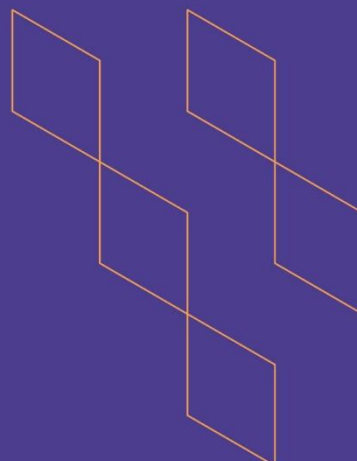




T-104  
2022

## Course Specification



|   |
|---|
| Course Title: <b>Physical Science</b>                               |
| Course Code: <b>PHSC 113</b>  |
| Program: <b>All programs in the College of Business and Tourism</b> |
| Department: <b>General Studies</b>                                  |
| College: <b>Deanship of Educational Services</b>                    |
| Institution: <b>The University of Prince Mugrin (UPM)</b>           |
| Version: <b>3</b>   |
| Last Revision Date: <b>27-3-2023</b>                                |



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## A. General information about the course:

### Course Identification

1. Credit hours: 4 credits

#### 2. Course type

a. University  College  Department  Track  Others

b. Required  Elective

3. Level/year at which this course is offered: level 3/ Second year

#### 4. Course general Description:

This course is designed to introduce business students, with non-scientific background, to the concepts and practical applications of the physical sciences, so that students get acquainted with the impact of science and technology on modern life. Introduction to basic concepts of Physics and Chemistry with selected topics from Earth Science will be covered. Topics include measurement, motion, Newton's laws of motion, momentum, energy, work, power, heat, waves, light, sound, electricity, magnetism, atoms and periodic table of element and the structure and formation of the solar system. There will be several demonstrations and lab experiments that will enforce the student learning during the semester.

5. Pre-requirements for this course (if any):

6. Co- requirements for this course (if any):

#### 7. Course Main Objective(s)

This course has been designed carefully to allow students to meet the following objectives:

1. Demonstrate basic understanding of the physical environment.
2. Apply the scientific principles to explain simple physical concepts.
3. Develop the ability to use critical and logical thinking.
4. Being familiarized with basic Physical terms in the English language.
5. Develop computational and problem-solving skills.
6. Use graphical analysis to extract useful information from graphs.
7. Develop sensitivity to the impact of science on the social and economic parts of our life.



### 1. Teaching mode (mark all that apply)

| No | Mode of Instruction  | Contact Hours | Percentage |
|----|--|---------------|------------|
| 1. | Traditional classroom  | 75            | 83%        |
| 2. | E-learning   | 15            | 17%        |
| 3. | Hybrid <ul style="list-style-type: none"> <li>• Traditional classroom</li> <li>• E-learning</li> </ul> |               |            |
| 4. | Distance learning  |               |            |

### 2. Contact Hours (based on the academic semester)

| No | Activity          | Contact Hours |
|----|-------------------|---------------|
| 1. | Lectures          | 45            |
| 2. | Laboratory/Studio | 45            |
| 3. | Field             |               |
| 4. | Tutorial          |               |
| 5. | Others (specify)  |               |
|    | <b>Total</b>      | <b>90</b>     |



