Course Specifications

Course Title:	**Visual Programming for Mathematics Students**
Course Code:	**MATH 2301**
Program:	**Bachelor of Science in Mathematics**
Department:	**Mathematics**
College:	**College of Science and Humanities Alkharj**
Institution:	**PRINCE SATTAM BIN ABDUALZIZ UNIVERSITY**

Table of Contents

A. Course Identification

1. Credit hours:	05(3,0,2)

2. Course type

a.	University	☐	College	☐	Department	✓	Others ☐
b.		Required	✓	Elective	☐		

3. Level/year at which this course is offered: Level 5

4. Pre-requisites for this course (if any)**:**

1400 TC, Math 1060

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**	05	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	36
2	**Laboratory/Studio**	24
3	**Tutorial**	0
4	**Others** (specify) – (5 Office Hours in a week)	60
	Total	120

B. Course Objectives and Learning Outcomes

1. Course Description

The course covers the basic programming principles focusing on graphical user interfaces and structured programming techniques. The topics include design interfaces for mathematical applications, using variables and constants to store information, input/output operations, arithmetic operations, arithmetic expressions, sequential, selection, and repetition programming structure, arrays implementation. ,function implementation and other related topics. Upon completion, students should be able to design, code, test, and debug   programs

2. Course Main Objective

1- The course aims to help students gain computer programming knowledge.in Visual Basic and to develop codes to solve mathematical problems and to debug for errors implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field

Course will be reviewed based on the report received from Course Coordinators and curriculum review committee

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Be familiar with the benefits of GUI and OOPS concept	K2
1.2	Able to recall the uses of visual programming tools	K4
2	**Skills :**	
2.1	Able to draw flow chart of applications and write the algorithm or pseudo code for the same	S1
2.2	Design forms for application	S2
3	**Values:**	
3.1	Apprise the contribution of mathematics to society in various fields	V1

C. Course Content

No	List of Topics	Contact Hours
1	Review of History and Development of Computers and importance	6
2	Arithmetic and Logic Operators	4
3	Introduction to SDLC and Flowcharting	6
4	Introduction to Visual Basic, Tools, Form Designing	4
5	Developing Codes	3
6	If…then…Else…Nested if	4
7	Looping structre (For…Next, While…Endwhile, Do…Loopwhile)	9
8	Inbuilt functions – Numeric and String Functions and manipulations	6
9	User defined functions – Call by value and Call by reference	6
Total		48

D. Teaching and Assessment

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

Code	Course Learning Outcomes	TeachingStrategies	AssessmentMethods
1.0	**Knowledge and Understanding**		
1.1	Be familiar with the benefits of GUI and OOPS concept	1. Class Room Lectures 2. Interactive sessions 3. Exclusive Office Hours for clearing doubts in small groups	1. Two Internal Exams 2. At least two Quiz 3. End Semester Exam
1.2	Able to recall the uses of programming tools		
2.0	**Skills**		
2.1	Able to draw flow chart of applications and write the algorithm or pseudo code for the same	1. Application oriented exercises 2. Homework to improve the analytical skills	1. Homework 2. Assignments 3. Quiz 4. Exams
2.2	Design forms for application		
3.0	**Values**		
3.1	Apprise the contribution of mathematics to society in various fields	Group Discussion during lectures and Interactive Session	Homework to be given so that the students discuss among themselves or refer materials from textbook to find solution

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid Term Exam I	6	20%
2	Quiz	4 & 10	5%
3	Mid Term Exam II	13	20%
4	Continuous Assessment – Homework, Assignment, Attendance etc.	--	5%
5	End Semester Exam	15	50%

*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 :

1.   Exclusive Office Hours – 5 Hours per week
2.   Academic Advising for Students – 1 Hour per week

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	- Visual basic2010 how to program, Deitel&Deitel - Simply Visual Basic 2008 (3rd Edition), Paul Deitel - Visual C# 2010 How to Program (4th Edition), Harvey Deitel
Essential References Materials	NIL
Electronic Materials	Paul's online series
Other Learning Materials	Lecture Notes Prepared by the Department of Mathematics

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms with Smart boards with seating facilities for at least 30 students
Technology Resources (AV, data show, Smart Board, software, etc.)	Smartboard, Internet Connection for Blackboard Computer Lab with software packages such as Excel etc.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Nil

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course Evaluation	Quality Assurance Committee of the Department	Review all the course documents and course report
Peer Review	Senior Faculty Members / HoD	Attend the lecture and fill in a form
End Semester online survey	students	online survey

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes,Quality oflearning resources, etc.)
Evaluators (Students,Faculty, Program Leaders,Peer Reviewer, Others (specify)
Assessment Methods(Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	