Course Specification
(CS)

Introduction to Mathematics (140 Math-2)
1st Semester - 1439-1440 H

Course Specifications

Institution: Najran University	Date of Report: 27/12/1439H
College/Department : **Deanship of Preparatory Year / Department of Mathematic Skills**	

A. Course Identification and General Information

1. Course title and code: **Introduction to Mathematics (140 Math-2)**			
2. Credit hours: **2 Hours**			
3. Program(s) in which the course is offered. **Preparatory Year Program**			
4. Name of faculty member responsible for the course: **Dr. Akram A.M. Naji**, **Dr. Khaled Ibrahim Adam Ahmed**, **Dr. Sulima Mohammed Awad**			
5. Level/year at which this course is offered: **Level 1**			
6. Pre-requisites for this course (if any) :			
7. Co-requisites for this course (if any) : --			
8. Location if not on main campus: **Main Campus, Deanship of Preparatory Year**			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom		What percentage?	
b. Blended (traditional and online)	√	What percentage?	%80
c. e-learning	√	What percentage?	%20
d. Correspondence		What percentage?	
f. Other		What percentage?	
Comments:			

B. Objectives

1. What is the main purpose for this course? - **Students able to build strong and sound understanding of Pre-calculus as a solid foundation for subsequent courses in mathematics and other disciplines as well as for applying in the real life.**
2. Briefly describe any plans for developing and improving the course that being implemented. - Self-study (lecture videos) - Online Books and Lecture Notes - Blackboard (eLearning)

C. Course Description

Course Description: This course is designed to cover topics in Algebra enhanced with pre-algebra topics such as arithmetic, fractions, and word problems as need, Trigonometry concepts such as Law of Sines and Cosines will be introduced. Topics include real numbers, linear equations and inequalities in one variable, polynomials, factoring, algebraic fractions, and quadratic equations, review of manipulative algebra; introduction to functions and graphs, including linear, quadratic, rational functions, logarithmic and exponential, and trigonometric functions.

1. Topics to be Covered		
List of Topics		
Course Description	No. of Weeks	Contact Hours
Chapter 1:		
1.1 Sets and Real Numbers.	1	3
1.2 Exponents and Radicals		
1.3 Rational Expressions.	2	3
Chapter 2:		
2.1 Linear Equations and Applications.	3	3
2.2 Linear Inequalities	4	3
2.3 Equations and Inequalities Involving Absolute Value	5	3
2.4 Quadratic Equations and Applications.	6	3
Chapter 3:		
3.1 Functions	7	3
3.2 Polynomials and Rational Functions		
3.5 Combining Functions	8	3
3.6 Inverse Functions	9	3
Chapter 4:		

4.1 Exponential Functions	10	3
4.2 Logarithmic Functions	11	3
4.3 Logarithmic and Exponential Equations	12	3
Chapter 5:		
5.1 Degree and Radian Measure	13	3
5.2 Trigonometric Functions		
5.3 Trigonometric Identities	14	3

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other :	Total
Contact Hours	3					45 hours
Credit	2					2

3. Additional private study/learning hours expected for students per week. 8 hours

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Describe the basic concepts of equations, inequalities, and functions, and their rules, which will be cover in this course.	Lecture Cooperative learning Problem solving Brain storming Self-Learning.	First exam Second Exam Final Exam
2.0	Cognitive Skills:		
2.1	Solve the equations and the inequalities, with Absolut value in one variable.	Lecture Cooperative learning Problem solving Brain storming Self-Learning.	First exam Second Exam Final Exam
2.2	Find the domain, the range, and the inverse of a function and their properties to sketch curve of it		
2.3	Apply the properties of exponential and logarithmic functions for specific equations and applications		
2.4	Evaluate trigonometric functions for general angles in degree and radian measure.		

