

**COURSE TITLE**            PHY 2049.801 General Physics II (w\calculus)

This course is part of the University of South Florida's Foundations of Knowledge and Learning (FKL) Core Curriculum. It is certified for Natural Sciences (Physical Sciences) and for the following dimensions: critical thinking, inquiry-based learning, scientific processes, and quantitative literacy. Students enrolled in this course will be asked to participate in the USF General Education assessment effort. This might involve submitting copies of writing assignments for review, responding to surveys, or participating in other measurements designed to assess the FKL Core Curriculum learning outcomes. Note that as a part of USF's FKL, the General Education Council expects that you will spend an average of 9 hours per week engaged in course related activities.

**This course will adhere to standard USF policies**, details of which may be found at [http://www.ugs.usf.edu/ugc/standard\\_policies.htm](http://www.ugs.usf.edu/ugc/standard_policies.htm).

**MEETING TIMES**            Section 801            MW 9:00am – 11:10pm            ISA 1051

**PLEASE NOTE**

This course will use the associated Canvas web site to post grades, supplemental documents, and provide a forum for out-of-class, asynchronous discussion of the course material. You may access that web site through <http://my.usf.edu> .

This course will use the Mastering Physics online homework system that is associated with your textbook. Registration in the online homework system is not optional.

E-mails to the instructor should be sent from your USF e-mail account. The instructor replies to all e-mails. If you do not receive a reply, the e-mail was not received and you should resend it.

**OFFICE HOURS**            Located in ISA 4204

Monday & Wednesday, 11:30am- 12:30am

**Also available at other times - Please ask :O)**  
**Phone: 813-974-0165            E-mail: [rcriss@usf.edu](mailto:rcriss@usf.edu)**

**COURSE DESCRIPTION** "Second semester of a two semester sequence of calculus based general physics...for physics majors and engineering students", USF 2015-2016 Catalog.

**OBJECTIVES\*** (1) Students should understand fundamental physical concepts.  
(2) Students should develop a logical, systematic approach to the analysis and solution of problems.

\*Please scroll down for a more complete listing of course objectives and learning outcomes.

**PREREQUISITES** Calculus II (MAC 2282 or MAC 2312) and Physics I (PHY 2048) are prerequisites for this course. If you have not completed calculus II you should drop this course. If you are a life science major, you may be registered for the wrong sequence. PHY 2053/2054 has been designed specifically for you and covers material which you will not see in this course.

**REQUIRED TEXTS**            University Physics, 14<sup>th</sup> ed., by Young & Freedman, with Mastering Physics Homework.

**Note:** This text is available in several formats, including entirely online.  
**Mastering Physics course ID: CRISS2049C16 (for THIS SECTION only)**

If already have a Mastering Physics access code from PHY 2048 you will not need another one. Otherwise, a Mastering Physics **access code** should be part of the textbook package you select. (<http://MasteringPhysics.com>)

### IMPORTANT DATES

Friday	May 20	End of Drop/Add
Monday	May 30	USF Holiday
Friday	July 1	Midterm grades due
Saturday	July 2	Last day to withdraw w\“W”
Monday	July 4	USF Holiday
Wednesday	July 22	End of Summer C

### SCHEDULED EXAM DATES

Exam # 1	Wed. June 8
Exam # 2	Wed. June 29
Exam # 3	Wed. July 20

### GRADED WORK

**Exams:** You will have three regular exams, the combination of which will be 90% of your course grade. Every exam counts. There will be no dropped scores. However, your lowest regular exam score will be counted as 10% of your course grade. Each of the other two exams will be 40% of your course grade.

### SUMMER TERMS ARE SHORT, MAKING SUMMER EXAMS HIGH STAKES.

For each of the exams the physics department's T-score system, which is based on standard deviations from the class average, will be used to convert your raw score into a letter grade. This is the only curve that is applied to this course. A T-score is calculated as follows:

$$\text{Your T-score} = \frac{(\text{your score}) - (\text{class average})}{(\text{the standard deviation})}$$

A positive T-score means your score is above the class average. Likewise a negative T-score means your score is below the class average. The t-scores will be converted into 'standard' numeric grades based on a 10 point scale as follows:

1.60	≤	T-score		A+	100 pts.
1.30	≤	T-score	< 1.60	A	95 pts.
1.00	≤	T-score	< 1.30	A-	92 pts.
0.70	≤	T-score	< 1.00	B+	88 pts.
0.40	≤	T-score	< 0.70	B	85 pts.
0.10	≤	T-score	< 0.40	B-	82 pts.
-0.20	≤	T-score	< 0.10	C+	78 pts.
-0.50	≤	T-score	< -0.20	C	75 pts.
-0.80	≤	T-score	< -0.50	C-	72 pts.
-1.10	≤	T-score	< -0.80	D+	68 pts.
-1.40	≤	T-score	< -1.10	D	65 pts.
-1.70	≤	T-score	< -1.40	D-	62 pts.
		T-score	< -1.70	F	50 pts.

