

T6. Course Specification (CS)

Institution: Najran University	Date : Second semester/2017 (1438)
College/Department: Science & Arts Faculty / Physics	

A. Course Identification and General Information:

1. Course title and code : Introduction to physics (101 phys-4)			
2. Credit hours :3theoretical +1practical			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
Physics Program, chemistry Program and mathematics Program.			
4. Name of faculty member responsible for the course: Dr /Heba Mohamed &Dr Hateem Omer			
5. Level/year at which this course is offered : first level/ first year (Physics Program- mathematics Program.) second level/ first year (Chemistry Program)			
6. Pre-requisites for this course (if any) : Nothing			
7. Co-requisites for this course (if any) :Nothing			
8. Location if not on main campus :			
This course is offered in both males and females division			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom		What percentage?	
b. Blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage ?	<input type="text" value="100"/>
c. e-learning	<input type="checkbox"/>	What percentage ?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments :NO Comments			

B. Objectives الأهداف

1. What is the main purpose for this course? Provide students with information to support the study of physics courses at higher levels. Student training of making lab experiments which serve theories included in the course .Develop their numerical skills and make them deal effectively with others and take responsibility.
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) <ul style="list-style-type: none"> • Convert course to the electronic form and put it on professor's page on the website of the university. • Increasing the use of modern references and the World Wide Web through a student research. • Review of laboratory experiments and add new experiments to apply most laws and theories included in course

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

Course Description :

The course includes basic concepts of physics such as vectors, fluid properties, flow, heat, static and mobile electricity, sound and light. It also includes a number of practical experiments covering all basic concepts.

1. Topics to be Covered :		
List of Topics	No. of Weeks	Contact Hours
Theoretical part		
Mechanics: the basic units - derived units. standard and vectors quantities – add and subtract vectors – dot and vector multiplication - examples and applications. displacement - Speed – Acceleration - Movement types and equations of motion - movement of the body with constant acceleration in a straight line – Newton's laws – friction. work - kinetic energy - potential energy - the potential energy in the spring	6	18

Electricity : charge - Coulomb's law - electrostatic field and the intensity of electric field - voltage - resistance and resistivity – Connecting of resistances and capacitors	2	6
Light : the nature of light - the phenomenon of reflection and refraction - a laws of mirrors and thin lenses - optical devices - a microscope and thin lenses	3	9
Temperature: Temperature and methods of its measurement - thermal phenomena and their applications - specific heat and the amount of heat - heat transfer	1	3
Properties of material: Surface tension : the phenomenon of surface tension - the phenomenon of wetting - the pressure difference in the liquid drops and gas bubbles. Viscosity Index - Stokes law - the fall of the ball in a viscous liquid and determination of a coefficient of viscosity. : Stress - Strain – modulus of flexibility - Hooke's law - the proportion of Boisoan. types of flow - a relationship of continuity - Bernoulli equation and its applications.	3	9
Practical part		
Introductory lecture	1	2
Introduction to computational and laboratory errors	1	2
Vernier caliper	1	2
Micrometer caliper	1	2
Spherometer	1	2
Determination of the power of convex lens	1	2
Determination of the power of concave lens	1	2
Determination of the power of concave mirrors	1	2
Determination of the acceleration Due to gravely by means of Simple Pendulum	1	2
Verification of Hooke's law	1	2
Verification of Ohm's Law	1	2
Determination latent heat of melting ice	1	2
Determination a coefficient of viscosity of liquid	1	2
Review to the experiences during the semester	1	2
Test of practical part	1	2

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

	Lecture	Tutorial	Laboratory or studio	Practical	Other:	Total
Contact Hours الساعات الفعلية	45	----	30	-----	-----	75
Credit الوحدات المعتمدة	3	----	1	-----	-----	4

3-Additional private study/learning hours expected for students per week 4hr/week= 60 /semester

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

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge :		
1.1	Define all Definitions contained in chapters: Mechanics, electricity, light, heat , properties of material.	Lecture dialogue and discussion	midterm and final exams
1.2	State the basic principles and theories contained in chapter: Mechanics, electricity, light , heat , properties of material	Lecture dialogue and discussion	midterm and final exams + assignment
2.0	Cognitive Skills		

