Division/School Approval:	01/23/15	CP
Curriculum Committee Approval:	Date 5-11.115	Initiah
	Date	Initial)
Faculty Approval:		<u></u> めって、 Initial

SCHENECTADY COUNTY COMMUNITY COLLEGE Course Outline

ACADEMIC DIVISION/S	CHOOL: Mathematic	s, Science, Technol	ogy and Health
PREPARED BY: Ben Pla	<u>acek</u>		
COURSE CODE: PHY 1	.53 COURSE T	FITLE: Physics	[
LECTURE HOURS/WEE	K: 3 LAB HOUR	S/WEEK:3C	CREDIT HOURS: 4
PREREQUISITE/S: MAT PREREQUISITE or CONC COREQUISITES:	•	gible to enroll in M.	AT 167
FINAL EXAM REQUIRE	D: YES X N	О	
COURSE DESCRIPTION This course uses algebra, trigand conservation laws. The projectile motion, momentum thermodynamics. Vector algorithms.	gonometry and geometry e following topics are co m, rotational motion, sim	vered: translational ple harmonic motic	motion, torque, friction,
SCCC Core Principle Cou	rse	yes	
SUNY General Education	Course	yes	
STUDENT LEARNING O Students who have success		ırse will:	

- test scientific hypotheses by obtaining and analyzing experimental data using statistical and computational techniques;
- demonstrate scientific communication and analysis skills through written lab reports;
- use appropriate mathematical principles to analyze the fundamental laws of motion, and apply them to real-world examples; and
- use the basic laws of motion to think critically and qualitatively in order to describe phenomena observed in nature.

REPRESENTATIVE TEXT/S:

Serway; <u>College Physics</u>; Cengage; (current edition). Loyd; <u>Physics: Lab Manual</u>; Cengage; (current edition).

SUPPLEMENTARY MATERIALS/REFERENCES: Other materials as needed.

NOTE: Grading and assessment criteria may appropriately differ. Grades focus on what individual students have learned while assessments focus on entire cohorts of students. Each instructor will determine his/her grading criteria for the course and state on the course syllabus.

EVALUATION METHODS:

Examinations and laboratory reports are required. Additional assessment methods may include, but are not limited to, research papers, oral reports, homework and quizzes.

REQUIRED ASSESSMENT METHODS:

Assessment results from these methods will be used for course-level assessment and, where applicable, for SCCC core principles and SUNY General Education Knowledge and Skills areas. This information will be incorporated in program reviews.

Student Learning Outcome	Method(s)
Test scientific hypotheses by obtaining and analyzing	Lab report
experimental data using statistical and computational	
techniques	
Demonstrate scientific communication and analysis	Lab Report
skills	
Use appropriate mathematical principles to analyze	Examination
the fundamental laws of motion and apply them to	
real-world examples	
Use the basic laws of motion to think critically and	Examination
qualitatively in order to describe phenomena	
observed in nature	

NOTE: College policy requires a final exam or final week activity.

Course Content Outline

PHY 153 Physics I

<u>WEEK</u>	TOPICS
1	Displacement, Velocity, Acceleration
2	Linear Accelerated Motion and Projectile Motion
3	Newton's Three Laws of Motion
4	Free Body Diagrams and Frictional Force
5	Work and Energy
6	Conservation of Mechanical Energy
7	Impulse and Linear Momentum
8	Conservation of Linear Momentum and Collision
9	Rotational Motion and Centripetal Force
10	Torque and Rotational Energy
11	Conservation of Angular Momentum
12	Oscillation and Simple Harmonic Motion
13	Temperature and Heat
14	Laws of Thermodynamics and Entropy
15	Review
16	Final Exam

Laboratory Outline

PHY 153 Physics I

<u>WEEK</u>	TOPICS
1	Measurement of Length
2	Uniformly Accelerated Motion
3	Projectile Motion
4	Force Table and Vector Addition of Forces
5	Newton's Second Law on the Atwood Machine
6	Coefficient of Friction
7	Conservation of Spring and Gravitational Potential Energy
8	The Ballistic Pendulum
9	Conservation of Linear Momentum
10	Centripetal Acceleration
11	Moment of Inertia and Rotational Motion
12	The Pendulum
13	Specific Heat of Metal
14	Entropy