

**Department of Physics**  
**Cornell Days 2017**  
April 13 – 14, 17-21, and 24, 2017

**Thursday, April 13**

- 9:05-9:55 or  
11:15-12:05      PHYS 2213 – Physics II, Electromagnetism with Alan Giambattista, 201 Rockefeller Hall  
*~300 students; introductory sequence for scientists and engineers, including physics majors*
- 10:30 – 11:30      Office Hours with Prof. Julia Thom-Levy, 395 Physical Sciences Building

**Friday, April 14**

- 10:10-11:00 or  
12:20-1:10      PHYS 1112 – Physics I: Mechanics and Heat with Robert Fulbright, 201 Rockefeller Hall  
*~250 students; introductory sequence for scientists and engineers, including physics majors*
- 10:10-11:00      PHYS 1116 –Mechanics and Special Relativity with Jim Alexander, 231 Rockefeller Hall  
*~40 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 10:10-11:00      PHYS 2217-Physics II: Electricity and Magnetism with Gennady Shvets  
230 Rockefeller Hall  
*~60 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 10:30 – 11:30      Office Hours with Prof. Itai Cohen, 508 Clark Hall
- 11:15-12:05      PHYS 2218 – Physics III: Waves and Thermal Physics with J.C. Seamus Davis  
231 Rockefeller Hall  
*~30 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 4:15-5:45      Informational Open House for prospective majors. Hosts: Jessi Hersh '19 & Kaiwen Zheng '18  
700 Clark Hall (light refreshments)

**Monday, April 17**

- 10:10-11:00 or  
12:20-1:10      PHYS 1112 – Physics I: Mechanics and Heat with Robert Fulbright, 201 Rockefeller Hall  
*~250 students; introductory sequence for scientists and engineers, including physics majors*
- 10:10-11:00      PHYS 1116 –Mechanics and Special Relativity with Jim Alexander, 231 Rockefeller Hall  
*~40 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 10:10-11:00      PHYS 2217-Physics II: Electricity and Magnetism with Gennady Shvets  
230 Rockefeller Hall  
*~60 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*

There are no events on Saturdays.  
Updated 3/13/17

- 10:30 – 11:30 Office Hours with Prof. Kyle Shen, 532A Clark Hall
- 11:15-12:05 PHYS 2218 – Physics III: Waves and Thermal Physics with J.C. Seamus Davis  
231 Rockefeller Hall  
*~30 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 4:00 – 5:00 General Physics Colloquium Professor Georg Hoffstaetter, Cornell University  
Schwartz Auditorium, 2<sup>nd</sup> Floor Rockefeller Hall

**Tuesday, April 18**

- 9:05-9:55 or  
11:15-12:05 PHYS 2213 – Heat/Electromagnetism with Alan Giambattista, 201 Rockefeller Hall  
*~300 students; introductory sequence for scientists and engineers, including physics majors*
- 10:30 – 11:30 Office Hours with Prof. Peter Wittich, 397 Physical Sciences Building

**Wednesday, April 19**

- 10:10-11:00 or  
12:20-1:10 PHYS 1112 – Physics I: Mechanics and Heat with Robert Fulbright, 201 Rockefeller Hall  
*~250 students; introductory sequence for scientists and engineers, including physics majors*
- 10:10-11:00 PHYS 1116 –Mechanics and Special Relativity with Jim Alexander, 231 Rockefeller Hall  
*~40 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 10:10-11:00 PHYS 2217-Physics II: Electricity and Magnetism with Gennady Shvets  
230 Rockefeller Hall  
*~60 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*
- 10:30-11:30 Office Hours with Prof. Tom Hartman, 434 Physical Sciences Building
- 11:15-12:05 PHYS 2218 – Physics III: Waves and Thermal Physics with J.C. Seamus Davis  
231 Rockefeller Hall  
*~30 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics*

**Thursday, April 20**

- 9:05-9:55 or  
11:15-12:05 PHYS 2213 – Heat/Electromagnetism with Alan Giambattista, 201 Rockefeller Hall  
*~300 students; introductory sequence for scientists and engineers, including physics majors*
- 10:30 – 11:30 Office Hours with Prof. Jim Alexander, 318 Physical Sciences Building

