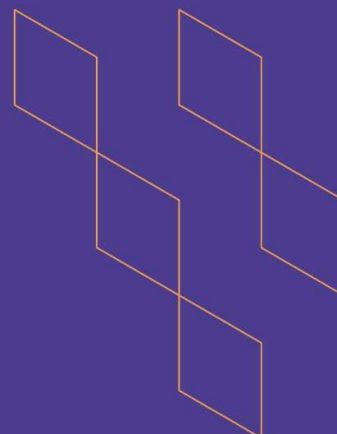




T-104  
2022

## Course Specification



Course Title: <b>Mathematics II</b>
Course Code: <b>292 Math</b>
Program: <b>EPET, MMET, CHET</b>
Department: <b>Basic Sciences and Supporting Studies</b>
College: <b>College of Applied Industrial Technology-Baish</b>
Institution: <b>Jazan University</b>
Version: <b>T-104 2022</b>
Last Revision Date: <b>3 March 2024</b>



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## A. General information about the course:

Course Identification	
1. Credit hours:	3 hours
2. Course type	
a. University <input type="checkbox"/>	College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>
3. Level/year at which this course is offered: Fourth level/ Second year	
4. Course general Description	
<p>The course is a logical extension of 191 Math. It introduces some advanced algebraic topics such as trigonometric functions, trigonometric identities, and some applications of trigonometry, trigonometric form of complex number, matrices and determinants. The course also introduces the concepts of elementary analytic geometry such as parabola, ellipse and hyperbola.</p> <p>The course is introduced through 2 hours theoretical part and 2 hours for tutorial for which students discuss and solve the problems of the lectures.</p>	
5. Pre-requirements for this course (if any): 191 MATH	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s)	
<p>The main purpose of this course is to build on concepts delivered in 191 MATH and develop the students' understanding of trigonometric concepts, matrices and geometry, and the ability to apply them in solving mathematical problems involved in technical specialty courses.</p>	

### 1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	48	100
2.	E-learning	--	--
3.	Hybrid <ul style="list-style-type: none"> <li>Traditional classroom</li> <li>E-learning</li> </ul>	--	--
4.	Distance learning	--	--



## 2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	24
2.	Laboratory/Studio	--
3.	Field	--
4.	Tutorial	24
5.	Others (specify)	--
	Total	48



## B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Demonstrate knowledge of matrices, trigonometry and geometry.	K1	Lecture, tutorial, active learning	Quiz, exams
1.2	Identify the different types of matrices and determinants.	K1	Lecture, tutorial, active learning	Quiz, exams
1.3	Discuss the elementary notion of analytic geometry.	K1	Lecture, tutorial, active learning	Quiz, exams
2.0	Skills			
2.1	Recognize the concepts of trigonometric functions.	S1	Lecture, tutorial, active learning	Quiz, exams
2.2	Explain the basic trigonometric identities.	S1	Lecture, tutorial, active learning	Quiz, exams
3.0	Values, autonomy, and responsibility			
3.1	Observe the ability to work independently and meet deadlines.	V1	Active learning	Class activity

## C. Course Content

No	List of Topics	Contact Hours
1.	<u>Introduction to matrices</u> a. Types of Matrices b. Algebra of matrices c. Matrix products d. Determinants	10





2.	<u>The Trigonometric function</u> a. Units of angle measurement b. Conversion from degree to radian and vice-versa c. Trigonometric ratios d. Right triangle trigonometry e. The law of sines and cosines	10
3	<u>Trigonometric identities</u> a. Basic trigonometric identities, and co-function identities b. The sum and difference identities c. Double-angle, and half-angle identities d. Area of triangle in terms of angle e. The trigonometric form of a complex number	10
4	<u>Concepts of Elementary Analytic Geometry</u> a. Parabolas b. Ellipses c. Hyperbolas	10
5	Revision of theoretical concepts	8
Total		48

## D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	All weeks	20%
2.	Assignments & Class activity	All weeks	15%
3.	Midterm Exam	Week 6	15%
4	Final Term Exam	As scheduled	50%

\*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

## E. Learning Resources and Facilities

### 1. References and Learning Resources

Essential References	<ul style="list-style-type: none"> <li>Lecture Notes</li> <li>College Algebra and Trigonometry: R N Aufmann, V C Barker and R D Nation, 7th –ISBN-13: 948-1-4390-4860-3, 2011.</li> </ul>
Supportive References	Algebra and Trigonometry: Functions and Applications by Paul A Foerster, 5 <sup>th</sup> -ISBN-13:978- 0131657106, 2005.
Electronic Materials	Not utilized





Other Learning Materials

Not utilized

## 2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms should be furnished for 25 students with <ul style="list-style-type: none"> <li>• White board or smart board</li> <li>• Appropriate Chairs</li> </ul>
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> <li>• Computer with data show</li> <li>• Calculator</li> </ul>
Other equipment (depending on the nature of the specialty)	Not utilized

## F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Institution	Direct
Effectiveness of students assessment	Institution	Direct
Quality of learning resources	Institution	Direct
The extent to which CLOs have been achieved	Course Coordinator	Direct
Other		

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

