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

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Al Yamamah University	Date: March 4, 2018
College/Department : Computer and Information Systems / Mathematics and Natural Sciences	

A. Course Identification and General Information

1. Course title and code: Physics II - PHY203
2. Credit hours: 3+1=4
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
   1. Bachelor of Engineering in Network Engineering and Security
   2. Bachelor of Science in Software Engineering
   3. Bachelor of Science in Industrial Engineering and Architecture
4. Name of faculty member responsible for the course: Dr. Radi Al Enaizi
5. Level/year at which this course is offered: Level 1/ First Year & Level 2/ Second Year
6. Pre-requisites for this course (if any): PHY103, ORN04R
7. Co-requisites for this course (if any): None
8. Location if not on main campus: None
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	√	What percentage?	25

Comments: The other 25% is conducted in the laboratory

B Objectives

1. What is the main purpose for this course?

The course provides the students with the principals and applications of basic electric and electronic circuits and devices. The student will have experience to develop and enhance problem-solving skills, critical thinking skills, graphical analysis, data collection and interpretation.

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)

- We use LMS (Learning Management System). -
Refer students to related web sites.

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

Course Description:

Study of the basic laws of electrostatics, current electricity, magnetic effect of current, electromagnetic induction, alternating current, electromagnetic induction, semi-conductors, PN Junction, diode of different types, transistors of different types, working of transistors in different configurations, logic gates using diodes and different types of transistors, operational amplifiers: their types, modes of operations and applications.

1. Topics to be Covered

Week	List of Topics	No of Weeks	Contact hours
1.	Electric charge, The electric current, Insulators and conductors, Coulomb's law, Point charge, The potential of point charges	1	3
2.	The electric field, Electric field of multiple point charges, Electric potential, The electric potential of many charges	1	3
3.	Capacitor and Capacitance, Energy stored in a capacitor, The parallel plate capacitor	1	3
4.	Fundamental circuits, Ohm's law, Series resistors, Parallel resistors, Batteries, Conductivity and resistivity	1	3
5.	Kirchhoff's laws, RC circuits, Magnetism and magnetic force, source of magnetic fields, inductors, LC circuits, LR circuits, AC circuits and phasor	1	3
6.	Capacitors in AC circuits, RC filter circuits, Inductor circuits, The RLC circuits, Power in AC circuits	1	3
7-9	Semi-conductors, PN Junction, diode in different types of operations.	3	9
10-12	Transistors of different types, working of transistors in different configurations, logic gates using diodes and different types of transistors.	3	9
13-14	Operational Amplifiers	2	6
15	Revision	1	3

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

		Lecture	Tutorial	Laboratory / Studio	Practical	Other:	Total
Contact Hours	Planed	45		30			75
	Actual	45		30			75
Credit	Planed	3		1			4
	Actual	3		1			4

3. Additional private study/learning hours expected for students per week. 5

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** After successful completion of the course students will be able to		
1.1	Define the basic characteristics, laws of electricity, and magnetism,	Class room activities. Exercises and Group Discussions Lab demonstration	Home works Quizzes Exams Lab. Reports In-lab evaluation
1.2	Describe the operations of electric circuits, semiconductors, transistors, and operational amplifiers.		
2.0	**Cognitive Skills** After successful completion of the course students will be able to		
2.1	Explain and summarize the basic knowledge gained from studying Electricity and Magnetism course.	Class room activities. Exercises and Group Discussions Lab demonstration	Home works Quizzes Exams Lab. Reports In-lab evaluation
2.2	Apply the knowledge and problem-solving about - Law of electricity and Magnetism - Electric circuits - Semi-conductors and PN junctions.		
3.0	**Interpersonal Skills & Responsibility** After successful completion of the course students will be able to		
3.1	Use team work to conduct: - Lab experiments. - Write laboratory reports relate the experiments.	Lab demonstration Group discussion	In-lab evaluation Lab. Reports Exams
3.2	Demonstrate the electromagnetism applications in realistic life.		

4.0	**Communication, Information Technology, Numerical** After successful completion of the course students will be able to		
4.1	Team working skills: cooperative working in groups inside the class, or/and efficient participation in take-home-assignments.	Group discussion Exercises Class room activities Lab demonstration	Home works Quizzes Exams Lab. Reports In-lab evaluation
4.2	Calculate numerical problems related to the physics topics covered by the course.		
5.0	**Psychomotor**		
5.1	NA	NA	NA

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)**								
	1.1	**1.2**	**1.3**	**2.1**	**2.2**	**3.1**	**3.2**	**3.3**	**4.1**	**4.2**
1.1	X	X	-	X	-	-	-	-	-	-
1.2	X	X	-	X	X	-	-	-	-	-
2.1	X	X	-	X	X	-	-	X	-	X
2.2	-	-	-	X	X	-	-	-	-	X
3.1	-	-	-	X	X	X	X	X	X	X
3.2	-	-	-	X	X	-	-	X	-	-
4.1	-	-	-	-	-	X	X	-	-	X
4.2	-	-	-	X	-	-	-	-	-	X

6. 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	First Homework	4	6%
2	First Quiz	5	6%
3	Second Homework	7	6%
3	Mid – Term Exam	8	15%
4	Second Quiz	12	6%
5	Third Quiz/Homework	14	6%
6	Lab work	15	25%
7	Final Exam	16	30%

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 Members have around 10 office hours every week for student consultations.

E Learning Resources

1. List Required Textbooks Conceptual physical science Paul G. Hewitt, John A. Suchocki, Leslie A. Hewitt; Pearson Education; 6th Edition; (2017)
2. List Essential References Materials (Journals, Reports, etc.) – Physics for scientists and engineers; Raymond A. Serway and John W. Jewett; Cengage Learning; 9th edition; (2013) – College Physics; Raymond A. Serway and Chris Vuille; Cengage Learning; 9th edition; (2011). – Physics: Principles with Applications, Douglas C. Giancoli, 7th global Edition, 2016 Pearson Education, Ltd.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. • http://demonstrations.wolfram.com • http://askthephysicist.com • http://cyberphysics.co.uk
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. NA

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.) Classrooms and laboratory
2. Technology resources (AV, data show, Smart Board, software, etc.) Data Show/Smart board
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) As required/recommended by the instructor

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching At the end of the course, students receive feedback forms designed as per guidelines of NCAAA that are used to evaluate the effectiveness of teaching.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department Peer review visits are normally conducted among faculties wherever possible during academic year. During the lecture time Chair (Head)/ Dean of the department visits the classroom. At the end of each visit, faculties are usually set together to discuss related issues
3. Processes for Improvement of Teaching - Feedbacks from students using different types of survey including Student Experience Survey (SES), Program Evaluation Survey (PES), and Alumni Survey (AS) are shown and discussed with faculty members to improve the teaching. - Specialized workshops and seminars are conducted throughout academic year to address specific

teaching strategies and improvements.
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) Peer review and discussion with course coordinator. There should be a strong liaison with teacher from some external university/institute in order to exchange ideas related to marking/ evaluating quizzes and assignments
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. At the end of each semester, Curriculum committee conducts a meeting with all faculty members in which surveys filled by the students and other feedbacks from faculty members are discussed. Effectiveness of the courses, mistakes done and weaknesses are discussed. These points are made basis for the planning for improvements for next semester/year.

Name of Course Instructor: Dr. Radi Al Enaizi Signature: _____
Date Specification Completed: March 4, 2018
Program Coordinator: Dr. Sadiqah Al Marzooq Signature: _____
Date Received: _____