**Friday, April 21**

There are no events on Saturdays.  
Updated 3/13/17

- 10:10-11:00 or  
12:20-1:10      PHYS 1112 – Physics I: Mechanics and Heat with Robert Fulbright, 201 Rockefeller Hall  
~250 students; introductory sequence for scientists and engineers, including physics majors
- 10:10-11:00      PHYS 1116 –Mechanics and Special Relativity with Jim Alexander, 231 Rockefeller Hall  
~40 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics
- 10:10-11:00      PHYS 2217-Physics II: Electricity and Magnetism with Gennady Shvets  
230 Rockefeller Hall  
~60 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics
- 10:30 – 11:30      Office Hours with Prof. Mike Niemack, 389 Physical Sciences Building
- 11:15-12:05      PHYS 2218 – Physics III: Waves and Thermal Physics with J.C. Seamus Davis  
231 Rockefeller Hall  
~30 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics
- 4:15-5:45      Informational Open House for prospective majors. Hosts: Jessi Hersh '19 & Kaiwen Zheng '18  
701 Clark Hall (light refreshments)

**Monday, April 24**

- 10:10-11:00 or  
12:20-1:10      PHYS 1112 – Physics I: Mechanics and Heat with Robert Fulbright, 201 Rockefeller Hall  
~250 students; introductory sequence for scientists and engineers, including physics majors
- 10:10-11:00      PHYS 1116 –Mechanics and Special Relativity with Jim Alexander, 231 Rockefeller Hall  
~40 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics
- 10:10-11:00      PHYS 2217-Physics II: Electricity and Magnetism with Gennady Shvets  
230 Rockefeller Hall  
~60 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics
- 10:30 – 11:30      Office Hours with Prof. Kyle Shen, 532A Clark Hall
- 11:15-12:05      PHYS 2218 – Physics III: Waves and Thermal Physics with J.C. Seamus Davis  
231 Rockefeller Hall  
~30 students; honors level, mainly but not exclusively for prospective majors in physics, astronomy, and engineering physics
- 4:00 – 5:00      General Physics Colloquium with Professor Joshua Frieman, Fermilab and the University of Chicago, The Bethe Lectures, “Probing Cosmic Acceleration with the Dark Energy Survey”  
Schwartz Auditorium, 2<sup>nd</sup> Floor Rockefeller Hall

There are no events on Saturdays.

Updated 3/13/17

## Class Descriptions

### **PHYS 1112 Physics I: Mechanics and Heat**

Forbidden Overlap: Students may receive credit for only one course in the following group: [EAS 1600](#), [PHYS 1101](#), [PHYS 1112](#), [PHYS 1116](#), [PHYS 2207](#).

Prerequisite: [MATH 1910](#), or [MATH 1120](#), or [MATH 1220](#). Recommended corequisite: [MATH 1920](#) in order to continue with [PHYS 2213](#) the following semester. Corequisite: [MATH 1910](#) may be allowed by instructor in exceptional cases, but continuation in [PHYS 2213](#) will then have to be deferred until [MATH 1920](#) is completed. Primarily for students in engineering, physics or related subjects. Students interested in majoring in Engineering Physics or Physics, and who have a strong physics and mathematics background are encouraged to consider [PHYS 1116](#).

First course in a three semester introductory physics sequence. Covers the mechanics of particles with focus on kinematics, dynamics, conservation laws, central force fields, periodic motion. Mechanics of many-particle systems: center of mass, rotational mechanics of a rigid body, and static equilibrium. Temperature, heat, the laws of thermodynamics. At the level of University Physics, Vol. 1, by Young and Freedman.

### **PHYS 1116 Physics I: Mechanics and Special Relativity**

Forbidden Overlap: Students may receive credit for only one course in the following group: [EAS 1600](#), [PHYS 1101](#), [PHYS 1112](#), [PHYS 1116](#), [PHYS 2207](#). In addition, students may not receive credit for both [PHYS 1116](#) and [PHYS 2216](#).

