هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Geometry**
Course Code:	**2022103-3**
Program:	**Bachelor in Mathematics.**
Department:	**Mathematics and Statistics Department**
College:	**Faculty of sciences**
Institution:	**Taif university**

Table of Contents

A. Course Identification

1. Credit hours: (3)	
2. Course type	
a. University ☐ College ☐ Department ☑ Others ☐	
b. Required ☑ Elective ☐	
3. Level/year at which this course is offered:	4th level / 2th year
4. Pre-requisites for this course (if any)**:**	Introduction to Mathematics (202112-3)
5. Co-requisites for this course (if any)**:**	None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	**5Hr /Week**	100
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	50
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	50

B. Course Objectives and Learning Outcomes

1. Course Description

This course includes the following topics: conic sections (parabola- ellipse-hyperbola), Vectors in the space, Coordinate systems, Cartesian, Cylindrical, Spherical and polar Coordinates and its transformation from one to the other. Dot and Cross product of vectors in the space. Application of Dot and Cross Product. Straight-line in a space, Conical sections in space (parabola-ellipse- hyperbola), Sphere and Rotational surfaces, Solid Sections in the space.

2. Course Main Objective

The student will be taught as follows:

1. Introducing the concepts and importance of Geometry.
2. Describing basic Geometry and types for fundamental Geometry.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding:**	
1.1	Recognize conic sections in 2d, vectors- coordinates systems and types – coordinates system in apace.	K2
1.2	Identify Plane, Sphere and straight-line equation in a space and the relationship between them.	K2
2	**Skills:**	
2.1	Explain the types of the coordinate system, transformation of axis.	S5
2.2	Demonstrate performance of different Plane, Sphere and straight-line equation in a space and the relationship between them.	S5
2.3	Apply the Canonical section and solid sections in the space.	S5
3	**Values:**	
3.1	Work effectively within groups and independently.	V1

C. Course Content

No	List of Topics	Contact Hours
1	Classification of the 2nd degree equations, transformation of axis	5
2	Conic sections (parabola- ellipse- hyperbola)	5
3	Cartesian Coordinates and polar Coordinate and Cylindrical Coordinate and Spherical Coordinate, Convert between the rectangular, cylindrical and spherical coordinate systems	5
4	Vectors, Dot product, and application.	5
5	Plane and straight-line equation in a space and the relationship between them.	5
6	**Midterm exam,** Sphere and plane	5
7	Relation between line and Plan and Sphere.	5
8	Conical sections in space (parabola)	5
9	Conical sections in space (ellipse).	5
10	Conical sections in space (hyperbola), Rotational surfaces	5
Total		50

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding:**		
1.1	Recognize conic sections in 2d, vectors-coordinates systems and types – coordinates system in apace.	• Lectures • Group discussions	• Quizzes Assignments
1.2	Identify Plane, Sphere and straight-line equation in a space and the relationship between them.	• Lectures • Group discussions	• Exams • Assignments
2.0	**Skills:**		
2.1	Explain the types of the coordinate system, transformation of axis.	• Interactive classes Group discussions	• Quizzes Assignments
2.2	Demonstrate performance of different Plane, Sphere and straight-line equation in a space and the relationship between them.	• Lectures • Group discussions	• Exams • Quizzes
2.3	Apply the Canonical section and solid sections in the space.	• Lectures Self-learning through the website	• Exams • Quizzes Assignments
3.0	**Values:**		
3.1	Work effectively within groups and independently.	projects	Oral exams

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes + Home works	Continues	10 %
2	Midterm exam	5th-6th	30 %
3	Class Work (Homework- report- class test….)	8th	10 %
4	Final exam	11th	50 %

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations.
Teaching staff is also available using Blackboard web site and Taif University "Edugate" System.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	**Anton, Howard; Herr, Albert, Calculus with Analytic Geometry, 5th Edition,** John Wiley & Sons, Inc., Hoboken, 7ed, NJ (1995). ISBN 10: 0471594954 ISBN 13: 9780471594956

Essential References Materials	P. R. Vittal **"Geometry," Pearson India, 2013,** ISBN: 9789332524361
Electronic Materials	http://www.math-math.com/
Other Learning Materials	**Black board system**

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	**Lecture halls, containing white boards, and electronic monitors - The seats fit the number of students.**
Technology Resources (AV, data show, Smart Board, software, etc.)	Laptop, smart board and projector.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	**Wi-Fi internet connections**

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect
Quality of learning resources	Peer Reviewer Students	Direct Indirect
Extent of achieving the course learning outcomes	Peer Reviewer Students	Direct Indirect

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department of Mathematics and Statistics
Reference No.	11
Date	12-7-1443 H

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