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- o First-order ordinary differential equations (DEs)
    - Classification of DEs; initial value problem
    - Existence and uniqueness of initial value problem solutions
    - Separable Des
    - Homogenous Des
    - Linear DEs and integrating factors
    - Exact DEs and the method of integrating factors
    - Numerical approximations: Euler's method.
  - o Applications of first-order differential equations
    - Motion problems
    - Mixing problems

Tabular manner.

3. What to expect?

- o Time: The most common term lengths are listed below; others would be proportionate. Outside of class time is studying, completing homework, reviewing, etc.

<u>Length of term</u>	<u>In-class time</u>	<u>Out-of-class time (typical)</u>	<u>Total hours/wk (typical)</u>	<u>Total Term hours (typical)</u>
<u>17 weeks</u>	<u>4 hrs/wk</u>	<u>8 hrs/wk</u>	<u>12</u>	<u>204</u>
<u>6 weeks</u>	<u>11.3 hrs/wk</u>	<u>22.7 hrs/wk</u>	<u>34</u>	<u>204</u>

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