## B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes  | Code of CLOs aligned with ACCT/FIN program | Teaching Strategies   | Assessment Methods  |
|------|---|--|---|---|
| 1.0  | By the end of this course, students will be able to.....<br>Knowledge and understanding                                     |  |   |   |
| 1.1  | Recognize the difference between temperature and heat.  |  | <ul style="list-style-type: none"> <li>• Watching presentations and videos</li> <li>• Reading materials</li> <li>• Memory activates</li> </ul>  | <ul style="list-style-type: none"> <li>• Fill in the blanks</li> <li>• Label</li> <li>• Match</li> <li>• Multiple choice</li> <li>• Numerical problems</li> <li>• True and false questions</li> </ul> |
| 1.2  | Describe different types of mechanical and electromagnetic waves including light properties like reflection and refraction. |  | <ul style="list-style-type: none"> <li>• Watching presentations and videos</li> <li>• Reading materials</li> <li>• In class Peer discussion</li> <li>• Case studies</li> <li>• Demonstration</li> </ul> | <ul style="list-style-type: none"> <li>• Fill in the blanks</li> <li>• Label</li> <li>• Match</li> <li>• Multiple choice</li> <li>• Numerical problems</li> <li>• True and false questions</li> </ul> |
| 1.3  | Identify elements, compounds, components of atoms and chemical bonds.   |  | <ul style="list-style-type: none"> <li>• Watching presentations and videos</li> <li>• Reading materials</li> <li>• Memory activates</li> </ul>  | <ul style="list-style-type: none"> <li>• Fill in the blanks</li> <li>• Label</li> <li>• Match</li> <li>• Multiple choice</li> <li>• Numerical problems</li> <li>• True and false questions</li> </ul> |
| 1.4  | Describe the structure and evolution of the solar system.   |  | <ul style="list-style-type: none"> <li>• Watching presentations and videos</li> <li>• Reading materials</li> <li>• In class Peer discussion</li> </ul>  | <ul style="list-style-type: none"> <li>• Fill in the blanks</li> <li>• Label</li> <li>• Match</li> <li>• Multiple choice</li> <li>• Numerical problems</li> </ul>                                     |



| Code | Course Learning Outcomes   | Code of CLOs aligned with ACCT/FIN program | Teaching Strategies   | Assessment Methods   |
|------|--|--|---|--|
|      |  |  | <ul style="list-style-type: none"> <li>Case studies</li> <li>Demonstration</li> </ul>   | <ul style="list-style-type: none"> <li>True and false questions</li> </ul>   |
| 2.0  | Skills   |  |   |  |
| 2.1  | Solve simple problems related to the basic Newton's laws and mechanics.                    |  | <ul style="list-style-type: none"> <li>Problem-solving tasks</li> <li>Group work on exercises</li> <li>Demonstration</li> <li>Case studies</li> <li>Lab experiment</li> <li>Feedback on written work</li> <li>In class Peer discussion</li> <li>simulation</li> </ul> | <ul style="list-style-type: none"> <li>Problem-solving tasks</li> <li>Short answers</li> <li>Presentation</li> <li>Lab reports</li> <li>Practical lab exam</li> <li>Graded class discussions</li> <li>Multiple choice</li> </ul> |
| 2.2  | Solve problems using the laws of conservation of momentum and energy.                      |  | <ul style="list-style-type: none"> <li>Problem-solving tasks</li> <li>Group work on exercises</li> <li>Demonstration</li> <li>Case studies</li> <li>Lab experiment</li> <li>Feedback on written work</li> <li>In class Peer discussion</li> <li>simulation</li> </ul> | <ul style="list-style-type: none"> <li>Problem-solving tasks</li> <li>Short answers</li> <li>Presentation</li> <li>Lab reports</li> <li>Practical lab exam</li> <li>Graded class discussions</li> <li>Multiple choice</li> </ul> |
| 2.3  | Apply the basic principles and Laws of electricity and magnetism to solve simple problems. |  | <ul style="list-style-type: none"> <li>Problem-solving tasks</li> <li>Group work on exercises</li> <li>Demonstration</li> <li>Case studies</li> <li>Lab experiment</li> <li>Feedback on written work</li> <li>In class Peer discussion</li> <li>simulation</li> </ul> | <ul style="list-style-type: none"> <li>Problem-solving tasks</li> <li>Short answers</li> <li>Presentation</li> <li>Lab reports</li> <li>Practical lab exam</li> <li>Graded class discussions</li> <li>Multiple choice</li> </ul> |
| 2.4  | Use basic laboratory equipment to verify basics physics laws through                       |  | <ul style="list-style-type: none"> <li>Group work on exercises</li> <li>Demonstration</li> <li>Lab experiment</li> </ul>  | <ul style="list-style-type: none"> <li>Oral and short answers questions</li> <li>Lab reports</li> </ul>  |



