University: Benha　　　　　　　　　**Faculty of Science**

Course Specifications

Programme(s) on which the course is given . Basic SCience

Major or Minor element of programmes: Major

Department offering the programme : Chemistry

Department offering the course : Mathematics

Academic year / Level : First year(Physical science) /Second Semester

Date of Department approval : 2008

A- Basic Information

　　Title: Algebra　　　　　　　　**Code: 141 M**

　　Credit Hours:　　　　　**Lecture:2 hrs/week**

　　Tutorial:1　　　　　**Practical:**　　　　　**Total:3 hrs**

B- Professional Information

　　1 – Overall Aims of Course: By the end of the course the student will able to
　　　　i) Know the basics of complex numbers , and Mathematical Induction ,
　　　　ii) Know the basics of Set Theory, Mappings`, Mathematical Logic
　　　　iii) Know the Partial Fractions The matrices and The Determinants

　　2 – Intended Learning Outcomes of Course (ILOs)

　　a-Knowledge and Understanding: By the end of the course the student will able to:
　　　　a1- solve a system of algebraic equations by using the determinants and the matrices.
　　　　a2- Know that the Partial Fractions is useful in finding the integration of complicated fractions.
　　　　a3- Know the mathematical Induction is important in proving some relations.

　　b-Intellectual Skills

　　　　b1- Use of basic principles to solve a system of algebraic equations

b2- Make discussion concerning assigned problems

b3- Extend of mental ability for the student

c-Professional and Practical Skills

c1- Develop the ability of the student to relate between topics

c2- Apply what was studying in the previous courses

c3- Develop the capability of the student for thinking

d-General and Transferable Skills

d1- Solve problems

d2- Work in groups

d3- Analysis of results

3- Contents

Topic	No. of hours	Lecture	Tutorial
Mathematical Induction	3	2	1
The Partial Fractions	6	4	2
Mathematical Logic	6	4	2
Set Theory	6	4	2
Complex Numbers	6	4	2
Permutation ,Commutation and Binomial Theory	3	2	1
The matrices and The Determinants	6	4	2

4– Teaching and Learning Methods

4.1- Lecturing

4.2- Discussions

4.3- Exercises

4.4- Homework

5- Student Assessment Methods

5.1 Discussions to assess applying and evaluating the information

5.2 Essay to assess understanding

5.3 Mid term exam to assess understanding

5.4 End of term exam to assess knowledge with understanding

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	**80%**
Oral Examination.	**5%**
Practical Examination	**%**
Semester Work	**5%**
Other types of assessment	**%**
Total	**100%**

Any formative only assessments

6- List of References

    6.1- Course Notes

    6.2- Essential Books (Text Books)

Algebra and Analysis of Elementary Functions, M. K. Polapov, Mir Publishers Moscow, 1987

    6.3- Recommended Books

Algebra and Analysis of Elementary Functions, M. K. Polapov, Mir Publishers Moscow, 1987

    6.4- Periodicals, Web Sites, … etc

    Science direct, google.com; Chemweb.com

    7- Facilities Required for Teaching and Learning

Course Coordinator: Dr. Majdi Moustafa

Head of Department: Prof. Dr. Effat Abbas

Date: