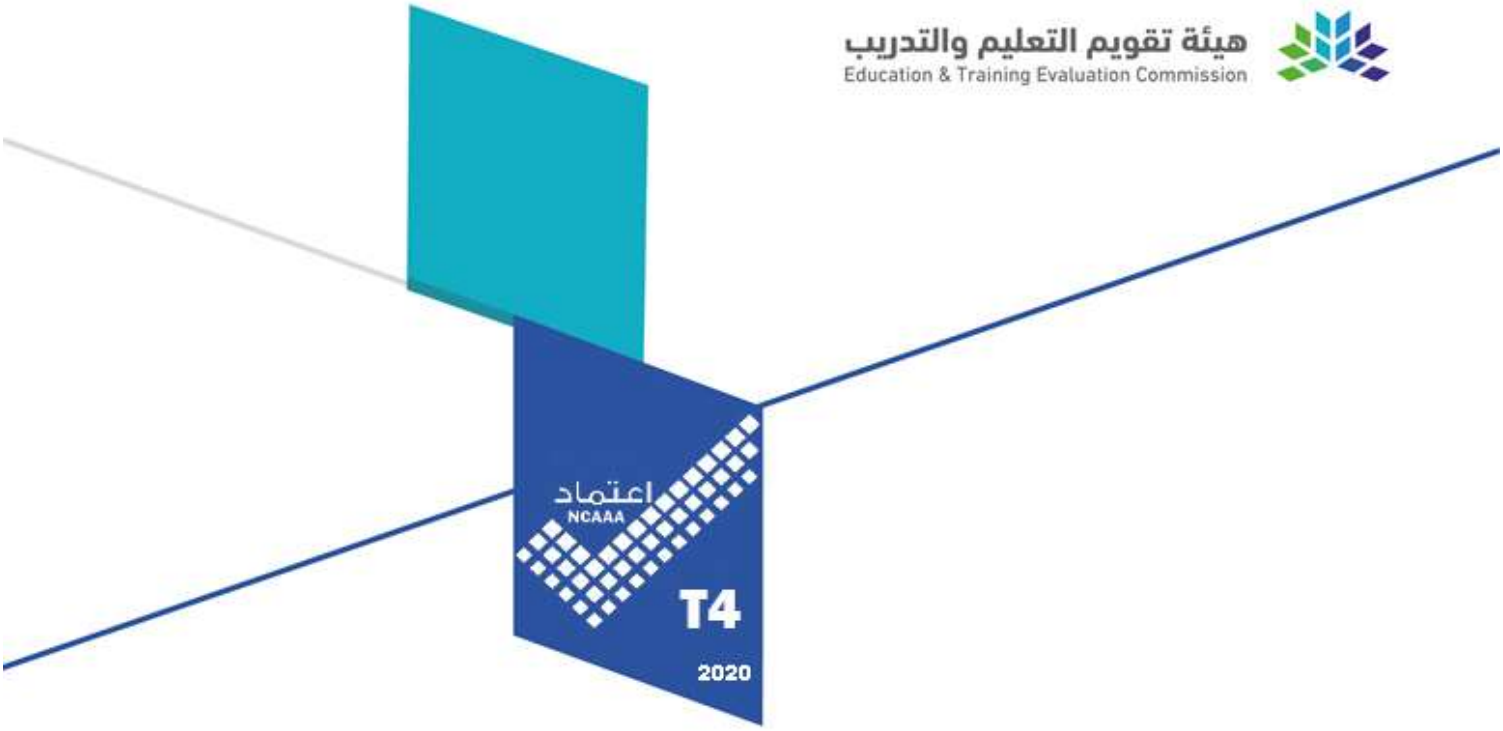
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Mathematics and Packages Programs
Course Code:	MATH 333
Program:	Bachelor of Science in Mathematics
Department:	Mathematics
College:	Science
Institution:	University of Tabuk

Table of Contents

A. Course Identification

1. Credit hours: 03 Hours/Week
2. Course type **a.** University ☐ College ☐ Department √ Others ☐ **b.** Required √ Elective ☐
3. Level/year at which this course is offered: **L7/Y4**
4. Pre-requisites for this course (if any): **Math-200; Stat 201**
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**	45	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	45
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	45

B. Course Objectives and Learning Outcomes

1. Course Description

The main purpose for this course is to provide student with computational skills through problem solving using computer package.

