Physics for Nursing

142 PHY – 2

T6. Course specification (CS)

Institution: Najran University	Date: 26.08.1438
College/Department: Nursing / General Nursing	

A Course Identification and General Information

1. Course title and code:physics for nursing **142 PHY-2**
2. Credit hours: 2
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Nursing
4. Name of faculty member responsible for the course **Dr/ Hamed Abdallah Ismail**
5. Level/year at which this course is offered: Second level / first year
6. Pre-requisites for this course (if any): Non
7. Co-requisites for this course (if any): . Non
8. Location if not on main campus: main compus

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course: By the end of this course the students are expected to understand the basics of physics such as work, energy, heat and temperature, properties of liquids and gases, blood pressure, electricity, elasticity, motion, introduction of physics of hearing and vision, introduction of nuclear.
2. Briefly describe any plans for developing and improving the course that are being

implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field):

- The application of the basics of physics which has been studied in the course with the field of nursing.
- Follow-up of internet researches.
- Continuous updating of course content through available references, web, and latest researches
- Increased use of IT or web-based reference material.
- Include e-books

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

1 Topics to be Covered		
(theoreticaltopics)	No of Weeks	Contact hours
Measurements and units	2	2
Motion and Newton's laws of motion,	1	1
Work, energy, temperature, heat and heat effects.	2	2
Molecular phenomena related to biological process, properties of liquids and gases.	1	1
Elasticity, stress, strain and Young's modulus.	1	1
Sound (reflection, refraction), speed of sound, echo, Doppler effect.	1	1
Light, lenses, human eye, vision defects	2	2

Introduction to electricity, electric current, current intensity, potential differences, resistances and its connection.	2	2
Bio electricity and nervous system, blood pressure.	2	2
Introduction to nuclear physics.	1	1

(practicaltopics)	No of Weeks	Contact hours
Lab preparation and policy	1	2
Graph plotting	1	2
Error analysis	1	2
Powers and roots	1	2
Vernier caliper	1	2
Micrometer	1	2
Simple Pendulum	1	2
Hock's law	1	2
Light reflection	1	2
Power of mirror	1	2
Power of lens	1	2
Refractive index	1	2

Internal reflection	1	2
Ohm's law	1	2
Revision	1	2

2 Course components (total contact hours per semester):			
Lecture: 15	Tutorial:	Practical/Fieldwork/Internship: 15	Other: 15 office hours

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

2 hours per week

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

By the end of this course, students should be able to:

- Describe the types of motion and Newton's laws.
- Explain the terms of Stress- strain- Young's modulus- elastic and plastic materials.
- Explain the terms nature of sound- its reflection, echo- its refraction- factors affecting the speed of sound- Doppler effect- frequency and wavelength of sound wave.
- State the laws of reflection and refraction.
- Describe Ohm's Law and connection of resistances.
- Explain the terms decay constant, activity and half-life.

(ii) Teaching strategies to be used to develop that knowledge

Lecture- discussion- brain storming

(iii) Methods of assessment of knowledge acquired

Written exams – written assignments

b. Cognitive Skills

Cognitive skills to be developed

By the end of this course, students should be able to:

- Apply Newton's laws and Ohm's Law to solve problems
- Calculate current, potentials, and resistances for simple DC circuits.
- Solve problems using the lens-mirror equations.
- Solve problems involving half-life and the decay constant.

(ii) Teaching strategies to be used to develop these cognitive skills

Problems solving - discussion

(iii) Methods of assessment of students cognitive skills

Written exams – written assignments

c. Interpersonal Skills and Responsibility
(i) Description of the interpersonal skills and capacity to carry responsibility to be developed **By the end of this course, students should be able to:** • Work in team in lab. • Apply safety standards in the physics lab.
(ii) Teaching strategies to be used to develop these skills and abilities • Small group work
(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility • Observation.
d. Communication, Information Technology and Numerical Skills
(i) Description of the skills to be developed in this domain. **By the end of this course, students should be able to:** • Demonstrate computational skills through solving problems.
(ii) Teaching strategies to be used to develop these skills • Problems solving
(iii) Methods of assessment of students numerical and communication skills • Observation.
e. Psychomotor Skills (if applicable)
Description of the psychomotor skills to be developed and the level of performance

required

By the end of this course, students should be able to:

- Connect the electric circuits in the lab correctly.
- Operate the devices of the experiments.
- Draw graphs of experiments correctly.

(ii) Teaching strategies to be used to develop these skills

- Small group work
- Practical exercises

(iii) Methods of assessment of students psychomotor skills

- Practical exams, observations

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
3	Short quizzes	10	5%
4	Class activities	weekly	5%
5	Mid-term exams (theoretical- practical)	8	40%
6	Final exam (theoretical- practical)	End of the term	50%

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week) • Office hours arranged to the time table • Student encourage to communicate on e-mail or at office • Teacher's web page. • Exam error analysis in class • Feedback for each student

E Learning Resources

1. Required Text(s): - **University Physics (7 thedition)**. Sears, Zemansky and Young (Addison- Wesley Publishing company) -Nave and Nave, **Physics for the Health Sciences**.3rd edition 1985- W.B Saunders
2. Essential References Halliday, David, Robert Resnick, Jearl Walker. **Fundamentals of Physics, 7th ed.** Hoboken, N.J.: John Wiley and Sons. 2005.
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) - Halliday, David, Robert Resnick , and Kenneth Krane. **Physics**, Parts I and II, 5th ed. Hoboken, N.J.: John Wiley and Sons. 2001.
4-.Electronic Materials, Web Sites etc www.nu.edu.sa/supporting deanships/deanship of libraries affairs/digital library http://www.splung.com/ http://igorivanov.tripod.com/physics/physics.html www.general physics.com Electronic books.
5- Other learning material such as computer-based programs/CD, professional

standards/regulations - **Multi- media associated with the text books and the relevant websites**

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.) - Lecture room with 30 seats- smart board- data show- PC-air conditioner - Experimental laboratories with 30 seats – board.
2. Computing resources • Computer room containing at least 15 systems • Scientific calculator for each student.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) Experimental laboratories with 30 seats – board- source of water- sources of electricity- equipments and illustration tools relevant to the course material- cabinets for storage devices- tables.

G- Course Evaluation and Improvement Processes

1- Strategies for Obtaining Student Feedback on Effectiveness of Teaching • **University questionnaire evaluation of the course.** • **Evaluation by group discussions**
2 - Other Strategies for Evaluation of Teaching by the Instructor or by the Department - **Peer observing teaching** - **Questionnaire**
3- Processes for Improvement of Teaching - **Keeping a Teaching portfolio** - **Integrating the remarks of the peer observer in the process of teaching**

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) - **Annual course review- report** - **Periodic review and evaluation**
5- Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - **Study the questioners and staff remarks and student marks to obtain improvement plan.** - **Reviewing results of reports and evaluations with outside reviewers.**

Faculty or Teaching Staff: Dr. Hamed Abdallah Ismail

Signature:  Date Report Completed 26/08/1438 H

Program coordinator:

Signature: Date: