



مستند

Course Title:	Analytic Geometry
Course Code:	231 Math-3
Program:	Mathematics
Department:	Mathematics
College:	Science and Arts
Institution:	Najran University



Table of Contents

A. Course Identification	3	
6. Mode of Instruction (mark all that apply)		3
B. Course Objectives and Learning Outcomes	3	
1. Course Description		3
2. Course Main Objective		3
3. Course Learning Outcomes		4
C. Course Content	4	
D. Teaching and Assessment	4	
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods	4	
2. Assessment Tasks for Students		5
E. Student Academic Counseling and Support	5	
F. Learning Resources and Facilities	5	
1. Learning Resources		5
2. Facilities Required		5
G. Course Quality Evaluation	6	
H. Specification Approval Data	6	



A. Course Identification

1. Credit hours:			
2. Course type			
a.	University <input type="checkbox"/>	College <input type="checkbox"/>	Department <input checked="" type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>	Others <input type="checkbox"/>
3. Level/year at which this course is offered: 3 / 2			
4. Pre-requisites for this course (if any):			
5. Co-requisites for this course (if any):			

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%
2	Blended	---	---
3	E-learning	---	---
4	Correspondence	---	---
5	Other	---	---

7. Actual Learning Hours (based on academic semester)

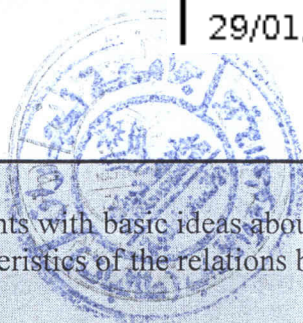
No	Activity	Learning Hours
Contact Hours		
1	Lecture	45
2	Laboratory/Studio	---
3	Tutorial	---
4	Others (Exams)	3
	Total	48
Other Learning Hours*		
1	Study	30
2	Assignments	10
3	Library	10
4	Projects/Research Essays/Theses	---
5	Office hours	15
	Total	113

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

A course in plane and solid analytic geometry covering such topics as plane coordinate systems, equations and their loci, straight lines, conic sections, higher place curves, transformation of coordinates, coordinates in space, space loci, planes quadratic surfaces, etc.



2. Course Main Objective

This course aims to provide students with basic ideas about plane and solid analytic geometry, and provide them with the characteristics of the relations between the different geometric shapes.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Define the circle, ellipse, hyperbola, and parabola and other shapes in space.	
1.2	Recognize the different cases of relation between any two shapes.	
1.3	State the different forms of the quadratic equation with two and three variables.	
1...		
2	Skills :	
2.1	Calculate the coordinate of the intersection points between two lines, two circles, between line and circle and other two shapes.	
2.2	Distinguish between the different forms of the conical and surfaces sections.	
2.3		
2.4		
3	Competence:	
3.1	Develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.	
3.2	Model real world problems using analytic geometry.	
3.3	---	
3...	---	

C. Course Content

No	List of Topics	Contact Hours
1	Coordinate systems (Cartesian, polar, cylindrical, and spherical coordinate, distance between two points, distance between points, med point).	3
2	Line equation in the plane. Different forms of line equations. Distance between point and line. Intersection of pair of lines.	3
3	Circle: definition, equation and special cases, different forms of the equation of the circle, relation between line and circle. Family of circles.	3
4	Conic section (Parabola , Ellipse, and Hyperbolic, some geometric properties of the conic sections, the equation of the tangent and the normal, the general form of the conic section, translate and rotate Axis).	6
5	Plane (equation - distance between point and plane – the intersection of two planes).	6

6	A straight line in 3D (concept and equation - the intersection of straight lines, different cases between straight line and plane).	6
7	Sphere (concept and equations - The characteristics of the sphere, different cases between line and sphere, different cases between plane and sphere, intersection of two sphere).	6
8	Conical surfaces (definitions and equations).	6
9	Classification of second degree equations in three variables .	6
Total		45

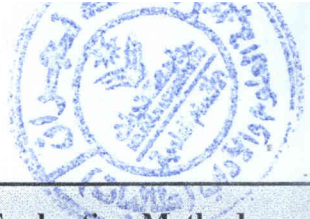
D. Teaching and Assessment

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

Cod e	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Define the circle, ellipse, hyperbola, and parabola and other shapes in space.	- Lecture - Discussions	- Quiz - Written Exam
1.2	Recognize the different cases of relation between any two shapes.	- Lecture - Discussions	- Quiz - Written Exam
1.3	State the different forms of the quadratic equation with two and three variables.	---	---
2.0	Skills		
2.1	Calculate the coordinate of the intersection points between two lines, two circles, between line and circle and other two shapes.	- Lecture - Discussions	- Exercises - Homework - Quiz/Written Exam
2.2	Distinguish between the different forms of the conical and surfaces sections.	- Lecture - Discussions	- Exercises - Assignments - Homework - Quiz - Written Exam
...			
3.0	Competence		
3.1	Develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.	- Lecture - Discussions	- Oral Exam
3.2	Model real world problems using analytic geometry.	- Lecture - Discussions	- Oral Exam - Rubrics
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2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total
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G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student course evaluation survey at the end of semester.	Students	Questionnaire (Indirect)
Effectiveness of teaching and assessment	Peer Reviewer	Rubrics (Indirect)
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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	
Reference No.	
Date	