

**University Benha**

**Faculty Science**

Course Specifications

Programme(s) on which the course is given : **Chem & Physics**

Major or Minor element of programmes

Department offering the programme: **Physics**

Department offering the course: **Physics**

Academic year/level **2<sup>nd</sup> year / 2<sup>nd</sup> semester**

Date of specification approval: **2008**

### **A- Basic Information**

**Title: Experimental physics**

**Code: Phy 214**

**Credit Hours:**

**Lecture: - hr/week**

**Tutorial: - hr/week**

**Practicals: 6 Total: 6 hr/week**

### **B- Professional Information**

#### **1 – Overall Aims of Course**

By Finishing of this course the graduate will be able to:

Understand the Hygenz principle, Interference, diffraction and polarization of light.

#### **2 – Intended Learning Outcomes of Course (ILOs)**

##### **a- Knowledge and Understanding:**

**To make the graduate able to:**

A1- Understand the light interference phenomena.

A2- Study the different methods of obtaining the viscosity and surface tension of a fluids.

A3- Learn different method to determine some constants in nature

A4- Learn different method to determine some properties of matter

A5- Collect, summarize and analyze the practical data.

##### **b- Intellectual Skills**

**To make the graduate able to:**

b1- understand how to use the electric devises in safety way.

b2- Collect, summarize and analyze the practical data.

b3- Reason in a any optical phenomena by a logic way.

**c- Professional and Practical Skills**

**To make the graduate able to:**

c1 - Analyze the ability of constructing different electric circutes

c2- Design the optical devices.

**d- General and Transferable Skills**

d1- Solve problems.

d2- Work in team.

d3- Wright reports

**3- Contents**

<b>Topics actually taught</b>	<b>No. of hours</b>	<b>Lecturer</b>
Abbe's Refractometer	3	Dr. Mohammed Abd Elwahab
Calabration of thermocouple	3	Dr. Mohammed Abd Elwahab
Air wedge	3	Dr. Mohammed Abd Elwahab
Compound pendulum	3	Dr. Mohammed Abd Elwahab
Lees' s Disk	3	Dr. Mohammed Abd Elwahab
Flywheel	3	Dr. Mohammed Abd Elwahab
bifilar suspension	3	Dr. Mohammed Abd Elwahab
modulus of rigidity for spring	3	Dr. Mohammed Abd Elwahab
Stivam law	3	Dr. Mohammed Abd Elwahab
Capacitance by capacitor discharge	3	Dr. Mohammed Abd Elwahab
Capacitance of capacitor by AC current	3	Dr. Mohammed Abd Elwahab
Single beam oscilloscope	3	Dr. Mohammed Abd Elwahab
Double beam oscilloscope	3	Dr. Mohammed Abd Elwahab
The Mutual Induction	3	Dr. Mohammed Abd Elwahab
The magnetic field due to a long wire	3	Dr. Mohammed Abd Elwahab

The magnetic field due to a solenoid	3	Dr. Mohammed Abd Elwahab
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#### 4– Teaching and Learning Methods

4.1-Discussion sessions

4.2-Class activities

#### 5- Student Assessment Methods

5.1 Mid-term exam to assess Understanding

5.2 Final term exam to assess knowledge with understanding

5.3 Oral exam to assess understanding

#### Assessment Schedule

Assessment 1 Mid-term exam week 7

Assessment 2 Final term exam week 14

Assessment 3 Oral exam week 1-12

Assessment 4

#### Weighting of Assessments

Mid-Term Examination	10%
Final-term Examination	80%
Oral Examination.	10%
Practical Examination	0 %
Semester Work	0%
<u>Other types of assessment</u>	<u>%</u>
Total	100%

#### 6- List of References

6.1- Course Notes

.....Lecture materials.....

6.2- Essential Books (Text Books)

Optics (Recht); 2<sup>nd</sup> edition by Jurgen R. Meyer & Arendt

### 6.3- Recommended Books

Optics (Recht); 2<sup>nd</sup> edition by Jurgen R. Meyer & Arendt

### 6.4- Periodicals, Web Sites, ... etc

<http://www.hep.com>

[http://www.physics2000](http://www.physics2000.com)

[http://www.physicstoday](http://www.physicstoday.com)

## **7- Facilities Required for Teaching and Learning**

Personal computer, data show and power point application.

**Course Coordinator: Dr. Mohammed Abd Elwahab**

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

Date: 1/6 /2008