2. Course Main Objective

-Students will be able to recognize the importance of using mathematical software to solve problems.
-Students will be able to demonstrate proficiency in applying computational tools to a variety of mathematical and physical problems..

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Students will be able to recall commands and algorithms used in solving problems.	K1
1.2	Students will be able to demonstrate knowledge of procedures and algorithms used in mathematical packages.	K2

CLOs		Aligned PLOs
2	**Skills :**	
2.1	Students will be able to use computational procedures to find the solution to problems.	S2
2.2	Students will be able to apply a syntax of built-in functions in some branches of Mathematics, Physics, Chemistry and Engineering Science	S3
2.3	The students will be able to communicate algorithms for solving mathematical problems.	S4
2.4	Students will be able to solve mathematical problems using mathematical programming	S5
3	**Values:**	
	Students will be able to work effectively in groups.	V1

C. Course Content

No	List of Topics	Contact Hours
1	List as ordered set, Some operations on list (part, Range). Vector and Matrices	3 Hrs
2	Work with some standard mathematics functions	3 Hrs
3	Use building functions to perform operations.	3 Hrs
4	Basic plotting in 2 dimensions with some options	3 Hrs
5	Basic plotting in 3 dimensions with some options.	3 Hrs
6	Algebraic sets.	3 Hrs
6	**Mid-Exam 1**	
7	Differentiation and integration.	3 Hrs
8	Solution of algebraic equations.	3 Hrs
9	Sample user function with applications with passing parameters.	3 Hrs
10	Conditionals functions (If, Which, Pricewise)	3 Hrs
11	Loop functions (Table, Do, While, For)	3 Hrs
11	**Mid-Exam 2**	
12	User function by using Module with applications.	3 Hrs
13	More applications with concept of functions	3 Hrs
14,15	**Revision & Final Exam**	6 Hrs
Total		**45 Hrs**

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	Students will be able to recall commands and algorithms used in solving problems.	Introducing new ideas through case study Lectures Class Discussions	Quizzes I II Midterm Exams Final Exams Homework assignments
1.2	Students will be able to demonstrate knowledge of procedures and algorithms used in mathematical packages.		
2.0	**Skills**		
2.1	Students will be able to use computational		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	procedures to find the solution to problems.	Lectures Class Discussions	Quizzes I II Midterm Exams Final Exams Homework assignments.
2.2	Students will be able to apply a syntax of built-in functions in some branches of Mathematics, Physics, Chemistry and Engineering Science		
2.3	The students will be able to communicate algorithms for solving mathematical problems.		
3.0	**Values**		
3.1	Students will be able to work effectively in groups.	Lectures Class Discussions Group discussion	Quizzes Homework assignments Group work

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Activities	Weekly basis	5%
2	Homework	Weekly basis	5%
3	Quizzes	Weekly basis	10%
4	Mid Exam1	6th week	20%
5	Mid Exam2	11th week	20%
6	Final Exam	At end of the Semester	40%

***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 :
Six office hours per week in the lecturer schedule.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Wolform S., The Mathematica book,Wolform Media/Cambridge University press, New York, 2003 (5th ed). Exist in Help of Mathematica5 program
Essential References Materials	None
Electronic Materials	www.wolform.com
Other Learning Materials	None

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	1.Computer lab with maximum capacity of 30 students and equipped with White Board, Overhead projector and internet connection.

Item	Resources
	2.Library
Technology Resources (AV, data show, Smart Board, software, etc.)	Projectors
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	None

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Direct and Indirect
Extent of achievement of course learning outcomes	Teachers	Direct
Quality of learning resources	Students	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	The Curriculum committee
Reference No.	
Date	25/08/2021