

Introduction to Physics I
PHYS 111
FALL 2008

Prerequisites: Completion of College Algebra or equivalent; exposure to trigonometric functions is strongly recommended but not required.

Textbook: *Physics*, Cutnell & Johnson, 7th Edition **with Wiley Plus supplement.**

Note: A used 7th Edition Cutnell & Johnson is acceptable but the Wiley Plus registration code must be purchased online for \$69.95.

Homework website URL: <http://edugen.wiley.com/edugen/class/cls73998/>

Class Time and Location: M, W, F, 9:00 – 9:50 AM, MI 222

Professor: Dr. Robert Corey

Office: 218 EEP

Office Hours: Open, however, it is always best to make an appointment.

Phone: Office: 394-2362

email: robert.corey@sdsmt.edu

NOTE:

Students with special needs or requiring special accommodations should contact the instructor, Dr. Robert Corey, at 394-2362 and/or the campus ADA coordinator, Jollie McCoy, at 394-1924 at the **earliest** opportunity.

Policies:

- **Internet access is required for this course. All homework will be completed and graded on-line.**
- **Registration on the homework website is required.** Go to <http://edugen.wiley.com/edugen/class/cls73998/>, (select “bookmark this page” if you are registering on your own computer) and follow the instructions to register for the class.
- Students are responsible for taking the exams when scheduled. **Anyone missing an exam without prior approval and arrangement (this includes leaving a phone or email message with the professor or the physics department secretary) or certified medical reasons will be assigned a grade of zero for the exam in question.**
- **All exams, including the final, are open book. Only the standard course textbook is allowed. Student prepared note cards and sheets are not permitted. Calculators are permitted and recommended for exams.**
- The Final Exam will be a comprehensive exam on topics which have received emphasis. **Everyone must take the final exam.**
- **Final Exam date, time, and location: Tuesday, Dec. 16, 7:00 to 8:50 AM, MI 222.**
- Any violation of the **SDSM&T Academic Integrity Policy**, such as cheating or plagiarism, will not be tolerated. Penalties may range from a failing grade (zero) for the work in question to failure in the course.

South Dakota Board of Regents Freedom in Learning Statement:

Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.

South Dakota Board of Regents General Education Goal #6:

Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

Student Learning outcomes: As a result of taking courses meeting this goal, students will:

1. Critically evaluate data using the scientific method.

Assessment: Students will be able to critically evaluate data (given or obtained), with proper accuracy, using appropriate physical laws and formulas for laboratory reports, homework assignments, and solutions on quizzes and exams.

2. Identify and explain the basic concepts, terminology, and theories of the selected natural sciences.

Assessment: Students will identify and apply basic concepts and appropriate physical laws in order to solve assigned problems in homework, quizzes, exams, and oral presentations.

3. Apply selected natural science concepts and theories to contemporary issues.

Assessment: Students will be able to explain how physics concepts, laws, and phenomena relate to contemporary engineering and science in classroom discussions and written assignments.

Grade Structure:

	points
4 Hour Exams (drop one)	300
Homework	200
Final Exam	150
TOTAL	<hr/> 650

point range	percentage range	letter grade
585 – 650	90 – 100	A
488 – 584	75 – 89	B
390 - 487	60 – 74	C
325 - 389	50 – 59	D
< 325	< 50%	F

(subject to change if necessary)

Class Meeting	Date	Chapter	Topics
1	9/3	1	Mathematical Concepts: trigonometry and vectors
2	9/5	1	trigonometry and vectors
3	9/8	1	trigonometry and vectors
4	9/10	2	Kinematics in One Dimension: displacement, speed, velocity, and acceleration
5	9/12	2	Application of the equations of kinematics for constant acceleration.
6	9/15	2	Freely falling bodies.
7	9/17	3	Kinematics in Two Dimension: kinematic equations in 2-D
8	9/19	3	Projectile motion
9	9/22	3	Projectile motion
10	9/24		EXAM 1
11	9/26	4	Forces and Newton's Laws of Motion: force and mass, the three laws of motion
12	9/29	4	The vector nature of the second law.
13	10/1	4	Types of forces and equilibrium and nonequilibrium applications.
14	10/3	4	Types of forces and equilibrium and nonequilibrium applications.
15	10/6	4	Types of forces and equilibrium and nonequilibrium applications.
16	10/8	4	Types of forces and equilibrium and nonequilibrium applications.
17	10/10	5	Dynamics of Uniform Circular Motion: Centripetal acceleration and force
18	10/15	5	Applications
19	10/17	5	Applications
20	10/20		EXAM 2
21	10/22	6	Work and Energy: Work done by a constant force.
22	10/24	6	Work – energy theorem and kinetic energy
23	10/27	6	Gravitational potential energy, conservative and nonconservative forces
24	10/29	6	Nonconservative forces and the work – energy theorem.
25	10/31	6	Applications
26	11/3	6	Applications
27	11/5	7	Impulse and Momentum: Conservation of linear momentum
28	11/7	7	Collisions in one and two dimensions.
29	11/10	7	Center of mass.
30	11/12		EXAM 3
31	11/14	8	Rotational Kinematics: Rotational motion and angular displacement.
32	11/17	8	Angular velocity and angular acceleration, equations of rotational kinematics.
33	11/19	8	Angular and tangential variables, applications
34	11/21	8	Applications
35	11/24	9	Rotational Dynamics: Forces and torques on rigid objects

36	11/26	9	Rigid objects in equilibrium.
37	12/1	9	Applications
38	12/3	9	Rotational second law.
39	12/5	9	Applications
40	12/8	9	Rotational work and energy, angular momentum.
41	12/10	9	Applications
42	12/12		EXAM 4

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