**Ankara University**

**Library and Documantation Center**

**Open Courseware**

### Course Schedule

| **Weeks** | **Topics** |
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| Week 1 | Introduction to differential equations (Definitions and Terminology) |
| Week 2 | **Solutions and Existence-Uniqueness Theorems** |
| Week 3 | First Order Ordinary Differential Equations (ODEs)-Separable and Linear Equations |
| Week 4 | Exact Equations-Integrating Factors |
| Week 5 | Homogeneous Equations, Bernoulli Equations, Equations with constant coefficients |
| Week 6 | Differential Equations as models |
| Week 7 | Modelling with firts order ODEs |
| Week 8 | Higher order differential equations |
| Week 9 | Homogeneous differential equations with constant coefficients |
| Week 10 | **Undetermined coefficients**  |
| Week 11 | The method of variation of parameters-Cauchy-Euler Equations |
| Week 12 | Linear Differential Systems |
| Week 13 | Laplace transformations and properties |
| Week 14 | Inverse Laplace Transforms and Solving initial value problems with Laplace transforms |