

Syllabus and Information for Physics 201 - Fall 2007 J.E. Johnson, PhD

The Class Web site is the **Physics 201** tool bar at the top of www.asg.sc.edu

Date of each lecture and the Chapter in the Text: Physics, Cutnell & Johnson 7th Edition:

Lecture	Date	Day	Chapter	Concepts
1	Aug 23	Th	1& Math	First Day of Class
2	Aug 28	Tu	1	
3	Aug 30	Th	2	
4	Sep 4	Tu	2-3	
5	Sep 6	Th	3	
6	Sep 11	Tu	4	
7	Sep 13	Th	4	
8	Sep 18	Tu	Exam 1	
9	Sep 20	Th	5	
10	Sep 25	Tu	6	
11	Sep 27	Th	6	
12	Oct 2	Tu	7	
13	Oct 4	Th	8	
14	Oct 9	Tu	8	
15	Oct 11	Th		Fall Break No Class
16	Oct 16	Tu	Exam 2	
	Oct 18	Th	9	
17	Oct 23	Tu	10	
18	Oct 25	Th	10	
19	Oct 30	Tu	11	
20	Nov 1	Th	12	
21	Nov 6	Tu	13	
22	Nov 8	Th	Exam 3	
23	Nov 13	Tu	14	
24	Nov 15	Th	15	
25	Nov 20	Tu	15	
	Nov 22	Th		Thanks Giv no class
26	Nov 27	Tu	16	
27	Nov 29	Th	Exam 4	
28	Dec 4	Tu	17	
29	Dec 6	Th	17	Last 202 Class
	Dec 7	Friday		Last Day of Class Final Exams

There are 29 classes on TT

Course Requirements and Guidelines:

Lectures:

There are 29 total class lectures and 4 of these are exams

Lecture Attendance is required and all exams must be taken

Text: 'Physics' Cutnell & Johnson 7th ed. is the text. It is followed sequentially.

Exams:

There are 4 exams of one hour each that count 100 points each.

You are allowed a 'one memory, non programmable calculator' for tests and pencils.

You are NOT allowed any other material or notes - even blank paper.

You are NOT allowed a cell phone, or other device of any type or form (such as wireless devices, PDAs, computers, notes, information, or Blackberry type devices at your seat.

Possession at your desk during exams of anything other than the calculator & pencils is considered a violation of the honor code.

Makeup exams for extenuating circumstances are longer & carry a penalty.

The final is cumulative, two hours, and counts 200 points. There is normally no curve.

Grades:

Anyone who takes all 4 exams in the scheduled class times may elect to take their average of those 4 grades and the final is exempted. (No CAPA or other extra points can be used here).

Another grade is computed by dropping the lowest of the four grades and taking the three highest exams plus the final (based on 200 pts), plus any extra points, & dividing by 5. If you achieve over 50% of the CAPA problems, some extra credit (to be determined) will be then added for the course average). NOTE These CAPA points and other extra points are only used if the final is taken and used for the grade computation.

The higher of these two grades, as computed above, will be your final grade.

Thus A is ≥ 90 (actually an 89.50 or higher) , B is ≥ 80 etc.

I use '+' grades for B+ (>87.50 ie 88) & C+ (>77.50 ie 78) (but not for D).

Lab Grades are assigned separately and constitute a separate course of 1 hour.

The class web site is the Physics 201 tool bar at the top of www.asg.sc.edu
Consult this site for copies of the class notes, past exams, and other information

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Purpose of Physics 201 - 202

This course is not a 'tech school' course but a demanding and hopefully enriching major university course developing a broad base of technical knowledge and insights, coupled with new methods of thinking.

Specifically we seek:

1. To learn the foundational laws of nature and science that underlie, not just Physics, but by virtue of being foundational, underlie also Chemistry, Biology, Geology, Engineering, Biology, Medicine, Health Science, and other scientific fields. Specifically we seek to understand this underlying theoretical structure along with its successes and current limitations.
2. To learn specifically the fundamental concepts, their definitions, their experimental and theoretical relationships among one another (equations), fundamental values, associated constants and units.
3. To become experienced in estimation, numerical uncertainty, order of magnitude estimation, and problem solving.
4. To learn how 'science' operates: the interplay of theory and experiment and the linking of a theoretical model with reality, thus the harmony with existing data and prediction of new data.
5. To experience mathematics as a tool of theoretical modeling, prediction, measurement – ie with mathematics as a language.
6. To learn how to think analytically and synthetically: what to question and how, and how to identify what should be generally accepted and thus questioned less often. To build ability and an associated confidence in reasoning in new domains.
7. To learn a sense of history, and the role of science and technology in the historical evolution of man and civilization.
8. To understand how the human view of nature comprises a limited domain for mass, acceleration, velocity, length, time, gravitation, color of light or frequency of sound, etc. Especially to learn how our senses translate stimulus and register its logarithm.

Recommendation of how to learn the most with the least effort:

1. Preview material prior to each class: We will follow the text and the syllabus. Prior to each class, preview the material for the next class even if just for 10 minutes. That way, you know what is in the book and what things are important about those concepts. One will get an overview of the material to be covered and this makes it far easier to rapidly assimilate the lecture and to take notes that complement (and do not reproduce) the text.
2. Attend all classes for the entire period: I am not impressed with the taking of voluminous notes, but rather the student who listens, absorbs, and assimilates the lecture. The notes should indicate the areas for concentration, important concepts, things to be ignored, and what will be on the tests. Really listen with full attention.
3. After class but that same day, create a nice set of notes: With your class notes in front of you, your text open to the class material, with your memory of your pre-class reading of the text, the class notes on the web site, and the knowledge learned in class, then make a set of clear neat notes that condenses the class lecture and the text. Use the class web site to keep up to date and print out older pertinent exams etc.
4. Review these condensed notes prior to each exam: Use the condensed notes to review for the exam along with the text. Practice taking the older tests where pertinent. It is always best to study with other students and share information and to explain concepts to others. It is a fact that if you explain something and teach someone else, you will learn more in the process than they do, so never hesitate to help others. In the process of teaching, you will formulate the concepts and relationships more clearly.
5. After each of the four tests, classify your errors into types such as (a) arithmetic or algebraic mistake in calculation, (b) forgot formula, (c) could not convert the word explanation or setting into a mathematical setting, (d) carelessness (eg marking the wrong question or alternative).
6. Never miss class if possible – attendance is required. Never cut a test if possible all tests are required.