Islamic University Of Gaza  
Faculty of Science  
Department of Mathematics  
Calculus A ( MathA1401)  
Syllabus

Semester: Fall 2012  
Instructor Name: Prof. Dr. Ayman Hashem Sakka  
Office: B111  
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Office Hours: Saturday : 11-13  
Sunday: 10-11  
Monday : 13-14  
Wednesday: 11-13  
References: (1) http://archives.math.utk.edu/visual.calculus/  
(2) Any calculus Book.

Exams and Grading:  
• Quizzes (10%)  
• First Midterm Exam: 9/10/2012 (20%)  
• Second Midterm Exam: 20/11/2012 (20%)  
• Final Exam : 22/ 12/2012 (50%)  

Prerequisites: None.

Course Description:  
• Functions  
• Limits and continuity  
• Differentiation  
• Applications of derivatives  
• Integration  
• Applications of integration  

Aims of the course:  
• To learn the basic properties of real numbers.  
• To understand the concept of function and the basic properties of trigonometric functions.
• To understand the limit of a function and to learn how to find it algebraically.

• To understand the definition of derivative and its geometric interpretation.

• To learn the rules of differentiation.

• To learn how to use derivatives to find the extreme values of functions and to graph them.

• To understand the concept of definite and indefinite integrals and how to evaluate some simple integrals.

• To learn how to use integrals to find the area between two curves, volumes, surface area, and length of curves.

**Method of teaching:** Lectures, discussions, and exams.

### Course outline

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<th>Sections to be covered</th>
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<td>1st week 1 /9-5/9</td>
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<td>9th week 27/10-31/10</td>
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<td>2nd week 8/9-12/9</td>
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<td>10th week 3/11-7/11</td>
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<td>3rd week 15/9-19/9</td>
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<td>11th week 10/11-14/11</td>
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<td>12th week 17/11-21/11</td>
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<td>13th week 24/11-28/11</td>
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<td>6th week 6/10-10/10</td>
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<td>7th week 13/10-17/10</td>
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<td>15th week 8/12-12/12</td>
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<td>8th week 20/10-24/10</td>
<td>3.6, 3.7, 3.9</td>
<td>16th week 15/12-19/12</td>
<td>6.3, 6.4</td>
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**Homework:** Learning calculus is not the same as learning other subjects. You will not be able to learn everything you need in class. You will have to learn a fair amount by yourself. The best way to learn calculus is to practice it. Because of this we ask you do solve a number of problems listed in the following table. We will be very happy to answer your questions about the homework problems during the office hours.