

Haverford College - Physics Department  
 Physics 106b: Fundamental Physics II  
 F. Crawford  
 Spring 2005 Course Schedule/Syllabus

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## Lecture Schedule

Day	Date	Lecture Topics	Wolfson & Pasachoff Reading
M	Jan 17	Introduction; Charge; Coulomb's Law; Electric Field	23-1, 23-2, 23-3
W	Jan 19	Electric Field from Charge Distributions	23-4, 23-5
F	Jan 21	Matter in Electric Fields; Electric Field Lines	23-6, 24-1
M	Jan 24	Electric Flux; Gauss's Law	24-2, 24-3
W	Jan 26	Gauss's Law and Charge Distributions	24-4, 24-5
F	Jan 28	Gauss's Law and Conductors, Electric Potential	24-6, 25-1
M	Jan 31	Potential Difference	25-2, 25-3
W	Feb 2	Electric Field and Potential; Charged Conductors	25-4, 25-5
F	Feb 4	Electrostatic Energy	26-1, 26-2, 26-3
M	Feb 7	Capacitance; Capacitors in Series and Parallel	26-4, 26-5, 26-6
W	Feb 9	Dielectrics; Electric Current and Conduction	26-7, 27-1, 27-2
F	Feb 11	Resistance; Ohm's Law; Electric Power	27-3, 27-4
M	Feb 14	Circuits; Resistors in Series and Parallel; Kirchhoff's Laws	28-1, 28-2, 28-3, 28-4
W	Feb 16	Circuit Measuring Instruments; RC Circuits	28-5, 28-6, 28-7
F	Feb 18	Magnetic Fields; Magnetic Force	29-1, 29-2
M	Feb 21	Magnetic Forces on Charges and Currents; Hall Effect	29-3, 29-4
W	Feb 23	Current Loop in Magnetic Field	29-5
F	Feb 25	Biot-Savart Law; Magnetic Force Between Wires	30-1, 30-2
M	Feb 28	Ampere's Law	30-3, 30-4
W	Mar 2	Solenoids and Toroids; Magnetic Materials	30-5, 30-6, 30-7
F	Mar 4	Induction; Magnetic Flux	31-1, 31-2
M	Mar 7	<i>Spring Break - no class</i>	<i>none</i>
W	Mar 9	<i>Spring Break - no class</i>	<i>none</i>
F	Mar 11	<i>Spring Break - no class</i>	<i>none</i>
M	Mar 14	Faraday's Law; Electromotive Force; Transformers	31-2, 33-6
W	Mar 16	Induced Current; Lenz's Law	31-3
F	Mar 18	Induced Electric Fields; Magnetic Energy	31-4, 32-4
M	Mar 21	Displacement Current; Maxwell's Equations; EM Waves	34-1, 34-2, 34-3, 34-4
W	Mar 23	EM Wave Properties; EM Spectrum; Polarization	34-5, 34-6, 34-7, 34-8
F	Mar 25	Polarization; Production of EM Waves	34-8, 34-9
M	Mar 28	EM Wave Momentum and Pressure; Interference	34-10, 34-11, 37-1
W	Mar 30	Double Slit Interference; Diffraction Gratings	37-2, 37-3
F	Apr 1	Single Slit Diffraction; Huygens' Principle	37-5, 37-6
M	Apr 4	Diffraction Limit; Circular Apertures; Resolution	37-7
W	Apr 6	Relativity Postulates; Michelson-Morley Experiment	38-1, 38-2, 38-3, plus handouts
F	Apr 8	Time Dilation; Length Contraction; Twin Effect	38-4, plus handouts
M	Apr 11	Simultaneity; Lorentz Transformations	38-4, plus handouts
W	Apr 13	Lorentz Transformations; Synchronization	38-4, plus handouts
F	Apr 15	Relativistic Velocity Addition	38-4, plus handouts
M	Apr 18	Relativistic Momentum and Energy	38-4, 38-5
W	Apr 20	Relativistic Invariance and Electromagnetism	38-6, 38-7
F	Apr 22	Special Topics	TBD
M	Apr 25	Special Topics	TBD
W	Apr 27	Special Topics	TBD
F	Apr 29	Review - <i>all course work due today</i>	<i>none</i>

The **Final Exam** is a self-scheduled exam to be taken during final exam week.