University: Benha **Faculty of Science**

Course Specifications

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

Major or Minor element of program: Minor

Department offering the program: Biology

Department offering the course: Physics

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

Date of specification approval: 2008

A- Basic Information

Title: Physical Optics and Spectroscopy **Code:** Phy 211
Credit Hours: **Lecture:** 2 hrs/week
Tutorial: 0 hr/week **Practical:** 3 hrs/week **Total:** 5 hrs/week

B- Professional Information

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.

1. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

To make the graduate able to:
a1- Understand the Hygenz principle.
a2- Understand the light polarization phenomena.
a3- Study the different methods of obtaining the polarized light.
a4- Understand the interference in thin films.

b- Intellectual Skills:

To make the graduate able to:
b1- Differentiate between the natural and polarized light.
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 different optical materials to polarize and analyze the light.
c2- Design the optical devices.

d- General and Transferable Skills

d1- Community linked thinking.
d2- Work in team.
d3- Write reports

3-Contents

Topics	No. of hours	Lecture	Tutorial/Practical
Wave motion	10	4	6
Interference	15	6	9
Diffraction	15	6	9
Polarization	10	4	6
Absorption of light	10	4	6
Total	60	24	36

2. Teaching and Learning Methods

4.1- Lectures
4.2-Discussion sessions
4.3-Class activities

3. Student Assessment Methods

5.1 Discussions to assess applying and evaluating the information
5.2 Quiz to assess the acquired profession skills
5..3 Mid term exam to assess understanding **intellectual** skills
5.4 End of term exam to assess understanding **intellectual** skills

6- Assessment Schedule

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

Weighting of Assessments

Mid-Term Examination 6 %
Final-term Examination 46 %
Oral Examination 5 %
Practical Examination 26 %
Semester Work 12 %
Other types of assessment 5 %
Total 100%

4. List of References

6.1- **Course Notes:** Lecture materials
6.2- **Essential Books (Text Books):**

- Optics (Hecht)
- Visual optics, H. H. Emsley, (1976).
- Physics, R. A. Serway, (1996).
- Physics, Part II, I. V. Savelyev, Mir Publisher, Mosco, (1979).

6.3- **Recommended Books:**

- Optics (Hecht)
- Visual optics, H. H. Emsley, (1976).
- Physics, R. A. Serway, (1996).
- Physics, Part II, I. V. Savelyev, Mir Publisher, Mosco, (1979).

6.4- **Periodicals, Web Sites, … etc:**

http://www.hep.com
http://www.Physics2000.com
http://www.Physicstoday.org

7- Facilities Required for Teaching and Learning:

1- Blackboards
2- Projectors
3- Personal computers
5- Data show and power point application.
4- Experimental laboratories

Course Coordinator: Prof. Dr. / Hassan Omar

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

Date: 1/6 /2007