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 specification approval : 2008

A- Basic Information

Title: High Calculus **Code: 103 M**

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

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

B- Professional Information

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

i) Study behavior of the sequences

ii) Study functions of several variables

iii) Study the integral in two and three dimensions

2 – Intended Learning Outcomes of Course (ILOs)

a-Knowledge and Understanding: By the end of the course the student can

a1- understand the behavior for functions of several variables

a2- Develop the ability of the student to deal with High Calculus

a3- Apply what was studying in the previous courses

b-Intellectual Skills

b1- Extend the mentality abilities for the student

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/Practical
Sequences	**6**	**4**	**2**
Fourier series	**6**	**4**	**2**
Functions of several variables	**12**	**8**	**4**
The surface and volume integrals	**12**	**8**	**4**

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)

Applied Calculus, C. Taylor and L. Gilligan, Brooks/Cole, 1989

6.3- Recommended Books

Applied Calculus, C. Taylor and L. Gilligan, Brooks/Cole, 1989

6.4- Periodicals, Web Sites, … etc

Science direct, google.com; Chemweb.com

7- Facilities Required for Teaching and Learning

Course Coordinator: Dr.Sohar Abdul El_gavar

Head of Department: Prof. Dr. Effat Abbas