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
2.1	Interpret theories and facts contained in chapter: Mechanics, electricity, light , heat , properties of material	Lecture dialogue and discussion	midterm and final exams
2.2	Drive the laws and equation in chapter Mechanics, electricity, heat , properties of material	Lecture dialogue and discussion	midterm and final exams
2.3	Solve problems on laws and equations contained in chapter Mechanics, electricity, heat , properties of	Lecture dialogue and discussion	midterm and final exams + assignment
2.4	Analyze experimental results and quantitative data in interpretation some physical facts and theories included in course during practical part	Lecture dialogue and discussion	-Practical exams
3.0	Interpersonal Skills & Responsibility		
3.1	Express his /her opinion and accept the opinions of others	Active learning Cooperative learning	Observation card
3.2	Take responsibility and participate effectively as a team member	Active learning Cooperative learning	Observation card
4.0	Communication, Information Technology, Numerical		
4.1	Student should be able to Demonstrate effective Communicate with the others.	Active learning Cooperative learning	Observation card
4.2	Student should be able to Research by using Information Technology and analyze numerical values to get information behind them	Active learning Cooperative learning	Observation card
5.0	Psychomotor		
5.1	Not applicable		
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, Quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm exam for practical part	9 th week	10

2	Midterm exam for theoretical part	12 th week	20
3	Assignment	During semester	5
4	Final exam of practical part	16 th week	15
5	Final exam of theoretical part	18 th week	50

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 office hours per a week
 - The instructor will generally be available after lectures times during official working hours for extra help.
 - The instructor will generally be available at Blackboard forum for extra help.

E. Learning Resources

1. List Required Textbooks :
(اساسيات الفيزياء تأليف بوش وجيرد ترجمة د. سعيد الجزيري و د. محمد امين سليمان مراجعة د. احمد فؤاد باشا
الدار الدولية للاستثمارات الثقافية الطبعة الأصلية 2005)
2. List Essential References Materials (Journals, Reports, etc.)
 - University physics by Crummett and Western 1994 Wm.C.Brown publishers Physics/
David Halliday and Resnick
 - Handbook of Particle Physics by M.K. Sundaresan, 1st Edition, CRC Press, 2001.
3. List Electronic Materials Web Sites, Facebook, Twitter, etc.

<http://sciencebooksonline.info/physics.html>
4. 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.)
 - Class room can accommodate up to 60 students equipped with all IT equipments - connected to the Internet.
 - Laboratory accommodate up to 60 students equipped with modern experiments.

2. Computing resources (AV, data show, Smart Board, software, etc.)

- Number of computers connected to the Internet to help the students in self-learning.
- Data show
- Class room equipped with smart board

<ul style="list-style-type: none"> laboratories equipped with modern computers, the Internet and computerized experiments.
<p>3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list).</p> <ul style="list-style-type: none"> Computer programs to simulate some laboratory experiments. Update some older components used in practical experiments.

G. Course Evaluation and Improvement Processes:

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> University online questionnaire evaluation of course by students.
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the department.</p> <ul style="list-style-type: none"> Course report at the end of semester. Evaluate the course portfolio
<p>3. Processes for Improvement of Teaching:</p> <ul style="list-style-type: none"> Use of modern strategies in teaching. Develop and add some laboratory experiments Improve teaching through feedback from student's questionnaire (on the university Web site) Attending workshops and training courses for the development of teaching skills and strategies used in modern education Keeping up to date with refereed articles and books related to the topics of the course.
<p>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)</p> <ul style="list-style-type: none"> Use the system of measure learning outcomes to verify students' familiarity with targeted learning outcomes(KPI) Drawing the results of the students in course in consecutive semesters to make comparison between them Annual course report.
<p>5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :</p> <ul style="list-style-type: none"> Study and compare the results of the students in course Guided by the students feedback about the effectiveness of the course material through student's questionnaires Continues development of teaching methods and student participation Review and update the course to fulfill the needs of the labor market Study of the proposals submitted by professors have experience in teaching the course Using feedback from rotating Evaluation of course and performance of a faculty

member in Development plans

- Update learning resources for the course regularly using the Internet
- Consult with other faculty member who is teaching the same course Update the content of the course in line with recent developments in the field

Name of instructor :

Dr /Heba Mohamed Dr /Heba Mohamed &Dr Hateem Omer

Signature : _____ **Date Report Completed: Second semester/2017 (1438)**

Name of field experience teaching staff: _____

Program coordinator _____

Signature: _____ **Date received: 5/2017**