

**Course Syllabus:** (Chapter section numbers 1.1 etc. refer to the textbook. L 1-2 refers to Lecture Notes available on the web.)

<b>Week 1:</b>	MOTIVATION, CLASSIFICATION, SOLUTION OF DIFFERENTIAL EQUATIONS. EXAMPLES: 1.1, 1.2, L 1-2.
<b>Week 2:</b>	FIRST ORDER ODEs. SEPARABLE, DIRECTION FIELDS. AUTONOMOUS ODEs. EXAMPLES AND APPLICATIONS: 2.2, 1.2, L 3-4.
<b>Week 3:</b>	FIRST ORDER ODEs. LINEAR, EULER METHODS. EXAMPLES: 2.3, 1.2. L 5-6.
<b>Week 4:</b>	APPLICATION TO POPULATION PROBLEMS AND MIXING. 3.1, 3.2, 3.3
<b>Week 5:</b>	APPLICATIONS OF FIRST ORDER ODEs. 3.1-3.5, L 7-10.
<b>Week 6:</b>	HOMOGENOUS 2 <sup>ND</sup> ORDER ODEs. GENERAL SOLUTION. 4.1, 4.2, L 11-15 <b>EXAM #1. 2PM TO 3:15 PM, THURSDAY, FEBRUARY 17<sup>TH</sup>, PAS 201.</b>
<b>Week 7:</b>	HOMOGENOUS 2 <sup>ND</sup> ORDER ODEs. APPLICATION TO FREE MECHANICAL VIBRATIONS. 4.2, 4.3, 4.8, L 11-15.
<b>Week 8:</b>	NONHOMOGENOUS 2 <sup>ND</sup> ORDER ODEs. APPLICATION TO FORCED AND DAMPED VIBRATIONS OF SPRINGS AND ELECTRICAL CIRCUITS, NOTIONS OF RESONANCE. THE Q OF A CIRCUIT. 4.4, 4.9, 5.6, L 16-21.
<b>Week 9:</b>	NONHOMOGENOUS 2 <sup>ND</sup> ORDER ODEs. APPLICATION TO FORCED AND DAMPED VIBRATIONS OF SPRINGS AND ELECTRICAL CIRCUITS, NOTIONS OF RESONANCE. THE Q OF A CIRCUIT. 4.4, 4.9, 5.6, L 16-21.
<b>Week 10:</b>	NONHOMOGENOUS 2 <sup>ND</sup> ORDER ODEs. APPLICATION TO FORCED AND DAMPED VIBRATIONS OF SPRINGS AND ELECTRICAL CIRCUITS, NOTIONS OF RESONANCE. THE Q OF A CIRCUIT. 4.4, 4.9, 5.6, L 16-21.
<b>Week 11:</b>	4.6 METHODS OF VARIATIONS OF PARAMETERS. L 16-21.
<b>Week 12:</b>	PHASE PLANE ANALYSIS. APPLICATIONS TO MIXING, COUPLED CIRCUITS AND THE PENDULUM. 5.1-5.6. L 22-29. <b>EXAM #2. 2PM TO 3:15 PM, THURSDAY, MARCH 31<sup>ST</sup>, PAS 201.</b>
<b>Week 13:</b>	PHASE PLANE ANALYSIS. APPLICATIONS TO MIXING, COUPLED CIRCUITS AND THE PENDULUM. 5.1-5.6. L 22-29.
<b>Week 14:</b>	PHASE PLANE ANALYSIS. APPLICATIONS TO MIXING, COUPLED CIRCUITS AND THE PENDULUM. 5.1-5.6. L 22-29.
<b>Week 15:</b>	PHASE PLANE ANALYSIS. APPLICATIONS TO MIXING, COUPLED CIRCUITS AND THE PENDULUM. 5.1-5.6. L 22-29.

**FINAL EXAM. 3:30PM TO 5:30PM , MONDAY , MAY 9<sup>TH</sup> , PAS 201.**