

Kingdom of Saudi Arabia

T6. Course Specifications (CS)

Course Specifications

Institution: Najran University	Date: 31-03-2017
College/Department : Applied Medical Sciences / Radiological Sciences	

A. Course Identification and General Information

1. Course title and code: Introduction to Physics - 204 PHST -2		
2. Credit hours : 2 (1+1)		
3. Program(s) in which the course is offered. : Bachelor of Radiological sciences (If general elective available in many programs indicate this rather than list programs)		
4. Name of faculty member responsible for the course Dr. Hamid Abdulla Ismaeal (male section) Dr. Soheir Soliman (female section)		
5. Level/year at which this course is offered : level 3/ 2nd year		
6. Pre-requisites for this course (if any): None		
7. Co-requisites for this course (if any): None		
8. Location if not on main campus : Main campus		
9. Mode of Instruction (mark all that apply)		
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage? 100
b. blended (traditional and online)	<input type="checkbox"/>	What percentage? <input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage? <input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage? <input type="text"/>
f. other	<input type="checkbox"/>	What percentage? <input type="text"/>
Comments: The lecture involves : Practice good presentation techniques Effective questioning Students discussion		

B Objectives

<p>1. What is the main purpose for this course?</p> <p>This course will provide basics in Physics. Students will be introduced to basic of units and dimensions, vectors and motion laws, It will examine the structure of waves together with physical phenomena such as types of electromagnetic waves, electricity, magnetism and optics, production of X-rays and construction of the X-ray tube, and brief introduction to Physics in Medicine.</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> • Updating the textbooks. • Explain strategy of the course in the beginning of the semester. • Encourage the students to see more details in web sites and reference books in the library. • Discussing some selected problems in each chapter.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

<p>Course Description:</p> <p>This course will provide a broad foundation in Physics. It will examine the structure of waves together with physical phenomena such as types of electromagnetic waves, electricity, magnetism, heat, optics and acoustics. In addition, students will be introduced to basic of units and dimensions, vectors and motion laws, production of X-rays and construction of the X-ray tube, and brief introduction to Physics in Medicine.</p>

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Overview of Units and dimensions: <ul style="list-style-type: none"> Quantities Units 	2	6
Introduction to vector: <ul style="list-style-type: none"> Scalar quantities Vectors quantities Vectors components Properties of vectors Product of vectors	2	6
Motion: <ul style="list-style-type: none"> Displacement, velocity, acceleration Newton's Laws of Motion Weight Free fall Force and motion problems in 1-D Normal force 	2	6
Overview of Light: <ul style="list-style-type: none"> Wave Vs. Particles Frequency and Wavelength Light Vs. Sound Why Objects Have Color Primary and Secondary Colors Light Transmission Planck's Constant Coherent Light Lasers 	2	6

Overview of Optics: <ul style="list-style-type: none"> • Reflection • Refraction • Speed of light • Snell's law • Critical angle • Fiber optics • Prisms • Plane mirrors • Concave and convex mirrors • Convex and concave lenses 	2	6
Overview of Electric Fields: <ul style="list-style-type: none"> • Electric Current • Voltage Sources • Chemical Battery • Electrical Resistance • Ohm's Law • Direct & Alternating Current • Simple Electric Circuits 	2	6
Electromagnetic Spectrum: <ul style="list-style-type: none"> • Waves. • Electromagnetic waves 	2	6
Introduction to application of Physics in Medicine: <ul style="list-style-type: none"> • Physics of the Eye and Ear • Defects of Vision & Their Correction • Ultrasound • X-Rays 	1	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	15		30			45
Credit	1		1			2

3. Additional private study/learning hours expected for students per week.	2 hrs/week
--	------------

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy			
On the table below are the five NQF Learning Domains, numbered in the left column.			
<p>First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). Second, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. Third, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)</p>			
Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	List the units of physical quantities and their dimensions.	<ul style="list-style-type: none"> Lectures Practical in labs Discussing with illustrating 	<ul style="list-style-type: none"> Written examinations Practical exams. Assignments and quizzes Oral questions.
1.2	Define the basic principles of motion, sound, light, electricity and electromagnetic waves.		
2.0	Cognitive Skills		
2.1	Differentiate between vector and scalars quantities.	<ul style="list-style-type: none"> Lectures Practical in labs Group-learning activity such as a seminarsand 	<ul style="list-style-type: none"> Written examinations Practical exams. Assignments and quizzes Oral questions.
2.2	create a suitable solve for physics problems in related topics.		

