Lectures:
- Wednesday 11:40-13:30, Thursday 15:40-17:30, Friday 11:40-14:30

Recitations:
- Both sections will be held on Thursday 17:40-19:30

Instructor: Asst.Prof. Sibel ŞAHİN (Office hours: By appointment via email: ssahin@sabanciuniv.edu)

Course Link (Zoom): https://sabanciuniv.zoom.us/j/7917007718

Course Description: This course covers techniques for solving ordinary differential equations (ODE). Topics include first-order ODE, second and higher-order linear ODE, the Laplace transform and if time permits the systems of first-order linear ODE.


Exams: There will be one midterm exam, one final exam and one make-up exam (August 21st). For these proctored exams, your webcam and microphone should be on during the exam. In the case of non-compliance with this and other declared exam procedures, your exam will be void. Make sure to check that your webcam and microphone function properly before the exam.

Make-up policy: There is only one make-up exam for all exams. Anyone who misses an exam can take it. Make-up exam is to be counted for only one of the missed exams. There is no make-up exam for the make-up itself. The number of make-ups that is granted due to sick leave in a semester is one.

<table>
<thead>
<tr>
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<th>Weight</th>
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<tbody>
<tr>
<td>Midterm: July 14th</td>
<td>40%</td>
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<tr>
<td>Final Exam: August 20th</td>
<td>60%</td>
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Attendance: It is not compulsory but strongly recommended.

Academic Honesty: Academic dishonesty is not an acceptable way of conduct and it will not be tolerated. Cheating (such as copying answers from others or using unauthorized materials during an exam) and any dishonest conduct will be immediately reported to Dean’s Office for disciplinary action in accordance with University regulations.
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Sections/Topics Covered</th>
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<tbody>
<tr>
<td>1</td>
<td>July 1-2</td>
<td>Sec. 1.3 Classification of Differential Equations&lt;br&gt;Sec. 2.1 Linear Equations; Method of Integrating Factors&lt;br&gt;Sec. 2.2 Separable Equations&lt;br&gt;Sec. 2.4 Differences Between Linear and Nonlinear Equations&lt;br&gt;Sec. 2.6 Exact Equations and Integrating Factors&lt;br&gt;Sec. 3.1 Homogeneous Equations with Constant Coefficients</td>
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<td>2</td>
<td>July 7-8-9</td>
<td>Sec. 3.2 Solutions of Linear Homogeneous Equations; the Wronskian&lt;br&gt;Sec. 3.3 Complex Roots of the Characteristic Equation&lt;br&gt;Sec. 3.4 Repeated Roots; Reduction of Order&lt;br&gt;Sec. 3.5 Nonhomogeneous Equations; Method of Undetermined Coefficients&lt;br&gt;Sec. 3.6 Variation of Parameters</td>
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<td>3</td>
<td>July 14</td>
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<tr>
<td>4</td>
<td>July 28-29-30</td>
<td>Sec. 4.1 General Theory of ( n )th Order Linear Equations&lt;br&gt;Sec. 4.2 Homogeneous Equations with Constant Coefficients&lt;br&gt;Sec. 4.3 The Method of Undetermined Coefficients&lt;br&gt;Sec. 4.4 The Method of Variation of Parameters</td>
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<td>5</td>
<td>August 4-5-6</td>
<td>Sec. 6.1 Definition of Laplace Transformation&lt;br&gt;Sec. 6.2 Solution of Initial Value Problems&lt;br&gt;Sec. 6.3 Step Functions</td>
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<td>6</td>
<td>August 11-12-13</td>
<td>Sec. 6.4 Differential Equations with Discontinuous Forcing Functions&lt;br&gt;Sec. 6.5 Impulse Functions&lt;br&gt;Sec. 6.6 The Convolution Integral</td>
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<tr>
<td>7</td>
<td>August 18-19-20</td>
<td>Sec. 7.4 Basic Theory of Systems of First Order Linear Equations&lt;br&gt;Sec. 7.5 Homogeneous Linear Systems with Constant Coefficients&lt;br&gt;Review</td>
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**Midterm**

**Final**