

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

SYLLABUS MATH 301
Semester 092
Coordinator: F. D. Zaman

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| Course | Math 301 |
| Title | Methods of Applied Mathematics |
| Textbook | Advanced Engineering Mathematics by Zill and Cullen (Third Edition, 2006). |

| Week | Date | Sec. | Material | Homework |
|--|----------------------|-------------------|---|---|
| 1 | Feb. 20-24, 2010 | 9.1 9.5 9.7 | Vector Functions The Directional Derivative Divergence and Curl | 3,11,20,25,28,41 3,6,9,13,21,30 8,14,23,30 |
| 2 | Feb. 27- March 03 | 9.8 9.9 | Line Integrals Independent of the Path | 5,10,16,22,30 7,15,18,23,28 |
| 3 | March 06- 10 | 9.12 9.13 | Green's Theorem Surface Integrals | 2,6,17,25 3,11,26,33 |
| 4 | March 13- 17 | 9.14 9.16 | Stokes' Theorem Divergence Theorem | 3,6,14,17 2,4,11 |
| 5 | March 20- 24 | 4.1 4.2 | Definition of the Laplace transform Inverse Transform, Transforms of Derivatives | 3,5,17, 29,33,38 5,13,15,19,35,36 |
| First Major Exam Saturday, March 27, 2010 | | | | |
| 6 | March 27- 31 | 4.3 4.4 4.5 | Translation Theorems Additional Properties Dirac Delta Function | 8,13,20,24, 47,60,66 5,16,19,23,34, 45 4,8,12 |
| 7 | April 03 -07 | 12.1 12.2 | Orthogonal Functions Fourier Series | 6,12,16,18 4,6,16,20 |
| 8 | April 10- 14 | 12.3 | Fourier Cosine and Sine Series | 4,6,14,16,26,38 |
| Mid Semester Break April 17 - 21 | | | | |
| 9 | April 24-28 | 12.5 | Sturm-Liouville Theorem | 2,4,6,8,14 |
| Second Major Exam Saturday May 01, 2010 | | | | |
| 10 | May 01-05 | 12.6 | Bessel and Legendre Series | 2,4,6,8,10,20 |
| 11 | May 08-12 | 13.1 13.3 | Separable Partial Differential Equation Heat Equation | 2,10,14,18,20,24,28 2,4,6 |
| 12 | May 15-19 | 13.4 13.5 | Wave Equation Laplace's Equation | 2,4,6,8,10 2,4,8,10,14 |
| 13 | May 22-26 | 14.2 14.3 | Problems in Polar and Cylindrical Coordinates Problems in Spherical Coordinates | 2,4,8,10 4,6,12 |
| 14 | May 29-June 02 | 15.2 | Applications of the Laplace Transform | 6,8,10,14,27 |
| 15 | Jan 05- 09 | 15.4 | Fourier Transforms | 6,10,12,16,18 |

Important Dates and About Mid term Exam Dates

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| • Mid term exam dates are set by the College of Science for coordinated exams. | |
| March 3 | Last day for dropping course(s) without permanent record |
| March 31 | Last day for dropping course(s) with grade of "W" thru http://regweb.kfupm.edu.sa |
| May 5 | Last day for withdrawal from all courses with grade of "W" thru the Registrar Office |
| June 2 | Last day for withdrawal from all courses with grade of "WP/WF" thru the Registrar Office |