**INS5406 Applied Engineering Mathematics / Homework Topics**:

**Name**: **Number**:

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| Preference No | Topic No | Group Members (if any): |
| 1 |  |  |
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| Topic No | Subject | Submitted by  |
| 1 | Solution of a DE Using B-Spline Differential Quadrature Method | 1-3 people |
| 2 | Solution of a Nonlinear Equation Using “Arc-Length Method” along with “Newton-Raphson Method” (both methods should be used simultaneously in the solution) | 1-3 people |
| 3 | Solution of an ODE Using Adomian Decomposition Method | 1-3 people |
| 4 | Solution of an ODE Using Chebyshev Polynomials | 1-3 people |
| 5 | Solution of an ODE Using Barycentric Rational Interpolation Collocation Method | 1-3 people |
| 6 | Solution of an ODE Using Evolutionary Algorithm | 1 person |
| 7 | Solution of an ODE Using Artificial Neural Networks | 1 person |
| 8 | Solution of an ODE with Variable Coefficients Using Frobenius Method | 1 person |
| 9 | Solution of an ODE Using Monte Carlo Method | 1 person |
| 10 | Solution of an ODE Using Fourier Transform | 1 person |
| 11 | Solution of a Second Order or Higher Order Nonhomogeneous ODE Using Annihilator Method (D Operator Method) | 1 person |
| 12 | Maximum and Minimum Eigenvalues of a Matrix Using Power Method | 1 person |
| 13 | Solution of a Nonlinear Equation Using Steepest Descent Method | 1 person |
| 14 | Solution of a Nonlinear Equation Using Broyden’s Method | 1 person |

DE: differential equation

ODE: ordinary differenntial equation