Course Specifications

Programme(s) on which the course is given: **M.Sc. Chemistry**

Major or Minor element of programmers: **Major**

Department offering the programmer: **Chemistry**

Department offering the course: **Chemistry**

Academic year / Level: 2012/2013

Date of specification approval: **2012**

A- Basic Information

Title: Solid State Chemistry Code: CH618 and CH6118
Credit Hours: 2h Lecture: 2h
Tutorial: 0 Practicals: 0h Total: 2h

B- Professional Information

1. Overall Aims of Course: by the end of the course, this course will

a- provide the students the fundamental concepts of the solid state.

b- Give an account on the general and special methods of preparation of solid materials.

c- characterize the solid material.

d- give an idea about the properties of solids and their applications.

2 – Intended Learning Outcomes of Course (ILOs)

c- Knowledge and Understanding:

After completing the course the student should be able to

a1- illustrate the general definitions and structural characteristics of solids.

a2- showthe structural-properties relationship.

a3- Take an account on the energy of solids.

b- Intellectual Skills

b1- develop analytical capability of the students through the discussion and solving the problems.

d- Professional and Practical Skills

d1- apply studied sujects in field of chemistry

d2- use applications of solid state chemistry in industry

c- General and Transferable Skills

d1) Enhancing the writing and oral communication capability of the students.

d2) Capability of solving the problems**.**

3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Structure of solids.	2	2	-
Crystal systems	2	2	-
Crystal symmetry	2	2	
Close packing in solids	2	2	
Lattice defects	2	2	-
x-ray-diffraction	2	2	-
Thermal analysis	2	2	-
Electronic properties of solids	2	2	-
Magnetic properties of solids	2	2	-

4– Teaching and Learning Methods

4.1) Lectures
4.2) discussion
4.3) active lecture

5- Student Assessment Methods

5.1) Written examination to assess the understanding
5.2) Oral discussion.

Assessment Schedule

Assessment 1 short exam (class activities)	Every Week
Assessment 2 mid-term (written)	Week 7
Assessment 3 final-term (written)	Week 14

Weighting of Assessments

Mid-Term Examination	20%
Final-term Examination	60%
Semester Work	20%
Total	100%

6- List of References

6.1- **Text books**

a) Reaction and characterization of solids Royl Society of chemistry (2000).
b) Material Science and Engineering, John Wiley & Sans,Inc. (1994).

7- Facilities Required for Teaching and Learning

Over head projector and data show

Course Coordinator: Prof. Dr: El-Sayed El-Shereafy

Head of Department: Prof. Dr: Ahmed Abd-Elmged

Date: 2012