

University: Benha

Faculty: Science

Course Specifications

Programme(s) on which the course is given: **Biology & Geology**

Major or Minor element of programs: Major

Department offering the program: Biology & Geology

Department offering the course: Physics

Academic year/level: 1st year /2nd semester

Date of specification approval: 2008

A- Basic Information

Title: Properties of Matter and Heat

Code: Phy 104

Credit Hours:

Lecture: 2 hrs/week

Tutorial: 0 hrs/week

Practical: 2 hrs/week

Total: 4 hrs/week

B- Professional Information

1. **Overall Aims of Course:** By Finishing of this course the graduate will be able to know the fundamental properties of matter, dimension theory, elastic theory, hydrodynamics of blood, viscosity, heat conduction, radiation and black body radiation.

2-Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

To make the graduate able to:

- a1- Understand the properties of matter.
- a2- Understand the dimensional theory.
- a3- Study the elastic theory.
- a4- Understand something about the blood viscosity.
- a5- Know the way in which the heat is transferred.

b- Intellectual Skills

To make the graduate able to:

- b1- Exam the validity of the physical laws
- b2- Measurement the blood viscosity.
- b3- Collect, summarize and analyze the practical data.

c- Professional and Practical Skills

To make the graduate able to:

- c1 - Analyze the properties of the different materials.
- c2- Chose the prop rate material for design the devices.
- c3- Differentiate between blood and any other fluid

d- General and Transferable Skills

- d1- Use Computer
- d2- Work in groups.
- d3- Analyze results.

2. Contents

Topics	No. of hours	Lecture	Practical
Sources of heat energy	2	2	-
Kinds of thermometers	4	2	2
Quantity of heat	6	2	4
Heat transfer	8	4	4
Units and dimensions	2	2	-
Elasticity	6	2	4
Simple harmonic motion	8	4	4
Wave motion	2	2	-
Fluid dynamics and viscosity	10	4	6
Total	48	24	24

3. Teaching and Learning Methods

- 4.1- Lectures
- 4.2-Practical training
- 4.3-Class activities

4. Student Assessment Methods

- 5.1 Discussions to assess applying and evaluating the information
- 5.2 Practical to assess the acquired profession skills
- 5.3 Mid term exam to assess understanding **intellectual** skills
- 5.4 End of term exam to assess knowledge with understanding

1- Assessment Schedule

Assessment 1: Discussions	Week 1-12
Assessment 2: Essay	Week 3
Assessment 3: Mid term	Week 7
Assessment 4: Final exam	Week 14

Weighting of Assessments

Mid-Term Examination	10%
Final-term Examination	70%
Oral Examination.	10%
Practical Examination	%
Semester Work	10%
Other types of assessment	%

Total 100%

5. List of References

6.1- **Course Notes:** Lecture materials

6.2- **Essential Books (Text Books):**

Resnick, Walker; "fundamental of physics", 6th. Ed.; John Wiley & Sons Inc. 2006

6.3- **Recommended Books**

Resnick, Walker; "fundamental of physics", 6th. Ed.; John Wiley & Sons Inc. 2006

6.4- **Periodicals, Web sites:**

<http://www.hep.com>,<http://www.Physics2000>,<http://www.Physicstoday>.

6. Facilities Required for Teaching and Learning

Personal computer, data show, power point application, and experimental tool devices.

Course Coordinator: Prof. Dr.\ Nabil El-Nagar and Dr. \ Nabil Shash

Head of Department: Prof. Dr.\ L.I. Abou-Salem

Date: