هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

COURSE SPECIFICATIONS
(CS)

General Physics I

PHYS 110

June 2018

Course Specifications

Institution: **: King Saud University**	Date: 2017
College/Department : **college of sciences/ physics and Astronomy**	

A. Course Identification and General Information

1. Course title and code: **General Physics I**
2. Credit hours: **4(3+0+2) hours**
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Science Program in Physics and Astronomy
4. Name of faculty member responsible for the course: Mohamed Rezk
5. Level/year at which this course is offered: **1438H-1439H**
6. Pre-requisites for this course (if any): Math 101
7. Co-requisites for this course (if any): PHYS 111
8. Location if not on main campus: On main campus for Male + female
9. Mode of Instruction (mark all that apply) a. traditional classroom ■ What percentage? 75% b. blended (traditional and online) ☐ What percentage? c. e-learning What percentage? d. correspondence ☐ What percentage? ☐ f. laboratory ■ What percentage? 25% Comments:

B Objectives

1. What is the main purpose for this course? • This course aims to give students an overview of topics in general physics and will provide an initial platform for core courses in Units and dimensions, vectors, Motion in straight line, Newton's Laws of motion, work, energy and momentum, simple harmonic motion, elasticity, mechanics of non-viscous fluids, flow of viscous fluids, surface tension, temperature, quantity of heat, work and heat.
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). - Assigning extra hours for solving selected problems that are of particular interest. - Post some course material on the website which could be accessed by the students.

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

Course Description: Units and dimensions, Introduction to vectors, Motion in straight line, Newton's Laws of motion, work, energy and momentum, simple harmonic motion, elasticity, mechanics of non-viscous fluids, flow of viscous fluids, surface tension, temperature, quantity of heat, work, heat and Newton's law of Cooling .

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Physics and Measurement	2/3	2
Motion in one dimension	5/3	5
Vectors	4/3	4
The Laws of motion	5/3	5
Energy and Energy Transfer	5/3	5
Potential Energy	4/3	4
Static Equilibrium and Elasticity	1	3
Fluid Dynamics and Applications	4/3	4
Surface Tension	1	3
Thermodynamics- Temperature	5/3	5
Heat and Internal Energy	5/3	5

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

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	45		**30**			75

Credit	45		15			60

3. Additional private study/learning hours expected for students per week.
Four to five hours per week

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy:

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;

The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned

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	Recall units and dimensions of physics quantities	Lecture, debates	First midterm Exams
1-2	memorize the principle laws in mechanics , elasticity and fluids	Lecture, debates	Second Mid Term Exams
2.0	**Cognitive Skills**		
2.1	Develop and analyze free body diagram Calculate different physics quantities through conservation of energy and momentum	Lectures and debates	Quiz Final exam
2.2	Differentiate between kinds of elasticity, also between types of fluids	Lectures, homework and Whole group Discussion	analytical reports Quiz

	Explain the surface tension phenomena		Final exam
		.	
3.0	**Interpersonal Skills & Responsibility**		
3.1	Illustrate the relation between the temperature and heat and energy	Lecture, Homework examples in class and debates	short essays Final exam
3.2	analyze and evaluate physics quantities by using Newton's law of Cooling	lab demonstrations	analytical reports and using the lab manuals
4.0	**Communication, Information Technology, Numerical**		
4.1	demonstrate the free fall by Newton's laws	lab demonstrations and small group discussion	analytical reports , using the lab manuals and group presentations
5.0	**Psychomotor**		
5.1	Experiment the laws of mechanics, elasticity, heat and cooling	lab demonstrations and wide variety of hands-on student learning activities	analytical reports and lab exams

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	First Midterm	6th	15%
2	Second Midterm	12th	15%
3	Assignment and Quizzes		

4	Laboratory (term work + final)	13th	30%
5	Final Exam	End of term	40%

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)

- *Two hours of office distributed weekly.*
- *three hours per week for academic outreach by the academic Guidance unit of the Department*

E Learning Resources

1. List Required Textbooks

Serway, Raymond A. and John W. Jewett, Jr., *"Physics for Scientists and Engineers with Modern Physics";* 6th ed. Thomson and Brooks/Cole, 2004.

خضر الشيباني وأسامة العاني ،"الفيزياء العامة للجامعات" ، الطبعة الثانية. دار الخريجي

2. List Essential References Materials (Journals, Reports, etc.)

خضر الشيباني وأسامة العاني ،"الفيزياء العامة للجامعات" ، الطبعة الثانية. دار الخريجي

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

Fishbane, Paul M., Stephen Gasiorowicz, and Stephen T. Thornton. *Physics for Scientists and Engineers*, 3rd ed. Upper Saddle River, N.J.: Prentice Hall. 2005 .

Giancoli, Douglas C. *" Physics for Scientists and Engineers with Modern Physics",* 3rd ed. Upper Saddle River, N.J.: Prentice Hall. 2000 .

Halliday, David, Robert Resnick, Jearl Walker. *Fundamentals of Physics*, 7th ed. Hoboken, N.J.: John Wiley and Sons. 2005.

Halliday, David, Robert Resnick , and Kenneth Krane. *Physics, Parts I and II*, 5th ed. Hoboken, N.J.: John Wiley and Sons. 2001

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

Required text web site: www.pse6.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.) Need to set up the tenth experiment in the laboratory. Arrange the lab so that no more than two students work on a set.
2. Computing resources (AV, data show, Smart Board, software, etc.) Make terminals available to students since some problems are recommended to be solve by using a computer.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) Exam should not be just Multiple choice questions only marked on the final answer. Tutors should mark student assignments . Marks should be allocated for the assignments. For all of the above we need more staff.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Student Questionnaires
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department Discussions within the group of faculty teaching the courses Phys 110 and Phys 111
3 Processes for Improvement of Teaching: Bring displays to the classroom.

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) • Providing samples of all kind of assessment in the departmental course portfolio of each course • Assigning group of faculty members teaching the same course to grade same questions for various students.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • The course material and learning outcomes are periodically reviewed and the changes to be taken are written in the course specification. • Writing course report every term

Name of Instructor: Mohamed Rezk

Signature: _____ Date Report Completed: _____

Program Coordinator:_____
Signature: _____ Date Received: _____