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

Semester: Fall 2012
Instructor Name: Ismail M. El-Astal
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Office Hours: Saturday: 11-12, 9-10
Sunday: 11-12
Monday: 12-13
Wednesday: 11-12
References:
(1) http://archives.math.utk.edu/visual.calculus/
(2) Any calculus Book.

Exams and Grading:
- First Midterm Exam: 9/10/2012 (25%)
- Second Midterm Exam: 20/11/2012 (25%)
- 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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<thead>
<tr>
<th>Weeks</th>
<th>Sections to be covered</th>
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<tr>
<td>1st week 1/9-5/9</td>
<td>1.1</td>
<td>9th week 27/10-31/10</td>
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<td>2nd week 8/9-12/9</td>
<td>1.2</td>
<td>10th week 3/11-7/11</td>
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<td>3rd week 15/9-19/9</td>
<td>1.3</td>
<td>11th week 10/11-14/11</td>
<td>4.3, 4.4, 4.7</td>
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<td>4th week 22/9-26/9</td>
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<td>12th week 17/11-21/11</td>
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<td>5th week 29/9-3/10</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>
<td>2.5, 2.6</td>
<td>14th week 1/12-5/12</td>
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<td>7th week 13/10-17/10</td>
<td>3.1, 3.2, 3.3, 3.5</td>
<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.