

	Topic	Due	Lecture*
M: 1-16	Geometry and Vectors		L2
W: 1-18	Vectors, Position, Velocity, Acceleration, Speed, Distance Travelled		L2
F: 1-20	Calculus for One Dimensional Motion, Constant Acceleration		L3
M: 1-23	Projectile Motion,		L6
W: 1-25	Relative Motion, Inertial Frames of Reference & Newton's Laws	Mission 1	L5 & L7 & L8
F: 1-27	Applications of Newton's Laws (include circular example, friction)		L8 & L9
M: 1-30	Applications of Newton's Laws (inclined planes, pulleys and more)		L9 & L10
W: 2-1	Applications of Newton's Laws (3 rd Law pairs, terminal velocity)	Mission 2	L11 & L13
F: 2-3	Further Examples		
M: 2-6	Further Examples		
W: 2-8	Further Examples	Mission 3	
F: 2-10	Discussion of Homework		
M: 2-13	Test 1		
W: 2-15	Multivariate Calculus, Work Energy Theorem, Conservative Forces		L15
F: 2-17	Potential Energy, Calculus-based work examples, Energy Analysis		L16 & L18
M: 2-20	Friction and Energy		L17
W: 2-22	Pendulums and Pulleys	Mission 4	L19
F: 2-24	Momentum, Impulse, Center of Mass		L21
M: 2-27	Collisions		L22
W: 3-1	Collisions	Mission 5	L22
F: 3-3	Rocket Propulsion		L24
M: 3-6	Special Relativity		
W: 3-8	Special Relativity	Mission 6	
F: 3-10	Special Relativity		
	SPRING BREAK (a.k.a. "the holidays", 3-13 to 3-17)		
M: 3-20	Further Examples	Mission 7	
W: 3-22	Discussion of Homework		
F: 3-24	Test 2		
M: 3-27	Rotational Motion		L25
W: 3-29	Assessment Day		
F: 3-31	Rotation of Rigid Body, Moments of Inertia, Rolling without Slipping		L26
M: 4-3	Torque and Rotational Dynamics, Analogy with Linear Physics		L27
W: 4-5	Further Examples of Rotational Dynamics		L28
F: 4-7	Cross Product, Torque as Vector, Angular Momentum		L29
M: 4-10	Easter Monday		
W: 4-12	Conservation of Angular Momentum	Mission 8	L30
F: 4-14	Newton's Universal Law of Gravitation, naive version of Kepler's Laws		L31
M: 4-17	Gravitational Pull of Extended objects		
W: 4-19	Bound Orbits and Energy Analysis	Mission 9	L33
F: 4-21	Motion of Satellites		
M: 4-24	General Relativity, Cosmology and Modern Physics		
W: 4-26	General Relativity, Cosmology and Modern Physics	Mission 10	
F: 4-28	Discussion of Homework		
M: 5-1	Test 3		
	Reading Day		
	Final Exams May 4-9, see official university schedule		

- Test 1=150pts, Test 2=150pts, Test 3=150pts
Missions (200pts) / Labs (100pts) / Final = 250pts.
- The Text for this course is the 10th edition of “Physics for Scientists and Engineers” by Serway and Jewett
- Unfortunately, the required text does not have enough homework, so, I have assigned additional recommended homework from Young and Freedman’s 9th Edition Physics textbook. I don’t expect you to buy that textbook (but it is superior to our required text), I provide pdf-scans of the relevant homework problems from select Chapters. If you love physics and want a better textbook for reference, I highly recommend getting a hard copy.
- I am not using WebAssign, all the homework in this course is either collected on paper and graded by humans, or is recommended and not collected.
- The required homework is given as “Missions”, there are 10 Missions this term and they include problems from the text as well as a number of problems which I wrote. I also publish recommended homework problems in the Missions which are not collected, but I recommend you do them. All such problems can be discussed in the Homework Discussion day which happens just before each test. Late Missions are penalized 50%.
- I have some handwritten notes for Physics 231 posted at the course website which is linked at my personal website of www.supermath.info (I do not post these resources in Canvas)
- You are allowed one 3”x5” card with writing only on two sides for Test 1, 2, 3 and the Final.
- No cell phones or similar devices may be out during the exam
- You must be enrolled in a lab section. I will use your lab grade to determine your Final Grade in the course, I don’t plan to publish individual lab grades in the gradebook for this course. At the end of the Semester I’ll put your lab grade into a column.
- You can use a graphing calculator (but only in physics, I would not allow it in any other course I teach)
- You can work together on the homework. However, remember, the purpose of the homework is actually not for you to earn points. The real purpose for homework is for you to learn the concepts of physics and to acquire the mathematical skill requisite to solve university physics problems. Notice, “university” means calculus-based. We use calculus and vectors in this course. If you are rusty on math, then it would be wise to drop this course and finish calculus III before you attempt this course. We use a lot of algebra, trigonometry, basic calculus and we learn new vectors techniques and calculus techniques at a much faster pace than is typical of the calculus course.
- I am here to help. I have office hours where you can ask me about problems you have **already attempted**. Please do not plan to work problems in my office, you are welcome to ask questions, but, it is better if you study somewhere else. To summarize: office hours are for questions.