>Learning verbal and non-verbal communication in class..</td> </tr> <tr> <td>The qualities of a good teacher.</td> </tr> <tr> <td>Setting teaching objectives</td> </tr> <tr> <td>Learning the different teaching methods</td> </tr> </table> <p>Cognitive Skills</p> <table border="1" data-bbox="624 826 1401 1424"> <tr> <td>Setting clear teaching objectives.</td> </tr> <tr> <td>Making good lesson plans</td> </tr> <tr> <td>Effectively introducing the lesson.</td> </tr> <tr> <td>Varying teaching techniques.</td> </tr> <tr> <td>Respecting learner differences</td> </tr> <tr> <td>Selecting good teaching materials</td> </tr> <tr> <td>Varying the teaching materials</td> </tr> <tr> <td>Employing the latest technologies in teaching</td> </tr> </table> <p>Interpersonal Skills & Responsibility</p> <table border="1" data-bbox="624 1480 1401 1995"> <tr> <td>Managing students at school.</td> </tr> <tr> <td>The ability to take part in group discussion</td> </tr> <tr> <td>Observing customs and social values</td> </tr> <tr> <td>Building strong and positive relationships with others</td> </tr> <tr> <td>Serving a good example in front of students</td> </tr> <tr> <td>Accept Criticism</td> </tr> <tr> <td>Managing classrooms</td> </tr> <tr> <td>Managing students at school.</td> </tr> </table>	Training students to teach in real life situations	Explaining the role of the teacher.	Understanding class management	Learning verbal and non-verbal communication in class..	The qualities of a good teacher.	Setting teaching objectives	Learning the different teaching methods	Setting clear teaching objectives.	Making good lesson plans	Effectively introducing the lesson.	Varying teaching techniques.	Respecting learner differences	Selecting good teaching materials	Varying the teaching materials	Employing the latest technologies in teaching	Managing students at school.	The ability to take part in group discussion	Observing customs and social values	Building strong and positive relationships with others	Serving a good example in front of students	Accept Criticism	Managing classrooms	Managing students at school.
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	Communication, Information Technology, Numerical
	Acquiring the necessary IT skills to carry out research.
	Interacting in a group
	Participation and Communication
	Acquiring the ability to employ knowledge.

Content

List of Topics	No. Of Weeks	Contact Hours
1. An introductory meeting with students to explain the goals and mechanisms of practicum.	1	2
2. Lesson Observation	2	12
3. Practicum	10	24
4. Final Evaluation	2	12

	Assessment task	Week Due	Proportion of Total Assessment
Study and examination requirements and forms of examination	Daily Attendance	All weeks	50%
	Portfolio	All weeks	10%
	Assignments	All weeks	10%
	Final assessment of the teacher trainee	All weeks	30%
	Media employed	Data Show, Smart Board, Blended, e-learning, White Board .experiments	
Reading list	Roseline, O, Olubor, S (1998) : Advances in the field of education : the Nigerian experiences, Institute Of Education , University Of Benin		