Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications
(CS)

Course Specifications

Institution	**King Khaled University**	Date	2016
College/Department **Faculty of science/ physics department**/Joint Program			

A. Course Identification and General Information

1. Course title and code: **Phys 102 (General Physics for Health Science Students).**			
2. Credit hours**4(3+1)**			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course Dr. MUHAMMAD SHABBIR, Dr. SOHAIL AHMAD, Dr. VANGA GANESH (Theory) Mr. Hisham Mohammed Bakr and Mr. Abdullah Ahmadeni (Practical)			
5. Level/year at which this course is offered	**Second level**		
6. Pre-requisites for this course (if any)			
7. Co-requisites for this course (if any)**General Physics lab.**			
8. Location if not on main campus**AL MAHALA Campus**			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	✓	What percentage?	100
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	
Comments:			

B Objectives

1. What is the main purpose for this course? - To know the basic principles of physical measurements, conversion of units and dimensional analysis. -To understand the difference between scalar & vector and all algebraic processes related to vector quantities. - To study Newton`s laws of motion and its application, -To understand the basic principles of Static, torque, couples, center of gravity and its application to simple machines such as levers. - To study work, kinetic energy, potential energy, work energy principle, conservation of energy principles and its application and power. - To study elastic properties of materials. -To study thermal properties of matter and Heat transfer. - To study mechanism of non-viscous fluids, pressure of fluids, equation of continuity and Bernoulli's equation. - To study of Mechanics of viscous fluids, Poiseuille`s law. - To study of description of wave motion. - To study sound, intensity and intensity level of sound. - To study wave properties of lights, x-ray diffractions. - To study mirrors, lenses and imaging. - To study particle properties of light, photoelectric effect. - To study wave particle duality. - To study Nuclear and radiation physics and Ionizing radiation.
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) - Increasing the use of IT or web based reference material, changes in content as a result of new research in the field) - Using some models and resources from Internet in addition to textbook - Tutorials (problems) by encouraging the student to use graphics and computers facilities.

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

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
1- Measurements, units and vectors.	1	3
2- Newton`s laws of motion,	1	3
3- Static, torque , couples, center of gravity and levers.	1	3
4- Work, kinetic energy, potential energy. work-energy theory and power.	2	6
5- Elastic properties of materials.	1	3
6- Thermal properties of matter and Heat transfer.	1	3
7- Mechanism of non-viscous fluids, pressure of fluids, equation of continuity and Bernoulli's equation	1	3
8- Mechanics of viscous fluids, Poiseuille`s law. - Description of wave motion	1	3
9- Wave and sounds.	1	3
10-Wave properties of lights, x-ray diffractions. - Mirrors, lenses and imaging.	2	6
11- Particle properties of light, Einstien explanation. - The de Brogie wave hypothesis.	2	6
12-- Nuclear and radiation physics and Ionizing radiation.	1	3

List of Topics (Practical)	No. of Weeks	Contact hours
1- Measurement of errors	1	2
2- Specific heat capacity of solids	1	2
3- Mechanical Equivalent of heat	1	2
4- Surface Tension of Liquids.	2	2
5- Refractive index.	1	2
6- Coefficient of Viscosity by Stokes Method	1	2
7- Helical Spring (Static Method)	1	2
8- Correction of visual defects.	1	2
9- Interference of laser light and resolving power of human eye.	1	2
10-Radiaoctivity	1	2

2. Course components (total contact hours and credits per semester): 45						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	40	5		10		
Credit	3			1		4

3. Additional private study/learning hours expected for students per 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.

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.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	To define vector, force, torque,work, energy ,power, pressure, stress, strain, specific heat	Classroom lectures	Mid Exams
1.2	To define viscosity, transverse and longitudinal wave, Laws of reflection and refraction of light, law of photoelectric effect, isotopes, half life of radioactive sample ,units of ionizing radiations	Classroom lectures	Mid Exams
2.0	**Cognitive Skills**		
2.1	To differentiate between vectors and scalars, concept of work energy principle, differentiate between transverse and longitudinal waves	Discussions	Assignment
2.2	To understand the concept of viscosity in fluid flow , To differentiate between reflection and refraction, concept of real and virtual images, wave particle duality concept	Discussions	Assignment

3.0	**Interpersonal Skills & Responsibility**		
3.1	To apply laws of physics studied in this course to daily life situation	Classroom lectures and discussions	Mid Exam and Assignment
3.2	To apply the concept of fluid flow, intensity level of sounds, lens, defects of eyes, and hazards of radiations from medical Physics points of view.	Classroom lectures and discussions	Mid Exam and Assignment
4.0	**Communication, Information Technology, Numerical**		
4.1	Numerical problems based on mechanics (vectors, force, work energy, power)	Tutorials	Mid Exams
4.2	Numerical problems based on equation of continuity, Bernoulli equation, Poiseuelle's law, intensity of sound, Lens formula, snell's law, critical angle and half life of radioactive sample.	Tutorials	Mid Exams
5.0	**Psychomotor**		
5.1			
5.2			

Course LOs #	**1.1**	**1.2**	**2.1**		**3.1**		**4.1**	
1.1	✓							
1.2		✓						
2.1			✓					
2.2			✓					
3.1					✓			
3.2					✓			
4.1							✓	
4.2							✓	

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	Mid Exam I	6	10
2	Mid Exam II	12	10
3	Assignment I	4	2.5
4	Assignment II	8	2.5
5			
6			
7			
8			

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)
Office Hr for student consultations

E Learning Resources

1. List Required Textbooks Fundamental Physics
2. List Essential References Materials (Journals, Reports, etc.) Principles of Physics (Serway and Jewett)
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) Science Direct journals
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

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.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Main hall for lecturing 60 students.
2. Computing resources (AV, data show, Smart Board, software, etc.) 20 computer sets are needed for network connection.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

Providing educational facilities and models in the lecture.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching The student should evaluate the course together with the instructor. - An academic evaluation is required continuously. - Renewing the course contents periodically.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department - Evaluating the course at the departmental levels. - Evaluating the course outside the department**.**
3 Processes for Improvement of Teaching -A comparison of the course level should be made with similar courses at different universities of international repute. - Publishing an article related to health Physics education.
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)

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Latest published and specialized books in health physics.
- Contributing to conferences related to essential and university educational systems.

Name of Instructor:
Dr. MUHAMMAD SHABBIR, Dr. SOHAIL AHMAD, Dr. VANGA GANESH (Theory)
Mr. Hisham Mohammed Bakr and Mr. Abdullah Ahmadeni (Practical)

Signature:_____Date Report Completed:_____

Name of Field Experience Teaching Staff _____

Program Coordinator:_____

Signature: _____ Date Received:_____