

## **PHYS 109-01 - General Physics - Fall 2016**

**MWF 8:15-10:40**  
**OWS 169**

**Instructor** Shelley Blilie  
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### **Office Hours**

Students are encouraged to arrange for office hours any time they wish to meet. Regular office hours will be on Thursdays from 10 to noon, and after class on MWF. For additional assistance, physics tutors will be available (hours to be decided). The Math Tutoring Center is located in OSS 235 and has extended hours if you wish to take advantage of the assistance there.

### **Course Description**

General Physics is an introductory course intended for students with interests in many areas of science, but who do not intend to major in physics or engineering. This course introduces the conceptual basis for our understanding of the world around us, beginning with a few physical principles and their applications. These ideas will be taught in such a way as to emphasize how we know how the universe works, along with applications to other fields such as biology.

### **Course Goals and Objectives**

At the end of the course, the student should be able to

1. Analyze a situation to find the factors which are relevant in determining what is likely to happen in that situation.
2. Understand the relationship between the scientific ideas presented in physics and actual situations in the real world.
3. Understand how a simplified modeling of a system can help to understand actual systems.

Understanding physics means understanding the underlying concepts and principles instead of focusing on memorization and using equations.

### **Required Materials**

College Physics by Knight, Jones, and Field. 3<sup>rd</sup> edition  
<http://tiger.stthomas.edu/phys/> College Physics Student Workbook, vol. 1  
Mastering Physics Access Card (<http://www.masteringphysics.com>)

**Course Web Page:** <http://ida.phys.stthomas.edu/phys109>

## Course Policies

<b>Evaluation:</b>	Exams	14%	each x 5
	Homework	12%	
	Quizzes	3%	
	Final Exam	15%	

## Attendance

Please be punctual. To be successful in this class, attendance at all activities is essential. Since group participation is an important component of laboratory work, missed labs and other group work cannot be made up.

## Assignments

1. Read all text material in the assigned chapters
2. Homework will be assigned each day on the course website. A score of 85% will receive full credit. Less than 85% will be given additional practice work, which if completed may raise your homework score to full credit. Less than 50% on the additional practice work will not receive credit beyond the original score. This is to ensure that you genuinely work to understand the material.
3. Late homework will not be accepted for credit unless arranged with me.

<http://ida.phys.stthomas.edu/phys109/index.php>  
<mailto:sablilie@stthomas.edu>

**Grades:** Will be based approximately on the distribution below.

90 - 100	A
80 - 89.9	B
70 - 79.9	C
58 - 69.9	D
0 - 57.9	F

## Exams and Quizzes

Concept quizzes will be given about once per week. These quizzes will be very short and will cover concepts covered in the previous few days. Calculators will not be needed.

Exams will primarily cover 2-3 chapters. A calculator will be needed for each exam. Exam problems must be solved using methods taught in the class and the text. Methods found online that are not covered in the class will not receive credit.

Students will create their own equation sheet for each unit exam. This sheet will be one side of an 8.5 x 11 inch sheet of paper. You may write on this sheet anything which you feel you will find useful for the exam. It will be turned in with the exam, and returned to you. Effective studying should reveal what information and equations you need. There will be a cumulative final exam. Your sheet for the final exam may use both sides.

## Makeup Exam Information

If you cannot take an exam due to a University event, see me in advance about rescheduling a makeup exam. Exams missed for any other reason may only be made up at my discretion. A doctor's note is required for a medical excuse. Plan ahead - having two exams in one day is not good enough reason to postpone a test. **The final exam cannot be made up or rescheduled.**

## Disclaimer

This syllabus is not a contract, but a plan for action. It may be subject to change.

## Academic Standards

In the process of conducting scientific work, it is essential that an attitude of trust and honesty exists between all participants. In the Physics Department, we have an honor code. We expect you to behave honorably in all aspects of your life. This means that we trust you. For example, you are free to leave the room during a test without asking me. We take this trust seriously and a breach of trust has severe consequences. Cheating in any form is grounds for dismissal from the course with a grade of F.

## Electronic Devices

Use of cell phones, pages, messaging PDAs, or other wireless communication devices (including laptops for e-mail) is not permitted at any time during class or exams. Please be considerate of your fellow students and conduct your e-business outside of the classroom.

## Math

Basic proficiency in basic algebra is expected. While we will be using calculators, I want you to come away with a basic understanding of the mathematical reasoning behind the science. Plugging numbers into an equations and getting an “answer” is not the best way to achieve this. Instead, I would like to help you understand, through basic algebra, what an equation has to say about the natural world. Double checking your algebra by seeing if your answer is reasonable is a good way to see if you did the math right.

## Students with Learning Disabilities

Qualified students with documented disabilities who may need classroom accommodations should make an appointment with the Disability Resources office. Appointments can be made by calling 651-962-6315. You may also make an appointment in person in Murray Herrick, room 110. Further information is available on the web at <http://www.stthomas.edu/enhancementprog/>.

<http://www.stthomas.edu/pandemic/plan/default.html>

## PHYS 109 - General Physics - Fall 2016

W	Sept 7	Ch 1	all
F	Sept 9	Ch 2	sec 1,2,3,4
M	Sept 12	Ch 2	sec 5,6,7
W	Sept 14	Ch 3	sec 1,2,3,4
F	Sept 16	Ch 3	sec 6,7,8
M	Sept 19	Synthesis and review	
W	Sept 21	<b>Exam 1</b>	
F	Sept 23	Ch 4	sec 1,2,3,6
M	Sept 26	Ch 4	sec 4,5,7
W	Sept 28	Ch 5	sec 1,2,3
F	Sept 30	Ch 5	sec 4,5,6

M	Oct 3	Ch 5	sec 7,8
W	Oct 5	Ch 6	sec 1,2,3 and Ch 3 sec 8
F	Oct 7	Ch 9	sec 1,2,3
M	Oct 10		review
W	Oct 12		<b>Exam 2</b>
F	Oct 14	Ch 7	sec 3,4,5
M	Oct 17	Ch 7	sec 6
W	Oct 19	Ch 8	sec 1,2
F	Oct 21	Ch 10	sec 1,2
M	Oct 24	Ch 10	sec 3,4,5,6
W	Oct 26	Ch 10	sec 3,4,5,6
F	Oct 28		midterm break
M	Oct 31	Ch 10	sec 8
W	Nov 2		review
F	Nov 4		<b>Exam 3</b>
M	Nov 7	Ch 11	sec 1,2,3
W	Nov 9	Ch 11	sec 4
F	Nov 11	Ch 11	sec 5
M	Nov 14	Ch 11	sec 6,7,8
W	Nov 16	Ch 12	sec 1,2,3,4
F	Nov 18	Ch 12	sec 5,6
M	Nov 21		review
W	Nov 23		<b>Exam 4</b>
F	Nov 25		Thanksgiving break
M	Nov 28	Ch 12	sec 8
W	Nov 30	Ch 12	sec 8
F	Dec 2	Ch 13	sec 1,2,3
M	Dec 5	Ch 13	sec 1,2,3
W	Dec 7	Ch 13	sec 4
F	Dec 9	Ch 13	sec 5,6
M	Dec 12		review
W	Dec 14		<b>Exam 5</b>

Final Exam: **Friday Dec. 16 8-10 AM**