

## Syllabus-PHYS 1001-Introduction to Physical Sciences

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Office hours: *M,T,Th, 2:30pm-3:00 pm*

**Textbook:** Physics of Everyday Phenomena by W. Thomas Griffith

**Exams:** There will be one hourly test and a final exam.

**HW:** There will weekly HW assignments from the book. Attendance will be taken during the lectures.

Final grade = Midterm Exam-30% + Final Exam-40% + HW-30%

The course will cover the following topics:

Topic	(Griffith) Reading
Introduction: What is physics?	Ch 1
Speed and velocity	2.1 -2.3
Acceleration, graphs	2.4 -2.5
Constant acceleration and falling objects	3.1-3.3
Flying balls and other projectiles	3.4-3.5
Newton's first and second laws	4.1-4.2
Newton's third law	4.3-4.4
Applications of Newton's laws	4.5
Circular motion	5.1-5.2
Planetary motion, Newton's law of gravitation	5.3-5.5
Work and energy	6.1-6.2
Potential Energy and Conservation	6.3-6.4
Oscillations	6.5
Momentum and impulse	7.1-7.2
Conservation of momentum	7.3-7.5
Rotational motion and torque	8.1-8.2
Rotational inertia and Newton's second law	8.3
Conservation of angular momentum	8.4-8.5
Temperature and heat	10.1-10.2
The first law of thermodynamics, gas behavior	10.3-10.4
The flow of heat	10.5
Heat engines	11.1-11.2
The second law of thermodynamics	11.3-11.5

Electric Charge	12.1-12.2
Coulomb's law and electric fields	12.3-12.4
Voltage and simple circuits	12.5,13.1-2
Parallel circuits, household circuits	13.3-13.5
Wave motion	15.1-15.2
Standing waves and sound	15.3-15.4
Electromagnetic waves and light	15.5, 16.1
Lenses, mirrors, Interference and diffraction	16.2-16.5
Structure of Atom	18-1-18.5
Nuclear Energy	19-1-19.5
Relativity	20-1-20.5

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