Prerequisite: good secondary school physics course, proficiency with basic calculus (at the level of [MATH 1910](#) or [MATH 1120](#)), and enjoyment of puzzle-solving. More mathematically and conceptually sophisticated than [PHYS 1112](#); intended for students who are comfortable with a deeper, somewhat more abstract approach; intended mainly but not exclusively for prospective majors in physics, astronomy, or applied and engineering physics. Corrective transfers between [PHYS 1116](#) and [PHYS 1112](#) (in either direction) must occur during the first two weeks of instruction.

First in a three semester introductory physics sequence. Explores quantitative modeling of the physical world through a study of mechanics. More mathematical and abstract than a typical mechanics course - for example, considers how choice of coordinate system (Cartesian, cylindrical, etc.) influences the nature of kinematical equations. Fast paced. Includes kinematics, dynamics, conservation laws, inertial and noninertial frames, central force fields, periodic motion, and special relativity. At the level of An Introduction to Mechanics by Kleppner and Kolenkow.

### **PHYS 2213 Physics II: Electromagnetism**

Forbidden Overlap: Students may receive credit for only one course in the following group: [AEP 2170](#), [PHYS 1102](#), [PHYS 2208](#), [PHYS 2213](#), [PHYS 2217](#).

Prerequisite: [PHYS 1112](#) (or strong performance in [PHYS 2207](#)) and [MATH 1920](#), or [MATH 2220](#), or [MATH 2240](#). Primarily for students of engineering, physics and related disciplines. [PHYS 2217](#) presents a more advanced view of the subject.

Second in a three semester introductory physics sequence. Topics include electrostatics, behavior of matter

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Updated 3/13/17

in electric fields, DC circuits, magnetic fields, Faraday's law, AC circuits, and electromagnetic waves. At the level of University Physics, Vol. 2, by Young and Freedman, 13th ed.

### **PHYS 2217 Physics II: Electricity and Magnetism**

Forbidden Overlap: due to an overlap in content, students may receive credit for only one course in the following group: [AEP 2170](#), [PHYS 1102](#), [PHYS 2208](#), [PHYS 2213](#), PHYS 2217.

Prerequisite: strong performance in [PHYS 1116](#) or very strong performance in [PHYS 1112](#), and vector calculus at the level of [MATH 1920](#), [MATH 2220](#), or [MATH 2240](#). Mathematics prerequisites can be waived with at discretion of instructor. Students from [PHYS 1112](#) should coregister in [PHYS 2216](#), and consult with instructor. More mathematically sophisticated than [PHYS 2213](#). Enrollment may be limited. Intended mainly but not exclusively for prospective majors in physics, astronomy, or engineering physics. AP physics alone is typically not adequate preparation for this course: students interested in taking PHYS 2217 are strongly encouraged to first take [PHYS 1116](#).

Second in a three semester introductory physics sequence. Explores quantitative modeling of the physical world through a study of electricity and magnetism. More mathematical and abstract than a typical introductory electricity and magnetism course. Topics include electrostatics, behavior of matter in electric fields, circuits, magnetic fields, Faraday's law, AC circuits, and electromagnetic waves. Makes substantial use of vector calculus. At the level of Electricity and Magnetism by Purcell.

### **PHYS 2218 Physics III: Waves and Thermal Physics**

Forbidden Overlap: Students may not receive credit for both [PHYS 2214](#) and PHYS 2218.

Prerequisite: strong performance in [PHYS 2217](#) or very strong performance in [PHYS 2213](#). Students would benefit from prior exposure to differential equations at the level of [MATH 2930](#) or from co-registration in that course. Some linear algebra may be used (either prior or concurrent enrollment in linear algebra is recommended ([MATH 2940](#), [MATH 2210](#), or [MATH 2230](#))). Enrollment may be limited. Intended mainly but not exclusively for prospective majors in physics, astronomy, or engineering physics. More mathematically sophisticated than [PHYS 2214](#).

This course is divided into two parts. The larger segment of the course typically focuses on wave phenomena: deriving wave equations, solving wave equations, superposition, Fourier series and transforms. This discussion is at the level of The Physics of Waves by Georgi. The other segment focuses on thermodynamics and statistical mechanics at the level of Thermal Physics by Schroeder.