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 129.**			
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 Mohammed Ajmal Khan, Dr Sohail Ahmad (Theory) Mohammed Abdul Aziz (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? - principles of physical measurements, conversion of units, dimensional analysis. - all algebraic processes related to vector quantities. - calculate different parameters dealing with motion in one dimension (average speed, velocity, instantaneous velocity, instantaneous acceleration, free falling objects) - Newton`s laws of motion, friction force and different applications. - work, kinetic energy, work-energy theory and conservative forces. - potential energy. - Coulomn laws, electric field for point charge and electrical potential. - Buoyant forces, Archimedes principle, pressure of fluids, equation of continuity and Bernoulli's equation. - static equilibrium, torque and elasticity. Electric conductivity, electric current and electric energy.
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 conventional textbooks or from Internet. - Executing all objectives - Tutorials (problems) by encouraging the student to use

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.	2	6

2- motion in one dimension and motion in two dimension.	2	6
3- Newtons laws of motion.	2	6
4- work , kinetic energy and potential energy.	3	9
5- fluid dynamics.	1	3
6- elasticity.	2	6
7- electric field and potential.	2	6
8- currents and resistance and electric energy and power.	1	3

List of Topics (Practical)	No. of Weeks	Contact hours
1- Measurement of errors	1	2
2- Helical Spring (Static Method)	1	2
3- Refractive index	1	2
4- Coefficient of Viscosity by Stokes	2	2
5-Thin Lenses	1	2
6- Specific heat capacity of solids	1	2
7- Simple Pendulum	1	2
8- Simple DC Circuits and Ohms law	1	2
9- Surface Tension and capillarity.	1	2
10- Mechanical Equivalent of heat	1	2

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

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, displacement , displacement, speed, velocity, force, work, energy ,power, pressure, stress, strain, specific heat	Classroom lectures	Mid Exams
1.2	To define stress, strain, youngs modulus of elasticity, flow rate, Bernoulli theorem, electric field, Ohms law and resistance	Classroom lectures	Mid Exams
2.0	**Cognitive Skills**		
2.1	To differentiate between vectors and scalars, differentiate between speed and velocity, concept of work energy principle,	Discussions	Assignment
2.2	To understand the concept of equation of continuity, Bernoulli theorem , To differentiate between electric field and electric potential	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 electric charge and electric field, laws of resistance from Engineering 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, Young's Modulus of elasticity, Coulumb's law, Ohm's law	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		2.5
4	Activity		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 Hrs for student consultations

E Learning Resources

1. List Required Textbooks **Physics for Scientist and Engineers (Serway and Jewett)**
2. List Essential References Materials (Journals, Reports, etc.) Fundamentals of Physics
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) Physics for Engineers and Scientists, Hans C. Ohanian, John T. Markert
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 Mohammed Ajmal Khan and Dr Sohail Ahmad (Theory), Mohammed Abdul Aziz (Practical)**

Signature:_____Date Report Completed:_____

Name of Field Experience Teaching Staff _____

Program Coordinator:_____

Signature: _____ Date Received:_____