University: Benha   **Faculty of Science**

Course Specifications

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

Major or Minor element of programmes: Minor

Department offering the programme: Biology& geology

Department offering the course: Mathematics

Academic year / Level: First year (Biology and Geology) / First Semester

Date of Department approval: 2008

A- Basic Information

Title: Algebra and Geometry   **Code:** 106 M
Credit Hours: **Lecture:** 2 hrs/week
Tutorial: 1 hr/week   **Practical:**   **Total:** 3 hrs/week

B- Professional Information

1 – Overall Aims of Course: At the end of the course the student will be able to:

i) know the basics of complex numbers, and Mathematical Induction.
ii) Study the Partial Fractions The matrices and The Determinants.
iii) know the vectors in the space, the scalar and vector product the polar, cylindrical and spherical coordinates The circle Conical sections and The straight line .

2 – Intended Learning Outcomes of Course (ILOs)

a-   Knowledge and Understanding:
a1- Solve a system of algebraic equations by using the determinants and the matrices.
a2- Find the integration of complicated fractions and Mathematical Induction is important in proving some relations.
 a3- Understand the fundamental concepts of Geometry will be able to illustrate application of it .

b-   Intellectual Skills

b1- Use of basic principles to solve a system of algebraic equations
b2- Make discussion concerning assigned problems
b3- Create of mental ability for the student

c-   Professional and Practical Skills:

 At the end of this course have the ability to:
c1- Relate between topics.
c2- Apply what was studying in the previous courses.
c3- Develop the capability for thinking.

d-   General and Transferable Skills

d1- Use Computer
d2- Work in groups.
d3- Analysis of results.

3- Contents

Topics	No. of hours	Lecture	Tutorial
Mathematical Induction	3	2	1
The Partial Fractions	3	2	1
Complex Numbers	6	4	2
Permutation ,Commutation and Binomial Theory	3	2	1
The matrices and The determinants	3	2	1
The vectors in the space , scalar and vector product	3	2	1
The cylindrical and spherical coordinates	3	2	1
The circle	3	2	1
Conical sections	6	4	2
The straight line	3	2	1
Total	36	24	12

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 Quiz to assess the acquired the student ability to think
5.3 Mid term exam to assess understanding **intellectual** skills
5.4 End of term exam to assess knowledge with understanding

1- Assessment Schedule

Assessment : Discussions   Week 1-12
Assessment : Quiz   Week 3
Assessment : Mid term   Week 7
Assessment : 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 palpov,1987
6.3- **Recommended Books**
Algebra and analysis of elementary functions palpov,1987

6.4- **Periodicals, Web Sites:** www.google.com, www.sciencediect.com
7- Facilities Required for Teaching and Learning:
-                      Purchasing computers, boards, books and programs

Course Coordinator:

Head of Department:

Date: /   /