ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Al Yamamah University	Date: November 17, 2018
College/Department : Computer and Information Systems / Mathematics and Natural Sciences	

A. Course Identification and General Information

1. Course title and code: PHY 101 - Introduction to Physical science
2. Credit hours: 3
3. Program(s) in which the course is offered.
   - Network Engineering and Security
   - Software Engineering
   - Industrial Engineering
4. Name of faculty member responsible for the course: Ms.Meher Sultana Afshan
5. Level/year at which this course is offered: Academic Year one/freshman' year
6. Pre-requisites for this course (if any): 04-R / English Reading Skills
7. Co-requisites for this course (if any): None
8. Location if not on main campus: Main Campus
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

This course will introduce students to Physical Sciences, especially in the discipline of Physics and Chemistry. It is an introductory course designed to explore the basic concepts of Physical Science. The course includes an introduction to the fundamental concepts of Physics and Chemistry. Students will be encouraged to explore the relationship between science and everyday life. This course will provide opportunities to study the concepts of matter, energy, speed, velocity, acceleration, static and current electricity, metals ,nonmetals, efficiency, periodic table and forces and their application through investigations and activities that develop thinking skills and independent thinking. This course will establish a base with which the non-science student can view nature more perceptively.

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:

This three-credit course is designed for all YU orientation students. Topics include equations, scientific method, variables, accuracy and precision, graphs application mechanics, Newton's laws, potential &kinetic energy, static electricity, thermal energy transfer, colors and periodic table.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
- Science. - Scientific Method & its Application - Variables: Independent &Dependent variables & Control variables. - Theory & Law - Taking measurements - Accuracy & Precision - Errors: Order of magnitude, Estimation, Significant figures - Types of errors - Graph: Interpretation of different types of graphs	2	6
- Kinematics of Motion - Displacement - Speed & Velocity: Average-Instantaneous - Acceleration: Average-instantaneous - One Dimensional Motion via Algebra-Geometry-Calculus	2	6
- Newton's Laws of Motion - First law-Law of inertia - Second law-Law of acceleration - Third law-Law of interaction - Application of all 3 laws -	1	3

- Momentum & Energy - Momentum and Impulse - Impulse Changes Momentum - Conservation of Momentum: Collisions(Elastic and Inelastic) &Kinetic energy	2	6
- Energy - Types of energy, Work energy theorem - Conservation of energy, Efficiency, Sources of Energy, - Mechanical Energy: Kinetic and Potential energy	2	6
- Heat Transfer & Change of Phase - Basic concepts of Heat energy - Changes of phase and Latent heat - Temperature-Heat Graph - Methods of heat transfer: Conduction, Convection, Radiation	2	6
- Fluid Mechanics (Static) - Density & Pressure - Pressure & Buoyancy in a liquid - Atmospheric pressure - Archimedes' principle	1	3
- Electric charge, Coulomb's law, Electric field - Electric potential, Ohm's law, Electric circuits	1	3
- Elements. - Mixtures. - Chemistry-The central science. - Physical & Chemical properties. - Physical & Chemical changes. - Heterogeneous & Homogenous mixtures. - Solution: Dilute & Concentrated.	2	6
Total	15	45

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

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

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	Recognize: - Fundamental concepts. - Principles & Techniques in Physical sciences	Formal lectures Group discussion Exercises Class room activities	Home works Quizzes Exams Class participation
1.2	Describe: - Different types of energy and matter		
2.0	**Cognitive Skills** After successful completion of the course, students will be able to		
2.1	Develop scientific method	Formal lectures Group discussion Exercises Class room activities	Home works Quizzes Exams Class participation
2.2	Interpret a graphical data and extract information from graph		
2.3	Evaluate Data from scientific investigation and use some related concepts to solve speed, velocity and acceleration problems.		
2.4	Analyze the parameters of motion graphically.		
3.0	**Interpersonal Skills & Responsibility** After successful completion of the course, students will be able to		
3.1	N/.A	N/A	N/A.
4.0	**Communication, Information Technology, Numerical** After successful completion of the course students will be able to		
4.1	Calculate numerical problems related to: - Speed velocity and acceleration - Momentum and impulse - Potential &Kinetic energy - Ohms law & Combination circuits	Formal lectures Group discussion Exercises Class room activities	Home works Quizzes Exams
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	-	-	-	-	-	-	-	-	-	-
1.2	X	-	-	X	-	-	X	X	-	-
2.1	-	-	-		-	-	-	-	-	X
2.2	-	-	-	X	X	-	-	-	-	X
2.3	-	-	-	X	X	-	-	-	-	X
2.4	-	-	-	-	-	-	-	-	-	-
4.1	-	-	-	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	3	8%
2	First Quiz	5	8%
3	Mid – Term Exam	8	20%
4	Second Quiz	12	8%
5	Third Quiz/Presentation	14	8%
6	Second Homework	15	8%
7	Final Exam	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)

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

E Learning Resources

1. List Required Textbooks

Conceptual Physical Science; P. G. Hewitt, J. Suchocki, L. A. Hewitt Pearson Addison Wesley; 6th Edition; 2017.

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

1). Introduction to Physical Science-12th edition by-Shipman, Wilson, Todd Internet

2) New Physics for you Keith Johnson Edition: Nelson Thornes

3) Mechanics and Oscillations, University Physics I: Notes and exercises; Daniel Gebreselasie; Bookboon.com, 2015, ISBN 978-87-403-XXXX-X.

4) Mechanics, Thermodynamics, Oscillations and Waves, University Physics I: Notes and exercises; Daniel G.; Bookboon.com, 2015, ISBN 978-87-403-0995-9.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. https://lms.yu.edu.sa/login/index.php
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
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) NA

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: Ms,Meher Sultana Afshan' Signature: _____
Date Specification Completed: November 17, 2018
Program Coordinator: Dr. Sadiqah Al Marzooq Signature: _____
Date Received: _____