Course specifications

Programme(s) on which the course is given Pre-Master of Pure Mathematics

Major or minor element of programs	Major
Department offering the program	Mathematics
Department offering the course	Mathematics
Academic year / Level	**Post – graduate studies**
Date of specification	2010 – 2011

A- Basic Information

Title: Abstract Algebra Code: M611
Credit Hours: 2 hrs Lecture: 2 hrs
Tutorial: 0 Practical:0 Total: 2 hrs

B- Professional Information

1 – Overall aims of course

The course is the basic course in abstract algebra, introduces students to: know and get familiar with the finite groups, free groups and free product. Also, the student learns about group operators.

2 – Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

a1- Know some structure theory of groups such as direct products – Sylow's theorems and

finite abelian groups

a2- Understand some solvable groups and jordan – holder theorem normal series.

a3- Learn the Solvable groups, Composition series and Jordan – holder theorem.

. a4- Study free groups and free product.

b-Intellectual Skills

b1- Define and give examples of groups with operators (M-groups), M-subgroups , M-factor

groups , M- homomorphisms.

b2- Study solvable groups and Jordan – Holder theorem.

c- Professional and practical skills

The student should be able to;

c1- Set a program of exercise based on the tools he learned in the course.

c2-Weight the outcomes of the course through its use in practical application in different

scientific fields.

d- General and transferable skills

The student should be able to;

d1- Discuss and work in a group in order to study some structure theory of groups.

d2- Discuss and work in a group in order to define and give examples of groups with

operators (M-groups), M-subgroups , M-factor groups , M-homomorphisms.

d3-Deal with exercises related to the topics covered in the course

d4-Understand free groups and free product

3- Contents

Topic	No. of hours	Lecture	Tutorial/Practical
Structure Theory of Groups: Direct products – Sylow's theorems – Finite abelian	6	3	-
Solvable Groups and Jordan – Holder Theorem: Normal series, Solvable groups, Composition series and Jordan – holder theorem.	6	3	-
Survey of Some Finite Groups:	4	2	-
Groups With Operators: Definitions and examples of groups with operators (M-groups), M-subgroups , M-factor groups , M-homomorphisms. The fundamental theorem of homomorphism for M-groups. The	6	3	-
Free Groups and Free Product:	6	3	-

4– Teaching and learning methods

4.1- Lectures

4.2- Working on hand in assignments

4.3- Attending practical classes

5- Student assessment methods

5.1 Mid term written exam to assess understanding competencies

5.2 Oral Exam to assess attendance and interesting.

5.3 Semester hand in assignments to assess understanding professionalism.

5.4 Final term written Exam to assess comprehension.

Assessment schedule

Assessment 1	Mid term	Week 4 and 7
Assessment 2	semester activities	Week 5 and 8
Assessment 3	Final term oral exam	Week 13
Assessment 4	final term written exam	Week 14

Weighting of assessments

Mid-Term Examination	20%
Semester Work (homework assignments + oral tests)	20 %
Other types of assessment	00%
Final-term written Examination	60%
Total	100%

Any formative only assessments

6- List of references

6.1- Course notes

Collected and prepared notes that cover the main topics in the course content

6.2- Essential books (text books)

6.3- Recommended books

7- Facilities required for teaching and learning

PC’s - packages for ready made scientific programs.

Course coordinator: Dr. Lila Nashed

Head of Department: Prof. Dr. Mohamed A. Ramadan

Date: / /