6. Schedule of Assessment Tasks for Students During the Semester			
Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)		Week Due	Proportion of Total Assessment
1	Midterm Exam	Fifth week	25
2	Homework	Eleventh week	25
3	Final Exam	Eighteenth week	50
Total			100%

D. Student Academic Counseling and Support :

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
   - **Office hours.**

E. Learning Resources :

1. List Required Textbooks :
   - Pre-Calculus Made Simple, A. H. Khashan, S. T. Obeidat and, K. H. Khashan, The King Saud University, 2nd Edition Year: 2014.

2. List Essential References Materials

3. List Recommended Textbooks and Reference Material
   - College Algebra with Trigonometry, 8e by Raymond Barnett Michael Ziegler Karl Byleen.
   - College Algebra and Trigonometry: Graphs and Models, by Raymond Barnett Michael Ziegler Karl Byleen.
   - Pre-calculus: Graphs and Models, 3e by Raymond Barnett Michael Ziegler Karl Byleen David Sobecki

4. List Electronic Materials
   - http://www.understandingcalculus.com/
   - http://www.math.temple.edu/~cow/
   - http://www.onlinemathlearning.com/calculus-help.html
   - http://www.mastermathmentor.com/calc/abexams.ashx
   - http://www.math.hmc.edu/calculus/tutorials/
   - http://archives.math.utk.edu/visual.calculus/index.html
   - http://www.sosmath.com/calculus/calculus.html
   - http://tutorial.math.lamar.edu/Classes/CalcI/CalcI.aspx
   - http://www.calculus-help.com/tutorials/
   - http://www.analyzemath.com/calculus.html

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
   - Wolfarm Mathematica 8.0

F. Facilities Required :

Indicate requirements for the course including size of classrooms and laboratories • A Lecture Room appropriate for 25 students with Data Show and Smart Board.
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc ،

2. Computing resources • One computer in each classroom connected to the Internet • Data show • Smart board
3. Other resources)

G Course Evaluation and Improvement Processes :

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching • An open questionnaire is carried out at the end of the year to get the students' feedback about the points of strength and weakness in the course • Statistical data about the students' results • The college and department follow up on the teaching process. • Open dialogue with the students to get their feedback on how the course succeeded on achieving its goals(Students' conference)
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor • Students evaluate the course electronically at the end of the year • Evaluating the performance of the students' home assignments and worksheets
3 Processes for Improvement of Teaching • Attending the relevant training courses to the topics of the course • Attending workshops to facilitate sharing experience among the teaching staff • Preparing a schedule for meetings for the colleagues to discuss some issues and find solutions to them • Encouraging teaching staff to attend professional development conferences in their specialization
4. Processes for Verifying Standards of Student Achievement • The students' answer sheets are marked and checked • The answer sheets are rechecked and filtered by another colleague(different from the first Marker) • Choosing another random sample for a second revision and checking to insure the accuracy of marking and revision • Putting the marks on the answer sheets • Revising the papers and marks foe another time on the answer sheets then writing marks in lists then uploading them on the computer and comparing the results with the original answer sheets of the students • If the students objects to the mark he got ,he can compare his paper with those who higher marks • Comparing marks from section to section

• Comparing between the students' results of the Boys college with that of the Girls college
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Comparison of the syllabuses and course specification in other universities • Comparing the objectives of the course with the degree of the benefit the students achieved • Coordination with teachers from other universities to benefit from their special experience in developing the course • Holding a discussion among the teaching staff members (Boys – Girls) to give their opinions on the course • Developing the scientific material by adding the most up to - date versions and excluding the old ones.

Faculty or Teaching Staff يذكر هنا اسم القائمين بتدريس المقرر	Received by يذكر هنا اسم المسؤول عن المراجعة	Dean/Department Head يذكر هنا اسم رئيس القسم
Dr. Khaled Ibrahim Adam Ahmed **Dr. Sulima Mohammed Awad**	**Dr. Abdu Moh. Ali Cahis**	**Dr. Akram A.M. Naji**
		27/12/1439H