المركز الوطني للتقويم والاعتماد الاكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: University of Tabuk	Date: 17-4-2019
College/Department : Physics, science	

A. Course Identification and General Information

1. Course title and code: General Physics(3), PHYS 203
2. Credit hours: 4 Credit Hours (3 Lectures, 1 Lab)
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. Taha A Hanafy
5. Level/year at which this course is offered: 3
6. Pre-requisites for this course (if any): PHYS 101
7. Co-requisites for this course (if any): none
8. Location if not on main campus: The main campus
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. other	Lab	What percentage?	25 %

Comments:

B Objectives

1- Summary of the main learning outcomes for students enrolled in the course.

Provides students with the essential knowledge and understanding of the phenomenon involved in Equilibrium, wave motion and oscillations
-Understand the laws of oscillatory motion and learn how to apply them to simple mechanical systems
-Understand the equations of fluid mechanics to intuitive concepts.
-Learn how to translate elastic physical problems into the equations which describe them; solve these equations for the variables describing the problems: and interpret the results to describe the resulting behavior of the elastic physical systems

1. 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)

1- Update the content of the course periodically.
2- Tutorial, reading assignments and relevant research papers using university online library will be considered to enrich the scope of the course.
3- Increasing the use of IT or web-based reference material
4- Working on updating the objectives of the course and the scientific content as required.

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

Course Description:
Theoretical:
Oscillations, fluid mechanics, Elasticity, wave motion, Acoustic Phenomena, Temperature, quantity of heat, thermal Expansion, Heat transfer, Thermal capacity, Reflection, Refraction, Images from planes and spherical mirrors and surfaces. Images from lenses.

Lab:
Determination of viscosity by falling ball method, Determination of surface tension by a capillary tube, Determination of velocity of sound waves in air, Determination of specific heat of a liquid by a method cooling, Hooke's law, Determination of specific heat of a solid, Determination of thermal conductivity, Determination of melting point, Determination of atmospheric pressure, Determination of electrical equivalent of heat.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Revision of Physics 101 Basic concepts of physics	1	3

Equilibrium and Elasticity Equilibrium, the requirements of equilibrium, the center of gravity, Elasticity, Tension and compression ,shear and hydraulic Stress, Problems	2	3
Fluids Definition of fluid, density and pressure, fluid at rest, pressure measuring, Pascal's principle and applications, Archimedes principle and Applications, Ideal fluid in motion and Bernoulli's equation	3	3
Oscillations Oscillatory motion, simple harmonic motion, velocity, acceleration and force law for SHM, Energy in SHM, Examples of SHM, SHM and uniform circular motion, Damped SHM, forced oscillations and resonance	4	3
Waves-I Types of waves transverse and longitudinal waves, waves variables, Speed of travelling waves, wave speed on stretched string, energy and power of a wave along stretched string	5	3
Waves-I The wave equation, Superposition of the waves, Interference of the waves, Phases, Standing waves, reflections at a boundary, Standing wave and resonance	6	3
Revision + Mid Term Exam	7	3
Waves-II Sound waves, Speed of sound, travelling sound waves, Interference, Intensity and sound Level, Sources of musical sound, Beat and Doppler effects	8	3
Temperature , Heat and Thermodynamics Temperature, the zeroth law of thermodynamics, Measuring temperature, the Celsius and Fahrenheit scales, thermal expansion, temperature and heat,	9	3
Temperature , Heat and Thermodynamics The absorption of heat by solids and liquids, Specific Heat, Heat of transformation, Heat and work	10	3
Midterm Exam	11	1
Temperature , Heat and Thermodynamics The first law of thermodynamics, some specific cases of first law, Heat transfer mechanisms: Conduction, convection and thermal radiation	12	3
Images Two types of images, real and virtual image, a common mirage, Plane mirror, mirror maze, spherical mirrors, Images from spherical mirrors and thin lenses	13	3
Interference Light as a wave, Huygen's principle, Law of reflection, wavelength and law of refraction.	14	3
Revision + Problem solving	15	3

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45 hr					45 hr
	Actual	45 hr					45 hr

Credit	Planed	3					3
	Actual	3					3

3. Additional private study/learning hours expected for students per week. 12 h

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	**Students completing this course will able to :** understand the basics of some untouched topics like, equilibrium and elasticity.	- Introductory lecture about the significant of the course and the topics to be covered	quiz
1.2	understand the theoretical basis of Fluid, Pascal's law and Archimedes principle applied to fluid, ideal fluid flow etc.	Learn to use the library in the self-learning fashion.	Quiz and exams
1.3	Know to handle the problems in fluid flow based on continuity equation and Bernoulli's equation -Good grasp of the knowledge about Waves, Oscillations	Assigning home works and small projects to the student with the extent of his knowledge of the knowledge gained	Grading homework assignments
1.4	Get knowledge about temperature its measurements , heat transfer and laws of thermodynamics	Research related to the course request from the library and the Internet.	Regular attendance
2.0	**Cognitive Skills**		
2.1	Solve problems	Encourage students to use computer technology and internet to get access to the course material.	quiz

