



Model No.12
Course Specifications:Mathematics (A)

University: Benha University

Faculty: Faculty of Engineering at Shoubra

Department offering the program: All programs

Department offering the course: Engineering Mathematics and Physics

1- Course Data

Course Code:EMP011

Course Title:MathematicsA

Specialization:All programs

Study Year:Prep. Year

Teaching Hours: Lecture: 4

Tutorial: 2

Practical: 0

Total: 6

2- Course Aim

For students undertaking this course, the aims are to:

- 2.1- Recognize all elementary functions trigonometric, logarithmic, hyperbolic, exponential , inverse functions
- 2.2- Recognize limits and continuity
- 2.3- Recognize the rules of differentiation
- 2.4- Recognize the rules of definite and indefinite integration and the techniques of integration
- 2.5- Identify the applications of the definite integrals

3- Intended Learning Outcomes of Course (ILO's)

- a. Knowledge and Understanding Skills:** On completing this course, students will be able to:
 - a.1)Recognize concepts and theories of Mathematics appropriate to the different engineering specializations. (A.1)
- b. Intellectual Skills:** At the end of this course, the students will be able to:
 - b.1) Select appropriate mathematical methods for analyzing problems. (B.1)
- c. Practical and Professional Skills:** On completing this course, the students are expected to be able to:
 - c.1) Apply knowledge of mathematics.(C.1)
- d. General and Transferable Skills:** At the end of this course, the students will be able to:
 - d.1) Communicate effectively.(D.3)



4- Course Contents

Week no.	Topics
1	Functions: trigonometric - hyperbolic -logarithmic - exponential, inverse functions
2	Rules of differentiation for different functions
3	Different techniques for indefinite integrations
4	Applications of definite integrations
5	Limits and continuity

5- Teaching and Learning Methods

- 5.1 Lectures
- 5.2 Tutorial problem session

6- Teaching and Learning Methods of Disables

Nothing

7- Student Assessment

a- Student Assessment Methods

1. Assignments to assess knowledge and intellectual skills.
2. Quiz to assess knowledge, intellectual and professional skills.
3. Midterm exam to assess knowledge, intellectual, professional and general skills.
4. Final exam to assess knowledge, intellectual, professional and general skills.

b- Assessment Schedule

NO.	Assessment	Week
1	Midterm exam	8
2	Final exam	15

c- Weighting of Assessments

Assessment	Weight (%)
Midterm Examination	33
Final Term Examination	67
Oral Examination	00
Practical Examination	00
Semester Work	00
Other Types of Assessment	00
Total	100



8- List of References

a- Course Notes

- 1- Lectures material and training sheets prepared by instructor

d-Web Sites

- 1- www.Google.com

Course Coordinator: Dr. Mohamed Hussien Eid and Dr. Fathy Abdelslaam

Head of Department: Prof. Dr. Said Adballah



Model No.11A
Course Specifications : Mathematics (A)

University: Benha University

Faculty: Faculty of Engineering at Shoubra

Department: Mechanical Engineering Department

Matrix of Knowledge and Skills of the Course

No.	Topics	Week no.	Knowledge and Understanding Skills	Intellectual Skills	Practical and Professional Skills	General and Transferable Skills
1	functions	1-2	a1	b1	c1	
2	Rules of differentiation of different functions	3-4-5	a1	b1	c1	d1
3	Techniques for indefinite integrations	6-7-8	a1	b1		
4	Limits and continuity	10-11	a1		c1	d1
5	Applications of definite integrations	12-13-14	a1	b1		d1
6	functions	1-2	a1	b1	c1	
7	Rules of differentiation of different functions	3-4-5	a1	b1	c1	d1

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**Matrix of Course Aims and ILO's****Course Title: Mathematics (A)****Course Code: EMP011****Teaching Hours:** Lecture: 4 Tutorial: 2 Practical: 0 Total: 6**Major or minor element of program:** N.A.**Program on which the course is given:** B.Sc. Mechanical Power Engineering**Department offering the program:** Mechanical Engineering Department**Department offering the course:** Engineering Mathematics and Physics Department**Academic year / level:** 2014-2015 Preparatory Year / First Semester**Date of specifications approval:** 16/3/2010

No.	Topics	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
2.1	Recognize all elementary functions trigonometric, logarithmic, hyperbolic, exponential, inverse functions	a1	b1		
2.2	Recognize limits and continuity	a1	b1		
2.3	Recognize the rules of differentiation	a1	b1		
2.4	Recognize the rules of definite and indefinite integration and the techniques of integration	a1			d1
2.5	Identify the applications of the definite integrals	a1	b1	c1	d1

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