

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

SYLLABUS

Semester I, 2007-2008 (071)

Coordinator: Dr. Muhammad Yousuf

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Course #: Math 201
Title: Calculus III
Textbook: Calculus (Early Transcendentals): by James Stewart; **Fifth edition (2003)**
Course Description: Math 201 is a continuation of Math 101 (Calculus I) and Math 102 (Calculus II). These courses are designed as an introduction to the fundamental concepts of calculus and analytic geometry. The concepts studied in Math 201 include solid analytic geometry, vectors and surfaces, differentiation of functions of several variables and multiple integrals.

| Week | Date | Sec. # | Topics |
|---|--------------|--------------|---|
| 1 | Sep 8-12 | 10.1 10.2 | Curves Defined by Parametric Equations Calculus with Parametric Curves |
| 2 | Sep 15-19 | 10.3 10.4 | Polar Coordinates Areas and Lengths in Polar Coordinates |
| 3 | Sep 22-26 | 12.1 12.2 | Three-Dimensional Coordinate Systems Vectors |
| 4 | Sep 29-Oct 3 | 12.3 12.4 | The Dot Product The Cross Product |
| Oct. 04 -19: Eid al-Fitr Vacation | | | |
| 5 | Oct 20-25* | 12.5 12.6 | Equations of Lines and Planes Cylinders and Quadric Surfaces |
| Major Exam I: Sunday, October 28, 2007 | | | |
| 6 | Oct 27-31 | 12.6 12.7 | Continued Cylindrical and Spherical Coordinates |
| 7 | Nov 03-07 | 14.1 14.2 | Functions of Several Variables Limits and Continuity |
| 8 | Nov 10-14 | 14.3 14.4 | Partial Derivatives Tangent Planes & Linear Approximation |
| 9 | Nov 17-21 | 14.5 14.6 | The Chain Rule Directional Derivatives and the Gradient Vector |
| 10 | Nov 24-28 | 14.6 14.7 | Continued Maximum and Minimum Values |
| Major Exam II: Sunday, December 02, 2007 | | | |
| 11 | Dec 01-05 | 14.8 15.1 | Lagrange Multipliers Double Integrals over Rectangles |
| 12 | Dec.08-12 | 15.2 15.3 | Iterated Integrals Double Integrals over General Regions |
| Dec 13-28: Id al-Adha Vacation | | | |
| 13 | Dec29-Jan02 | 15.3 15.4 | Continued Double Integrals in Polar Coordinates |
| 14 | Jan 05-09 | 15.7 15.8 | Triple Integrals Integrals in Cylindrical and Spherical Coordinates |
| 15 | Jan.12-16 | - | Review/ Catch up |

* September 23 is a national holiday.

* October 25 is a normal Saturday classes.

- The dates for Major Exams I and II are set by the College of Sciences to avoid conflicts with other exams.
- The date, time and the place of the Final Examination will be announced by the Registrar. The Final Exam will be Comprehensive.
- KFUPM policy with respect to attendance (**lectures and recitations**) will be strictly enforced.

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
Math 201, Semester 071
Suggested Homework Problems

| Sec. # | Suggested Homework Problems |
|---------------|------------------------------------|
| 10.1 | 2,3,6,11,24,26,28 |
| 10.2 | 5,8,13,36,43 |
| 10.3 | 9,16,22,29,40,48,54 |
| 10.4 | 3,6,8,12,31,35,40 |
| 12.1 | 6,10,14,18,21,23,25,29,37,41 |
| 12.2 | 1,4,8,18,24,28,32 |
| 12.3 | 1,2,4,8,10,11,14,17,23,37,41,52 |
| 12.4 | 2,9,12,26,33,36,39,45 |
| 12.5 | 1,3,15,16,17,30,38,51,61,73 |
| 12.6 | 2,5,9,11,21-28 |
| 12.7 | 4,10,13,20,23,28,34,36,50 |
| 14.1 | 1,2,6,11,30,32 |
| 14.2 | 3,7,10,11,28,37,39 |
| 14.3 | 1,4,5,16,21,51,66,83 |
| 14.4 | 2,12,16,20,24,31 |
| 14.5 | 4,8,16,17,22,28,36 |
| 14.6 | 3,5,9,15,23,27,36,38,41,48 |
| 14.7 | 1,3,5,11,37 |
| 14.8 | 1,4,10,23,25,39 |
| 15.1 | 3,6,8,12,17 |
| 15.2 | 4,5,8,11,14,19 |
| 15.3 | 3,5,10,16,24,39,43,50,52 |
| 15.4 | 1,3,7,10,18,21,33,36 |
| 15.7 | 3,8,16,23,26,29,31,38 |
| 15.8 | 3,8,9,18,33,36 |

- The students are strongly urged to solve much more problems than the homework listed above.