| Code | Course Learning Outcomes                                     | Code of CLOs aligned with ACCT/FIN program | Teaching Strategies  | Assessment Methods  |
|------|--|--|--|---|
|      | measurements and data analysis.                              |  | <ul style="list-style-type: none"> <li>Feedback on written work</li> <li>In class Peer discussion</li> <li>simulation</li> </ul>     | <ul style="list-style-type: none"> <li>Practical lab exam</li> </ul>  |
| 3.0  | Values, autonomy, and responsibility                         |  |  |   |
| 3.1  | Demonstrate teamwork strategies in collaborative activities. | ACCT PLO V3<br>FIN PLO V3                  | <ul style="list-style-type: none"> <li>Present in front of the audience</li> <li>Group discussion</li> <li>Group projects</li> </ul> | <ul style="list-style-type: none"> <li>Attendance</li> <li>Neatness and carefulness (with minimal errors) of submitted work.</li> <li>Meet deadlines.</li> <li>Proposals of new plans</li> <li>Questionnaire</li> <li>Rating scale</li> <li>Reflection piece</li> </ul> |

## C. Course Content

| No    | List of Topics   | Contact Hours |
|-------|--|---------------|
| 1.    | Measurements, Motion and Newton's laws of motion.  | 9 (3 weeks)   |
| 2.    | Momentum, energy, work, power and heat.  | 9 (3 weeks)   |
| 3.    | Waves, light, sound, electricity and magnetism.  | 15 (5 weeks)  |
| 4.    | Atoms and periodic table of element and structure and the formation of the solar system. | 12 (4 weeks)  |
| Total |  | 45 (15 weeks) |





## D. Students Assessment Activities

| No | Assessment Activities *                   | Assessment timing (in week no) | Percentage of Total Assessment Score |
|----|---|--------------------------------|--------------------------------------|
| 1. | Homework                                  | Weekly                         | 10%                                  |
| 2. | Class work (Attendance and participation) | continuous                     | 10%                                  |
| 3. | Lab report                                | Weekly                         | 10%                                  |
| 4. | Quizzes                                   | Every two weeks                | 10%                                  |
| 5. | Midterm                                   | 8th                            | 15%                                  |
| 6. | Final Lab Exam                            | 15th                           | 10%                                  |
| 7. | Final Exam (Written)                      | 16th                           | 30%                                  |
| 8. | Project or presentation                   | continuous                     | 5%                                   |
|    | Total                                     |                                | 100%                                 |

\*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

## E. Learning Resources and Facilities

### 1. References and Learning Resources

|                          |  |
|--------------------------|--|
| Essential References     | Conceptual Physical Science: by P. Hewitt, J. Suchocki, L. A. Hewitt, Pearson, 5th edition<br>ISBN-13: 978-0321804198, ISBN-10: 0321804198 |
| Supportive References    | Physical Sciences: by Bill W. Tillery, 9th edition, ISBN-13: 978-0077263133, ISBN-10: 0077263138.  |
| Electronic Materials     | Power point slides   |
| Other Learning Materials |  |

### 2. Required Facilities and equipment

| Items  | Resources   |
|--|---|
| facilities<br>(Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | Lecture room (max 30 students)<br>Physics lab (max 20 students) |
| Technology equipment<br>(projector, smart board, software)                         | Smart Board<br>Microsoft team and Form                          |
| Other equipment<br>(depending on the nature of the specialty)                      |   |







## F. Assessment of Course Quality

| Assessment Areas/Issues                     | Assessor                              | Assessment Methods                |
|---|---------------------------------------|-----------------------------------|
| Effectiveness of teaching                   | Students                              | Indirect: Survey (electronically) |
| Effectiveness of students assessment        | Instructors, Head of department       | Direct: exams<br>Indirect: survey |
| Quality of learning resources               | Instructors, Head of department       | Indirect: survey                  |
| The extent to which CLOs have been achieved | Coordinator, Peer, Head of department | Direct: exams<br>Indirect: survey |
| Other                                       |                                       |                                   |

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval Data

|                    |                    |
|--------------------|--------------------|
| COUNCIL /COMMITTEE | GS COUNCIL MEETING |
| REFERENCE NO.      | AY-2022-2023-NO.4  |
| DATE               | 12/04/2023         |

