

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

SYLLABUS MATH 301

Semester 103

Instructor: M. Yousuf

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

| Week | Date | Sec. | Material | Homework |
|---|------------------|------------------------------|---|--|
| 1 | June 25 – 29 | 9.1 9.5 9.7 9.8 | Vector Functions The Directional Derivative Divergence and Curl Line Integrals | 3,11,20,25,28,41 3,6,9,13,21,30 8,14,23,30 5,10,16,22,30 |
| 2 | July 02 – 06 | 9.9 9.12 9.13 9.14 | Independent of the Path Green's Theorem Surface Integrals Stokes' Theorem | 7,15,18,23,28 2,6,17,25 3,11,26,33 3,6,14,17 |
| 3 | July 09 – 13 | 9.16 4.1 4.2 4.3 | Divergence Theorem Definition of the Laplace transform Inverse Transform, Transforms of Derivatives Translation Theorems | 2,4,11 3,5,17, 29,33,38 5,13,15,19,35,36 8,13,20,24, 47,60,66 |
| First Major Exam Saturday, July 16, 2011 | | | | |
| 4 | July 16 – 20 | 4.4 4.5 12.1 12.2 | Additional Properties Dirac Delta Function Orthogonal Functions Fourier Series | 5,16,19,23,34, 45 4,8,12 6,12,16,18 4,6,16,20 |
| 5 | July 23 – 27 | 12.3 12.5 12.6 | Fourier Cosine and Sine Series Sturm-Liouville Theorem Bessel and Legendre Series | 4,6,14,16,26,38 2,4,6,8,14 2,4,6,8,10,20 |
| 6 | July 30 – Aug 03 | 13.1 13.3 13.4 13.5 | Separable Partial Differential Equation Heat Equation Wave Equation Laplace's Equation | 2,10,14,18,20,24,28 2,4,6 2,4,6,8,10 2,4,8,10,14 |
| Second Major Exam Saturday, Aug 06, 2011 | | | | |
| 7 | Aug 06 – 10 | 14.2 14.3 15.2 | Problems in Polar and Cylindrical Coordinates Problems in Spherical Coordinates Applications of the Laplace Transform | 2,4,8,10 4,6,12 6,8,10,14,27 |
| 8 | Aug 13 – 15 | 15.3 15.4 | Fourier Integrals Fourier Transforms | 1,4,10 6,10,12,16,18 |
| Final Exam Tuesday August 16, 2011 at 09:00 am Building 54 | | | | |

Important Dates

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| July 02 | Last day for dropping course(s) without permanent record |
| July 20 | Last day for dropping course(s) with grade of "W" thru http://regweb.kfupm.edu.sa |
| July 27 | Last day for withdrawal from all courses with grade of "W" thru the Registrar Office |
| Aug 10 | Last day for withdrawal from all courses with grade of "WP/WF" thru the Registrar Office |

Note

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| KFUPM attendance policy will be enforced strictly. Final Exam shall be comprehensive. | |
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| webpage http://faculty.kfupm.edu.sa/math/myousuf | |
| Grading Policy: Two Majors each 25%; Quizzes 10%; HW 3%; Attend. 2 %; Final 35% | |