2.2	Using discussion, Lessons, examples and illustrations to demonstrate the difference among topics	Link between theoretical and applied knowledge. - Open discussion amongst students under the supervision of their instructor.	Quiz and exams
2.3	Differentiate between waves and oscillations	Students are encouraged to read of the assigned materials before each class.	quiz
2.4	Relates so many physical Problems like pressure and temperature measurement in our day to day life.	Taking feedback after completion of every chapter to identify the weaknesses areas.	quiz
3.0	**Interpersonal Skills & Responsibility**		
3.1	Directing the student to self-learning and greater knowledge in the field of course	Solving problems in groups during tutorial	quiz
3.2	Tutorial Classes.	Give students projects on topics related to the subject	Quiz and exams
3.3	Encourage students to think critically and involve in discussions with the instructor in classroom.	Give students critical thinking questions	Grading homework assignments
3.4	Oral presentations on related topics will be held in class weekly	Encouraging students to communicate among themselves under instructor guidance.	Regular attendance
3.5	Work independently and as part of a team.	Encouraging students to perform a collaborative projects on topics related to the subject	quiz
4.0	**Communication, Information Technology, Numerical**		
4.1	Develop the scientific language skills	To use computer technology to get access to the course material.	Marks for student's presentation using power point

		- Using simple language while conducting lessons	
4.2	Develop communication skills with others via websites or e-mail	Using technical words while teaching so that students can get acquainted with scientific terms.	Giving students practical skills necessary to implement the laboratory activities.
4.3	Using online library and internet in searching for literature paper related to the subject	Equipped Teaching rooms and laboratories with educative tools (illustrative pictures, photos ...)	Giving students the ability to choose, describe, and find differences, and understanding of the scientific terms and the link between theoretical and applied knowledge.
4.4	Communicate with other students as well as other faculty members.	Encourage students to seek help from specialists in the information technology center.	Appropriate technical terms should be used while answering students' questions
5.0	**Psychomotor (not applicable)**		
5.1	NA		

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Student's participation, homework assigned questions, and evaluation	15	10%
2	midterm tests	11	25%
3	Practical exam	14	25%
4	- Final examination (40%).	16	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) 2- Students can approach during the office hours for the faculty member to ask questions to clarify some points missed during the lecture. 3- Students can communicate with the teaching staff through the website and ask questions related to all aspects of the lesson. The students will get written answers as soon as possible, The teaching staff are available during all the day in the faculty and are ready to clarify any points related to the course. 4- The teaching staff are available during all the day, where they are ready to clarify any points related to the course.

E Learning Resources

1. List Required Textbooks Fundamental of Physics by Resnick, Halliday and Walker, 8th Edition, Wiley India Pvt. Limited, 2008
2. List Essential References Materials (Journals, Reports, etc.) General Physics, Volume I, by Douglas C. Giancoli, Prentice-Hall.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. http://www.freebookcentre.net/electrodynamics/
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. CDs accompanied with the text book and essential references

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) - Classrooms ready and equipped with educational media - Labs equipped with material for teaching chemistry
2. Computing resources - Data show and internet.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) - Video cameras linked to TV circuits

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- Regular evaluation of the theoretical and practical parts of the course to identify the weaknesses areas - Performance appraisal form filled up by each student to show level of fulfilment - Confidential completion of standard course evaluation questionnaire
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department - A statistical regular review and analysis of the students' achievement in the department. - Prepare a questionnaire which should be filled by the students at the end of the term. The questionnaire should be after that analyzed and carefully studied.
3 Processes for Improvement of Teaching - Provide training and workshop opportunities for the teaching staff to improve their teaching strategies. - Form committees to follow up progress and work on improvement. - Provide opportunities to improve academic courses and research through conferences. - Provide the teaching staff members with all the references and electronic resources. - Updating through more reading books and articles related to the course - Improve relations between instructor and students.

4. Processes for Verifying Standards of Student Achievement (eg. 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) - Check marking of the answer sheets of examination papers with other colleagues - Check progress level of the students (this can be done by an independent teacher by reviewing students' records and compare the students' work with another from a different institute).
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Student's feedback on the quality of the course. - Consulting other faculty members or collaborators in overseas universities for their views on the method of quality of improvement - Check other universities web sites to compare our lectures with them - Compare the syllabus with the syllabus of standard universities. - Form a specialized committee from the department to review the progress of teaching and update the resources - Consult distinguished students and discuss with them positive and negative points in Lectures.

Name of Course Instructor: ____ Taha A Hanafy
Signature: __ TA Hanafy __ Date Specification Completed: 17/4/2019

Program Coordinator: Dr. Fahad Alharbi
Signature: Dr. Fahad Alharbi Date Received: 19/4/2019