

**1<sup>st</sup> semester, 1440 /1441 H**

**Course title: Applied Mathematics for Biomedical Technology**

**Course title and code:** Applied Mathematics for Biomedical Technology (BMT 222)

**Program in which the course is offered:** Biomedical Technology

**Credit hours** 2

**Total contact hours per semester** 28

**Level at which this course is offered:** Level 3 / first year

**Course prerequisites:** NA

**Time:**

Tuesday: 1.00: 3.00 pm (Lecture)

**Location:** College of Applied Medical Sciences / BMT

**College member responsible for the course:** Dr. Widad Babiker

**Contact information:**

**Office Number:**

**Email:** [wbabiker@ksu.edu.sa](mailto:wbabiker@ksu.edu.sa)

**Website:**

**Office hours:** Sunday: 10.00 am: 11:00 pm and 12.00: 01:00 pm

Tuesday: 10.00 am: 11:00 pm and 12.00: 01:00 pm

Thursday: 10.00 am: 11:00 pm and 12.00: 01:00 pm

**Course Description:**

**This course covers fundamental mathematical concepts:** Topics include Solution of linear and quadratic equations. Factoring and partial fraction, Trigonometric functions, Logarithmic and exponential functions, Vectors and oblique triangles, Complex numbers, Derivatives of algebraic and trigonometric functions and application of differentiation, Maclaurin and binomial Series.

**Course Objectives:**

- ❖ Able to solve the system of linear and quadratic equations.
- ❖ To know how to perform elementary operations with determinants and matrices.
- ❖ Knowledge of trigonometric, logarithmic, and exponential functions.
- ❖ Able to use and manipulate complex numbers.
- ❖ Knowledge of differentiation and its application, Maclaurin and binomial Series.

**Learning Resources:**

Required Text(s)

- ❖ Peter K. F. Kuhfittig, "Basic Technical Mathematics with Calculus", Wadsworth Inc., 1989
- ❖ Anthony Croft, Robert Davison, "Mathematics for Engineers: A modern interactive approach", Addison- Wesley, 2003

Electronic Materials and Web Sites

Topics to be Covered		
List of Topics	No of Weeks	Contact hours
A Review of some fundamental concepts in algebra	1	2
Solution of simultaneous linear equations using determinants etc.	2	4
Factoring and fraction, partial fraction	2	4
Solution of quadratic equations and quadratic formula	2	4
Trigonometric functions and identities, Euler's identity	1	2
Logarithmic and exponential functions and their graphical representation	1	2
Vectors and oblique triangles	1	2
Complex numbers	1	2
Derivatives of algebraic and trigonometric functions and application of differentiation,	2	4
Maclaurin and binomial Series,	1	2

**Schedule of Assessment Tasks for Students During the Semester:**

	<b>Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)</b>	<b>Week Due</b>	<b>Proportion of Total Assessment</b>
a.	Midterm-1	4	17%
b.	Midterm-2	8	20%
c.	Midterm-3	12	17%
d.	Assignments / quizzes		3% - 3%
e.	Final exam	15	40%

✚ 75% attendance is compulsory as a criteria for eligibility to appear for final examination.