**Course Schedule**

School of Mechanical and Aerospace Eng, Seoul National University (Fall 2008)

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| **Course Number** | 010. 141 | | **Section** |  | **Course Title** | | Engineering Mathematics 2 | **Unit** | 3 |
| **Instructor** | Name : Kim, Hyoun Jin | | | | | website : http://icsl.snu.ac.kr | | | |
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| Office Hour / Place : M 16:00-18:00 / Bldg 301-1035 | | | | | | | | |
| **Schedule** | **Wk** | **Topics** | | | | | | | |
| 1 | Linear systems overview, Vector/matrix, Gauss Elimination | | | | | | | |
| 2 | Vector space, Linear Independence, Rank, Solutions for linear systems | | | | | | | |
| 3 | Determinant, Cramer's rule, Inverse | | | | | | | |
| 4 | Eigenvalues/eigenvectors, Diagonalization, Symmetric matrices | | | | | | | |
| 5 | Summary of linear algebra, Review of Sturm-Liouville problems, Fourier series | | | | | | | |
| 6 | Half-range Expansion, Forced oscillations, Fourier integrals | | | | | | | |
| 7 | Fourier transforms, Summary of Fourier analysis, Partial differential equations overview | | | | | | | |
| 8 | Separation of variables, Wave equation, Heat equation | | | | | | | |
| 9 | Midterm, 2D Wave equation, Double Fourier series | | | | | | | |
| 10 | PDEs in polar coordinates, Summary of PDE, Overview of complex functions | | | | | | | |
| 11 | Analyticity, Cauchy-Riemann equation, Laplace equation, Conformal mapping | | | | | | | |
| 12 | Analytic functions, Line integral, Cauchy's integral theorem | | | | | | | |
| 13 | Independence of path, Cauchy's integral formula, Series, Convergence tests | | | | | | | |
| 14 | Power series & analytic functions, Taylor/Maclaurin series | | | | | | | |
| 15 | Laurent series, Singularity, Residues integration | | | | | | | |