

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications (CS)

Course Specifications

Institution: University of Dammam

Date: 10/04/2014

College/Department : College of Science / Department of Physics

A. Course Identification and General Information

1. Course title and code: General Physics1/ PHYS101N
2. Credit hours: 3(Lecture) + 2 (Lab)
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs): Bachelor in science / College of Science
4. Name of faculty member responsible for the course: A specific team from the Physics department
5. Level/year at which this course is offered: Level 1
6. Pre-requisites for this course (if any): NA
7. Co-requisites for this course (if any): NA
8. Location if not on main campus: College of Science, Arrian.

9. Mode of Instruction (mark all that apply)			
a. traditional classroom	Yes	What percentage?	20 % b.
b. blended (traditional and online)	No	What percentage?	60 % c. e-
c. learning	No	What percentage?	0%
d. correspondence	No	What percentage?	0%
f. other	Yes	What percentage?	20%
Comments: Used the Cooperative Education and interactive learning			

B Objectives

1. What is the main purpose for this course?

On completion of the course, the students will be able to:

- Recognize the basic principles of physics in the branches of mechanics, movement, forces and fluid mechanics, as well as mathematical treatment. Be able to explain some physical phenomena.
Conclude the basic laws of physics mathematically correct.
Gain practical experience through achievesome experiments related to the course.

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)

Lectures and power point presentation. Self learning.
Open discussion
s. Group work.
Black Board.

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

Course Description:

Course LOs #	1. Topics to be Covered	No. of Weeks	Contact hours
	List of Topics		
1a	Chapter 1/ physics and measurement: 1-1 Standard of length, mass and time 1-4 Dimensional analysis. Chapter 3/ Vector: 3-1 Coordinate systems 3-2 Vectors and standard quantities. 3.3 Some properties of vectors.	1	3

2a	Chapter 2/ Motion in one dimension: 2-1 Displacement, speed and velocity. 2-2 Instantaneous velocity and instantaneous speed. 2-3 Acceleration. 2-4 Graphical representation of the movement. 2-5 Motion in one dimension with constant acceleration. 2-6 Free fall objects.	1	3
3a	Chapter 4/ Motion in two dimensions: 4-1 Displacement, velocity, acceleration in two dimensions. 4-2 Motion in two dimensions. (Example 4-1). 4-3 Projectile motion Example (4-5).	1	3
4a	Chapter 5/ laws of motion: 5-1 The concept of power. 5-2 Newton's first law. 5-4 Newton's second law. 5-6 Newton's third law. 5-7 Some applications on Newton's laws. 5-8 Friction forces	2	6
5a	Chapter 7/ work and kinetic energy: 7-1 Work done by a constant force. work done by a spring 7-4 Kinetic energy and the work-kinetic energy theorem	1	3
6a	Chapter 8/ Potential energy and conservation of energy: 8-1 Potential energy. 8-4 Conservation of mechanical energy. (Example 8-2, 8-3). Chapter 9: Linear momentum and Collisions: 9-1 Linear momentum and its conservation. 9-3 Collisions. 9-4 Elastic and non-elastic collisions in one dimension.	1	3
7a	Chapter 15/ Fluid Mechanics: 15-1 Pressure 15-2 Variation of Pressure with Depth Example (15-2), (15-3) 15-3 Pressure Measurements	1	3
8a	15-4 Buoyant Forces and Archimedes's Principle. Example (15-5)	1	3
9a	15-5 Fluid Dynamics Flow characteristics. 15-6 Streamlines and The Equation of Continuity Example (15-7)	1	3
10a	15-7 Bernoulli's Equation Example (15-7) 15-8 Other Applications of Bernoulli's Equation.	1	3
11a	Review.	1	3

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	36	NA	24	NA	NA	60
Credit	36	NA	12	NA	NA	48