		tutorials. • Problem solving • Brain storming • Discussion	
3.0	Interpersonal Skills & Responsibility		
3.1	Show effective work in groups on laboratory experiments and thoughtful discussion and interpretation of data.	• Practical in labs • Group-learning activity such as a seminars and tutorials. • Group discussion. • Cooperative learning	• Practical exam. • Observation • Student presentation / seminar and discussion.
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Operate effectively the different informational resources including the library resources and websites	• Practical in lab. ▪ Cooperative learning ▪ Self-learning to the global of information networks	• Practical exam. • Observation • Student presentation / seminar and discussion.
4.2			
5.0	Psychomotor		
5.1	Perform the physics experiments with minimizing measurement error.	• Practical in lab. ▪ Cooperative learning ▪ Writing lab report	• Practical exam. • Observation
5.2	Drawing graphs of experiments correctly.		

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Theoretical mid-term exam	7 th	20
2	Practical mid-term exam	8 th	10
3	Presentation	During the course	10
4	Practical final exam	16	20
5	Theoretical final exam	17	40
6	Total		100

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Six office hours per week are offered to support students individually.
- Reachable via email.
- Personal web pages of academic members staff in university website.

E Learning Resources

1. List Required Textbooks
1. Cutnell, Introduction to Physics, John Wiley & Sons; 10th International student edition (2015).
2. John D. Cutnell, Introduction to Physics, Wiley & Sons; 9th Edition International Student Version edition (2012).
2. List Essential References Materials (Journals, Reports, etc.)
1. Halliday Resnick Walker ,Fundamentals of Physics, Volume 1 , 8th Edition (2007).
2. Bo Lou Buffa Jerry D. Wilson, College Physics Volume 1, 7th Edition (2009)

<p>3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)</p> <ol style="list-style-type: none"> 1. Tom W.B. Kibble and Frank H. Berkshire, Classical Mechanics, 5th Edition, Imperial College Press, London, 2004. 2. Herbert Goldstein, Charles Poole and John Safko, Classical Mechanics, 3th Edition, AddisonWesley, 2013.
<p>4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.</p> <ol style="list-style-type: none"> 1. http://sciencebooksonline.info/physics.html 2. http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html 3. http://de.physnet.net/PhysNet/optics.html 4. https://www.facebook.com/ScienceChannel/
<p>5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p> <p>Lab. Notes: Will be distributed to the students by the lecturer</p>

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
<p>1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> <ul style="list-style-type: none"> • Lecture room (8 x 15m) equipped with about 20 student seats, • Lab. (8 x 15m) equipped with about 20 student seats.
<p>2. Computing resources (AV, data show, Smart Board, software, etc.)</p> <ul style="list-style-type: none"> • White Board, computer, Data Show , Overhead projector and laptop.
<p>3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> • Library, and Seminar Room and Wi-Fi internet connections

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • University online questionnaire for evaluation the course by students. • Observing the students opinions recorded in the college student site. • Appeal& suggestions box.
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <p>Teaching is evaluated through:</p> <ul style="list-style-type: none"> • Student assessments • Peer review • Evaluation of head department • Self-evaluation & the instructor responses • Course report is provided every semester and improvement plans due to these sources.
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • Program learning outcomes are reviewed • Courses specifications • Student questionnaires • Courses and program reports • Independent evaluation of the program • Workshops held by skills development unit • Annual reports of External Examiner
<p>4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)</p> <ul style="list-style-type: none"> • Check marking of final exam papers by peer review
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> • Study the results of the course learning outcome assessment • The department provides continuous internal review. • Continuous support and monitoring by learning & teaching committee of quality and development deanship.



Name of Instructor: Dr. Soheir Soliman

Signature:

Date Report Completed: 31-3-2017

Program Coordinator : Dr. Mawahib Sayed Ahmed Aldosh

Signature:

Date Received

04/ 04/1438

Name of Instructor Dr. Hamid Abdullah Ismael

Signature:

Date Report Completed: 06-04-2017

Program coordinator: Alfatih Hasan Mohamed Albadri

Signature:

Date: 03/05/1438 H