

# ACADEMIC CALENDAR

## MECHANICS I

SPRING SEMESTER 2019

[http://www.phys.uconn.edu/~rozman/Courses/P3101\\_19S/](http://www.phys.uconn.edu/~rozman/Courses/P3101_19S/)



Last modified: April 17, 2019

The section and the page numbers below refer to the following editions of the course textbooks: **Mor** – David Morin, *Introduction to Classical Mechanics With Problems and Solutions*, Cambridge University Press, 2008; **Gre** – R. Douglas Gregory, *Classical Mechanics*, Cambridge University Press, 2006; **Tay** – John R. Taylor, *Classical Mechanics*, University Science Books, 2005.

MONDAY	WEDNESDAY
Jan 21st	Jan 23rd <b>Lecture 1</b> Course logistics. Solving problems: dimensional analysis, limiting cases (Mor Sec. 1.2, 1.3).
Jan 28th <b>Lecture 2</b> Chase problems. Homework 1 assigned: due Mon Feb 4 Wed Feb 6	Jan 30th <b>Lecture 3</b> Chase problems, II.
Feb 4th <b>Lecture 4</b> Newton's laws (Mor Sec. 3.1). Solving mechanics ODEs (Mor Sec 3.3).	Feb 6th <b>Lecture 5</b> Solving mechanics ODEs, II Homework 2 assigned: due Wed Feb 13
Feb 11th <b>Lecture 6</b> Projectile motion (Mor Sec. 3.4)	Feb 13th <b>Lecture 7</b> Free body diagram (Mor Sec. 3.2) Homework 3 assigned: due Wed Feb 20
Feb 18th <b>Lecture 8</b> Free body diagram, II.	Feb 20th <b>Lecture 9</b> Oscillations (Mor Sec. 4.1-3) Homework 4 assigned: due Wed Feb 27
Feb 25th <b>Midterm I</b>	Feb 27th <b>Lecture 10</b> Coupled oscillators, normal modes, I (Mor Sec. 4.5) Homework 5 assigned: due Wed Mar 6

MONDAY	WEDNESDAY
<div>Mar 4th</div> <div>Lecture 11</div> <div>Coupled oscillators, normal modes, II</div>	<div>Mar 6th</div> <div>Lecture 12</div> <div>Driven oscillations, resonance (Mor Sec. 4.4)</div> <div>Homework 6 assigned: due Wed Mar 13</div>
<div>Mar 11th</div> <div>Lecture 13</div> <div>Driven oscillations, resonance (Mor Sec. 4.4)</div>	<div>Mar 13th</div> <div>Lecture 14</div> <div>Conservation of energy, I (Mor Sec. 5.1)</div>
<div>Mar 18th</div> <div>Spring recess – No classes</div>	<div>Mar 20th</div> <div>Spring recess – No classes</div>
<div>Mar 25th</div> <div>Lecture 15</div> <div>Conservation of energy, II (Mor Sec. 5.2)</div> <div>Motion in plane, polar coordinates (Mor Sec. 3.5)</div>	<div>Mar 27th</div> <div>Lecture 16</div> <div>Conservation of energy, III (Mor Sec. 5.3)</div> <div>Gravity (Mor Sec 5.4)</div> <div>Homework 7 assigned: due Wed Apr 3</div>
<div>Apr 1st</div> <div>Lecture 17</div> <div><b>Midterm II</b></div> <div>Momentum. Conservation of momentum (Mor Sec. 5.5.1)</div> <div>Rocket motion (Mor Sec. 5.5.2)</div>	<div>Apr 3rd</div> <div><b>Midterm II</b></div>
<div>Apr 8th</div> <div>Lecture 18</div> <div>Lagrangian mechanics I. Lagrange equations (Mor Sec. 6.1)</div>	<div>Apr 10th</div> <div>Lecture 19</div> <div>Lagrangian mechanics II. Small oscillations (Mor Sec. 6.7)</div> <div>Homework 8 assigned: due Wed Apr 17</div>
<div>Apr 15th</div> <div>Lecture 20</div> <div>Lagrangian mechanics III. Conservation laws (Mor Sec. 6.5)</div>	<div>Apr 17th</div> <div>Lecture 21</div> <div>The principle of least action (Mor Sec. 6.2)</div> <div>Homework 9 assigned: due Wed Apr 24</div>
<div>Apr 22nd</div> <div>Lecture 22</div>	<div>Apr 24th</div> <div>Lecture 23</div>
<div>Apr 29th</div> <div>Lecture 24</div>	<div>May 1st</div> <div>Lecture 25</div>
<div>May 6th</div> <div>Week of Finals</div>	<div>May 8th</div> <div>Week of Finals</div>