

ATTACHMENT 5.

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

**T6. Course Specifications
(CS)**

Course Specifications

Institution : King Khaled University	Date: 2016
College/Department: Faculty of Sciences/ Department of Mathematics	

A. Course Identification and General Information

1. Course title and code: Calculus (1) – 119 Math			
2. Credit hours: 3			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Engineering			
4. Name of faculty member responsible for the course Mutaz Omer – Yahya Taha			
5. Level/year at which this course is offered: 1 st level / 1 st Academic Year			
6. Pre-requisites for this course (if any) None			
7. Co-requisites for this course (if any) None			
8. Location if not on main campus Academic Campus at Mahala			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100%"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

B Objectives

<p>1. What is the main purpose for this course?</p> <p>The main tool in this program is to familiarize the student with some techniques of calculus concerning the inequalities, the equations, the lines, the circles and the functions. For the last notion, we introduce definition and techniques of limits, continuity, differentiability and some analysis results.</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <p>-To include more topics that cover the pre-calculus part in the beginning of the course like fractions, roots, factoring, ... etc.</p> <p>-To include some applications of the course in engineering area.</p>

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Equations, Inequalities, factorisation and quadratic formula and revision of some basic skills of mathematics.	2	6

Definition of functions, domain, range, symmetry, and graph of some kinds of functions, transformations, Addition, subtraction, multiplication and division , and their domain	2	6
Trigonometric functions and some properties and identities.	1	3
Definition of limits, techniques of finding limits and sandwich theorem	1	3
Continuity, discontinuity	1	3
Definition of derivatives, basic rules of differentiation, techniques of derivatives, limits and derivatives of trigonometric functions, the chain rules, implicit differentiation and applications of derivation in finding the equation of tangent lines	3	9
Rolle's theorem, mean value theorem, extremum, first and second derivative tests, asymptotes and graph of functions	2	6
Total	12	36

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	36				8 quizzes	44
Credit	3					3

3. Additional private study/learning hours expected for students per week.

<input type="checkbox"/> yes

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	To familiarize the student with the techniques of calculus	Theoretical part: lectures	Quizzes Home works
1.2	to manipulate the basic results of functions and some standard theorem as Rolle's Theorem and mean value theorem	Discussion groups about the exercises	Midterm exam Final Exam
2.0	Cognitive Skills		
2.1	To use the techniques and theorems in the area of speciality and in the all field where it is possible	Discussion groups	Interview with students due to office hours.
2.2	To develop the spirit of analysis and logic. To develop skills of research	Using Blackboard.	Quizzes, home works and exams
3.0	Interpersonal Skills & Responsibility		
3.1	Work independently and as part of a team.	Writing group reports	Student's behaviour is considered in the continuous assessment marks.
3.2	Manage resources, time and other members of the group, Communicate results of work to others	Solving problems in groups	Assessing oral discussion of different cases
4.0	Communication, Information Technology, Numerical		
4.1	How to improve their language and writing skills	Writing reports	Direct evaluation of take home projects.
4.2	Use computational tools	Incorporating the use and utilization of computer in the course	Presentations and live discussion

5.0	Psychomotor		
5.1	Student should manipulate all the mathematical knowledge in reallife problems	Attending seminars and conferences held in the department.	Continuous evaluation to perform the student's skills
5.2	Capacity to present and discuss mathematical ideas and to acquire mathematical proof skills.	Attending seminars and conferences held in the department.	Continuous evaluation to perform the student's skills

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)								
	1.1	1.2		2.1		3.2		4.1	
1.1									
2.1									

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	5 Quizzes	All semester	10%
2	Midterm examination 1	7	20%
3	Midterm examination 2	15	20%
4	Final Exam	Last week	50%
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours (10 hours per week)

E Learning Resources

1. List Required Textbooks

2. List Essential References Materials (Journals, Reports, etc.)

E.W.Swokourki, M.Olinich, D.Pena, J.A.Cole, Calculus. Pws pub. Co. ,1994.

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
- Class room equipped with 30 seats

2. Computing resources (AV, data show, Smart Board, software, etc.)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Feedback questionnaire distributed to the students after midterm
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department Peer consultation on teaching. - Departmental council discussions. - Discussions within the group of faculty teaching the course. - Discussing contributors' reports. - Discussing the reports of the guest evaluator(s).
3 Processes for Improvement of Teaching Conducting workshops given by experts on the teaching and learning methodologies. - Using different teaching modalities. - Periodical departmental revisions of the methods of teaching

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

Providing samples of all kind of assessment in the departmental course portfolio of each course.
- Assigning group of faculty members teaching the same course to grade same questions for various students. - Faculty from other institutions are invited to review the accuracy of the grading policy

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Assigning periodical student' questionnaires. - Follow up of the quality assurance/academic affairs committee. - The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils. - The head of the department and faculty take the responsibility of implementing the proposed changes.

Name of Instructor: Mutaz Omer – Yahya Taha

Signature: Mutaz – Yahya
Date Report Completed: 2016

Name of Course Instructor :Mutaz Omer – Yahya Taha
Program Coordinator: Mutaz Omer – Yahya Taha

Signature: Mutaz – Yahya Date Received: 2016