3. Additional private study/learning hours expected for students per week. 4

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	Identify the physical quantities, units, coordinates, and dimensions. Recognize the Vector and their characteristics	Lectures	Assignments Worksheet
1.2	Understand the kinematic equations, and laws of motion including Newton's laws. Apply the equations of motion.	Lectures Self learning worksheet	Quizzes Assignments
1.3	Identify the types of energy and the work – Kinetic energy theorem as well as the principle of energy conservation.	Lectures Self learning	Quizzes Assignments
1.4	Recognize the concepts of pressure, density and fundamentals of fluid mechanics. Recognize the Law of Archimedes and viscosity. Identify Bernoulli's equation and its applications.	Lectures worksheet	Quizzes Assignments Exams
2.0	Cognitive Skills		
2.1	Develop skillsof the perception , comprehension, critical and analyticalthinking of physical concepts.	Lectures Self learning	Assignments worksheet
2.2	Develop the ability to summarize the main ideas contained in the lesson.	Open discussions. Group work	quizzes Small project
2.3	Gain the skill of explanation natural phenomena on scientific grounds.	Open discussions. Group work	presentations
2.4	Employ and modify the literature of some topics in Physics.	Self learning Small project	presentations
3.0	Interpersonal Skills & Responsibility		
3.1	Dealing with others and collaborative work.	Team work	worksheet
3.2	Respects the opinions of others, and accepts criticism.	Open discussions.	presentations

4.0	Communication, Information Technology, Numerical		
4.1	Search about some subject in general Physics and some applications.	Search in internet Team work	Assignments Small project
4.2	Communicate with others via comments and explanations.	Team work discussion	Interview
4.3	Assigning students work offers a simple scientific idea using PowerPoint and entered within the evaluation	Using PC	presentations

5.0	Psychomotor		
5.1	Gain student skill to notice some natural phenomenon in daily life.	discussion	Assignments
5.2	Mastering the student to perform experiments in the laboratory.	Lab work	Quizzes Assignments
5.3	Gain student ability to describe, compare and derive the result.	discussion	Quizzes

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)													
	Knowledge				Cognitive Skills				Interpersonal Skills & Responsibility			Communication, Information Technology, Numerical		Psychomotor
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3	4.1	4.2	5.0
1a														
2a														
3a														
4a														
5a														
6a														
7a														
8a														
9a														
10a														
11a														

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	Essay/Written exam	6,10	28%
2	Worksheets / Assignments	3,5,7,9	6%
4	Lab (reports, quizzes)	Every week	16%

5	Lab(final)	14	14%
6	Final exam	16	36 %
	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)

Faculty web-page with communication tolls in Black Board.
4 office hours/ week.

E Learning Resources

1. List Required Textbooks: 1- Physics for Engineers and Scientists: Serway; 5th Ed. ونوجوتركب .ج.تريور، ياويرسد. أ. دنويمر بين سدنهلأو. بين يملعلا عايزيفلا ضاييرلا برشنلا ليخر لماراد بن بر خأورام عدم محمد محد. أ.تجمرت تتيويج
2. List Essential References Materials (Journals, Reports, etc.):
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4- List Electronic materials, Web sites, Facebook, Twitter, etc: برعلا بين يئاييفلا/ www.phys4arab.net/vb/ تئيئاييفلا ar.wikipedia.org/wiki/%25D9%2585%25D 1- قتلما تئيئاييفلا www.phys4arab.net/vb/forumdisplay.php... 2- قعوسولا عايزيفلا ي ميلعتلا عقولا 3- براجتلا ي دتنم 4- www.hazemsakeek.com ا 5- عايزيفلا تينا طيرلا لقا www.physicsworld.com
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.) Classroom enough for 50 students, Black (white) boards. Projector.
2. Computing resources (AV, data show, Smart Board, software, etc.) Computer.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list): Lab for physical experiments enough for 35 students.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- 1- Students evaluation in each semester
- 2- Meeting with students
- 3- e-suggestions
- 4- Open door policy
- 5-Bonus activity

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

Assessment of student achievement statistically by the Office of Quality and Academic Development and implemented by the department.

3 Processes for Improvement of Teaching

- 1- Studying reports
- 2- Training of faculty.

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)

- 1- Taking a sample of assignments and exams to determine validity and reliability (NA)

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

- 4- Collecting all reports and evaluations at the end of the year for a reviewing purpose.