



ATTACHMENT 5.

MTH-103 MATH FOR ARCHITECTS T6. COURSE SPECIFICATIONS (CS)



هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Al Yamamah University	Date: November 16, 2018
College/Department: Computer and Information Systems / Mathematics and Natural Sciences	

A. Course Identification and General Information

1. Course title and code: Math for Architects / MTH-103			
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) Interior Architecture, For all computer information system			
4. Name of faculty member responsible for the course: Ms. Shameem Tahseen			
5. Level/year at which this course is offered: First Year			
6. Pre-requisites for this course (if any): MTH-001/ Mathematics for Management			
7. Co-requisites for this course (if any): None			
8. Location if not on main campus: Main Campus			
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

1. What is the main purpose for this course?

This course is designed to give students the necessary knowledge and skills in Calculus along with the ability to help them to understand and explore: derivatives, differentiation of algebraic, trigonometric, inverse trigonometric, exponential, and logarithmic, hyperbolic functions, parametric and implicit differentiation, circle, ellipse and parabola and Hyperbola. Surface area of solid geometric figures. Parametric and Polar coordinates.

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)

- Increased use of LMS (Moodle based) for material delivery/receipt and discussion forums.
- Assignment of real life projects to students, as an application to theoretical contents

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

Course Description:

This three-credit course designed for students specializing in interior Architecture. It provides basic transcendental functions and their properties. It develops students' skills in the techniques of differentiation and enables them to grasp its intuitive meaning. It also provides them with essential knowledge and skills in analytic geometry. The meaning of derivatives, differentiation of algebraic, trigonometric, inverse trigonometric, exponential, and logarithmic, hyperbolic functions, parametric and implicit differentiation. Conic sections: circle, ellipse, hyperbola and parabola. Surface areas and volumes of solid geometric figures. Parametric and polar coordinates.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
- Definition of Derivatives - Derivatives of algebraic function	3	9
- Implicit Differentiation	1	3
- Parametric Differentiation	1	3
- Derivatives of trigonometric functions - Derivatives of inverse of trigonometric functions	3	9
- Derivatives of hyperbolic functions	2	6
- Surface Areas and Volumes of Cubes, Cuboids, Cone, Cylinders, Spheres, Pyramids	1	3
- Conic section: circle	1	3

- Ellipse, parabola	1	3
- Hyperbola	1	3
- Changing from parametric to polar coordinates and vice versa	1	3
Total	15	45

2. Course components (total contact hours and credits per semester):							
		Lecture	Tutorial	Laboratory / Studio	Practical	Other:	Total
Contact Hours	Planned	45					45
	Actual	45					45
Credit	Planned	3					3
	Actual	3					3

3. Additional private study/learning hours expected for students per week.	5
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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.)

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge After successful completion of the course students will be able to		
1.1	Write the derivatives of algebraic, trigonometric, inverse trigonometric, exponential, logarithmic, hyperbolic functions, parametric and implicit differentiation.	Formal lectures Group discussion Exercises Class room activities	Home works Quizzes Exams
1.2	Write equations of circle, ellipse parabola, hyperbola, Solid geometry, parametric and polar coordinates conversions.		

2.0	Cognitive Skills After successful completion of the course students will be able to		
2.1	Evaluate derivatives of <ul style="list-style-type: none"> - algebraic, - trigonometric, - Inverse trigonometric - Exponential - Logarithmic - Hyperbolic - parametric and implicit differentiation. 	Formal lectures Group discussion Exercises Class room activities Observe and Learn p Group discussion	Home works Quizzes Exams
2.2	Use equations of circles, parabola, hyperbola and ellipse to solve real life applications		
2.3	Calculate the conversion from polar coordinates to parametric coordinates and vice versa		
3.0	Interpersonal Skills & Responsibility After successful completion of the course students will be able to		
3.1	NA	NA	NA
4.0	Communication, Information Technology, Numerical After successful completion of the course students will be able to		
4.1	Calculate numerical problems related to: <ul style="list-style-type: none"> - 2D and 3D models for conic sections - surface area and volumes of solid geometric figures(cubes, cuboids, cone, cylinders, spheres,pyramids). 	Formal lectures Group discussion Exercises Class room activities	Home works Quizzes Exams
5.0	Psychomotor		
5.1	NA	NA	NA

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	First Quiz	4	8%
2	First Homework	8	8%
3	Mid – Term Exam	8	20%
4	Second Quiz	12	8%
5	Third Quiz	14	8%
6	Second Homework	15	8%
7	Final Exam	16	40%

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)

Faculty Members have around 10 office hours every week for student consultations.

E Learning Resources

<p>1. List Required Textbooks</p> <ul style="list-style-type: none"> - Stewart, Calculus, 7th, Metric Version. Brooks Cole 2007. - .Course Notes
<p>2. List Recommended Textbooks and Reference Material (Journals, Reports, etc)</p> <ul style="list-style-type: none"> - Varberg, Calculus, 9th ed. Prentice-Hall 2007. - Blitzer, Precalculus, 3rd ed. Prentice-Hall2007. - Smith, Calculus, Early Transcendental Functions, 4thed. McGraw – Hill 2012.
<p>3. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)</p> <p>http://lms.alyamamah.edu.sa</p>
<p>4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p> <p>NA</p>

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.)

Classrooms

2. Technology resources (AV, data show, Smart Board, software, etc.)

Data Show

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

NA

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

At the end of the course, students receive feedback forms designed as per guidelines of NCAAA that are used to evaluate the effectiveness of teaching.

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department

Peer review visits are normally conducted among faculties wherever possible during academic year. During the lecture time Chair (Head)/ Dean of the department visits the classroom. At the end of each visit, faculties are usually set together to discuss related issues

3. Processes for Improvement of Teaching

- Feedbacks from students using different types of survey including Student Experience Survey (SES), Program Evaluation Survey (PES), and Alumni Survey (AS) are shown and discussed with faculty members to improve the teaching.
- Specialized workshops and seminars are conducted throughout academic year to address specific teaching strategies and improvements.

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)

Peer review and discussion with course coordinator. There should be a strong liaison with teacher from some external university/institute in order to exchange ideas related to marking/ evaluating quizzes and assignments

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

At the end of each semester, Curriculum committee conducts a meeting with all faculty members in which surveys filled by the students and other feedbacks from faculty members are discussed. Effectiveness of the courses, mistakes done and weaknesses are discussed. These points are made basis for the planning for improvements for next semester/year.

Name of Course Instructor: Ms. Shameem Tahseen

Signature: _____

Date Specification Completed: November 18, 2018

Coordinator: Dr. Sadiqah Al Marzooq

Signature: _____

Date Received: _____