

**King Fahd University of Petroleum & Minerals**  
**Department of Mathematics & Statistics**  
**MATH 201-Syllabus**  
**2012-2013 (123)**  
**Course Instructor: .....**

**Coordinators:** Dr. A. Guesmia, Dr. S. Khairul, Dr. A. Laradji

---

**Title:** Calculus III  
**Credit:** 3-0-3  
**Textbook:** Thomas' Calculus (Early Transcendentals), by Thomas, Weir and Hass, 12<sup>th</sup> Edition, Pearson, 2010

**Description:** The concepts studied in this course include solid analytic geometry, vectors and surfaces, differentiation of functions of several variables and multiple integrals.

**Prerequisite:** **MATH 102**  
[Students must review the material in MATH 001/002/101/102 required for MATH 201]

**Grading Policy:**

1. **Exam I:** 25% (100 points), **Date: Tuesday, June 25, 2013.** [Common exam]  
**Material:** 11.1-12.4. **Place:** Building 54, **Time:** TBA.
2. **Exam II:** 25% (100 points), **Date: Sunday, July 14, 2013.** [Common exam]  
**Material:** 12.5-14.6. **Place:** Building 54, **Time:** TBA.
3. **Class Work:** 15% (60 points). It is based on quizzes (around 5 quizzes), homework, or other class activities determined by the class instructor. Any quiz or test under class activity should be of written type, not in the format of MCQ.
4. **Final Exam:** 35% (140 points). [Comprehensive common exam] **Date: Monday, July 29, 2013 at 12:30 p.m.**

**Class Work Average:** The average (x out of 60) of the Class Work of the sections taught by the same instructor should be in the interval [36, 45].

**Exam Questions:** The questions of the common exams are based on the examples, homework problems, recitation problems and the exercises of the textbook.

**Missing Exam I or Exam II:** No makeup exam will be given under any circumstance. When a student misses Exam I or Exam II for a legitimate reason (such as medical emergencies), his grade for this exam will be determined based on the Department policy. Further, the student must provide an official excuse within one week of the missed exam.

**Attendance:** Attendance is a University Requirement. A DN grade will be given to any student who accumulates **8 unexcused absences**.

**Academic Integrity:** All KFUPM policies regarding ethics apply to this course. The students are advised to discuss their grievances/problems with their course instructor in a respectful manner.

*The course instructor has the right to report a student's misconduct in class, instructor's office or at the exam site to the chairman's office. The complaint will be forwarded to the Dean of the College of Sciences & the Dean of Student Affairs for appropriate investigation.*

**MATH 201 Syllabus  
2012-2013 (123)**

<b>Week</b>	<b>Date</b>	<b>Sec.</b>	<b>Text Sections (25)</b>
1	June 8-13 [Note: Thursday 13 June is a normal Sunday class]	11.1 11.2 11.3 11.4 11.5	Parameterizations of Plane Curves Calculus with Parametric Curves Polar Coordinates Graphing in Polar Coordinates Areas and Lengths in Polar Coordinates
2	June 15-20 [Note: Thursday 20 June is a normal Monday class]	12.1 12.2 12.3 12.4	Three-Dimensional Coordinate Systems Vectors The Dot Product The Cross Product
3	June 22-26	12.5 12.6 14.1	Lines and Planes in Space Cylinders and Quadric Surfaces Functions of Several Variables
<b>Exam I: June 25; Material [11.1 – 12.4]</b>			
4	June 29-July 3	14.1 14.2 14.3 14.4	Continued Limits and Continuity in Higher Dimensions Partial Derivatives The Chain Rule
5	July 6-10	14.5 14.6 14.7	Directional Derivatives and Gradient Vectors Tangent Planes & Differentials Extreme Values and Saddle Points
6	July 13-17	14.8 15.1 15.2	Lagrange Multipliers Double and Iterated Integrals over Rectangles Double Integrals over General Regions
<b>Exam II: July 14; Material [12.5 – 14.6]</b>			
7	July 20-24	15.3 15.4 15.5 15.7	Area by Double Integration Double Integrals in Polar Form Triple Integrals in Rectangular Coordinates Triple Integrals in Cylindrical and Spherical Coordinates
8	July 27	15.7	Continued <b>Review/Catch up</b>
<b>Final Exam: (Comprehensive)</b>			

## Homework/Practice Problems: Math 201 (122)

**Note:** Each Class Instructor will announce the Weekly Homework Problems from the following list or other sources as may be determined by him.

Section	Suggested HW/Practice Problems from the Text
11.1	2,5,9,13,21,24,26
11.2	5,8,11,16,18,22,23,25,28,32
11.3	3,7,14,22,34,40,59,62
11.4	4,8,10,13,20,22,29
11.5	5,7,9,14,16,21,24,28
12.1	8,12,19,42,48,53,57,62
12.2	9,12,13,19,29,52
12.3	2,6,11,14,27,45,49
12.4	3,12,17,20,36,39,43,47,48
12.5	1,4,9,15,22,24,27,30,34,41,47,54,58
12.6	1-12,16,18,23,30,40
14.1	3,6,11,14,23,26,30
14.2	9,13,16,27,32,34,43,48,51,58
14.3	12,16,,26,31,44,49,52,59,65
14.4	2,7,10,12,17,26,30,36,38
14.5	5,8,12,16,20,26,31,35
14.6	2,10,15,26,33,36,41
14.7	1,5,8,20,27,31,33,36,43,52
14.8	1,9,14,24,33,34,38
15.1	1,5,10,,14,18,20,24,27
15.2	3,6,13,17,19,24,37,42,48,51,52,60,63,64
15.3	3,5,9,13,16,18, 19,21
15.4	12,17,19,23,25,29,33,35
15.5	9,12,16,23,26,,33,35,38
15.7	2,5,9,14,17,18,21,24,28,37,38,40,49

### Note

Students are encouraged to do **Word & CAS** problems which may require the use of a technology tool (e.g., graphing calculators or a computer). These problems enhance understanding of the concepts involved.

#### Tips on how to enhance your problem-solving abilities (by compliments of Dr. Al-Rasasi)

1. Do all the homework assignments on time.
2. Practice (but not memorize) more problems than the above lists.
3. Try to solve a problem on your own before reading the solution or asking for help.
4. If you find it difficult to handle a certain type of problems, you should try more problems of that type.
5. Review the last lecture before coming to class.
6. Solve some of the review problems at the end of each chapter.
7. Practicing homework problems and reviewing the class lectures will make exam problems easier to tackle.
8. Visit your instructor in his office hours. Always bring partial solution of the questions which you want to discuss with your instructor.