**352M Numerical Analysis (3+1) credit-hours.**

Prerequisite: 242M ,160 math

Course description(syllabus): Numerical techniques for solving nonlinear equations including the study of error analysis and rate of convergence. Solving systems of linear equations by direct and interative methods. The error estimate for numerical solutions in matrix algebra. Interpolation and approximation with error analysis. Numerical methods for differentiation and integration with the discussion of the accuracy and error estimate.

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|  Topics to be Covered**Syllabus** |
| Topic | No ofWeeks | Contact hours |
| **Error and convergence** | **1.33** | **4** |
| **Numerical methods for nonlinear equations** | **3** | **9** |
| **Interpolation and approximation** | **2** | **6** |
| **Numerical differentiation and integration** | **3** | **9** |
| **Direct methods for Linear systems of equations** | **3** | **9** |
| **Iterative methods for Linear systems of equations** | **2.66** | **8** |
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