As an example: Suppose there were 20 questions on an exam and you answered 12 of them correctly. The class average was 11.3 correct responses with a standard deviation of 2.34. Your t-score on the exam would be  $(12-11.3)/2.34 = +0.299$ . From the table above, that corresponds to a B-, which would be recorded as an exam score of 82.

**Homework:** Homework will be 10% of your course grade. Homework will be accepted only through the Mastering Physics homework system. You will have short homework assignments due 2 hours before every class meeting. Assignments will be weighted equally in the calculation of your homework grade. Regardless of circumstance, no late homework will be accepted. To allow for personal issues, technical difficulties, travel for USF events, etc. the lowest 2 homework scores will be dropped.

## UNGRADED WORK

**Practice Homework:** As we move through the lecture material I will post 'practice' assignments to Mastering Physics. They will have no point value and list a due date at the end of the term. Mastering Physics will provide numerical answers to these problems. Solutions to the odd numbered problems can be found in the Student Solutions Manual which can be checked out from the Reference Desk in the library.

## COURSE GRADE

Your course average will be calculated as a weighted average from your scores on the 3 regular exams and the homework. They will be weighted as follows:

Homework	10%
3 Exams	90%
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TOTAL	100%

Your course average will be converted to a letter grade using the 10 point scale listed below. Note that rounding of the course average is to the one's place. I will round all numbers ending in a 0.5 up to the next whole number.

A+	97 - 100
A	93 - 96
A-	90 - 92
B+	87 - 89
B	83 - 86
B-	80 - 82
C+	77 - 79
C	73 - 76
C-	70 - 72
D+	67 - 69
D	63 - 66
D-	60 - 62
F	0 - 59

## POLICY ON LATE WORK, MISSED EXAMS

Late work of any kind, including exams, will generally not be accepted. *Late* is defined to be work submitted any time after it has been collected by the instructor or is due online. A score of zero will be entered into the grade book for late work unless arrangements have been made with the instructor in advance. Please note that making "arrangements" requires a 2-way communication between the student and instructor. For 2-way communication, face-to-face communication is always best, telephone is second best, followed by e-mail.

## ATTENDANCE

Attendance is not a part of your course grade. I believe in a value-added classroom experience and will do everything I can to provide you that opportunity. For that reason, you should come to every class meeting. There are no opportunities to make-up a missed classroom experience. I do understand that there are valid & justifiable reasons for missing class. Even so, you remain responsible for everything that we cover in class. You should get notes from a classmate upon your return. Students who anticipate missing exams due to religious observance should inform the instructor by the second class meeting.

**ACADEMIC HONESTY:** Knowledge and maintenance of the academic standards of honesty and integrity as set forth by the University are the responsibility of the entire academic community, including the instructional faculty, staff and students. **I take this seriously** and am sure that you do as well.

**STUDENTS WITH DISABILITIES:** Students in need of academic accommodations for a disability may consult with the office of Students with Disabilities Services to arrange appropriate accommodations. Contact SDS at 974-4309 or [www.sds.usf.edu](http://www.sds.usf.edu). Students are required to give reasonable notice prior to requesting an accommodation. There is no way to make accommodations on or after the due date.

## COURSE OUTLINE

Like most college courses, we do not cover every section of every chapter. We 'pick & choose' as appropriate. Below is a list of topics by class day. You can refer to the index of your text book and find the corresponding chapter/section/page numbers. It is intended as a guide only, meaning that the content and timing is subject to change.

	<b>Monday</b>	<b>Wednesday</b>
<b>Week # 1</b>	Thermodynamics & Heat Engines	Electric Charge, Induced Charge, Coulomb Force Law, Electric Fields
<b>Week # 2</b>	Continuous charge distributions, Gauss	Electric Potential Energy, Voltage
<b>Week # 3</b>	<b>USF Holiday</b>	<i>Last lecture on exam 1 content</i>
<b>Week # 4</b>	Capacitance	<b>Exam 1</b>
<b>Week # 5</b>	Charges in Matter, DC Circuits	Magnetism, Magnetic forces on Charges and Currents
<b>Week # 6</b>	Ampere's Law, Biot-Savart Law	Faraday's Law, Lenz's Law, <i>Last lecture on exam 2 content</i>
<b>Week # 7</b>	Inductance, AC Circuits	<b>Exam 2</b>
<b>Week # 8</b>	<b>USF Holiday</b>	Maxwell's Equations, EM Waves, Polarization, reflection, Refraction
<b>Week # 9</b>	Lenses, Mirrors	Interference, Diffraction, <i>Last lecture on exam 3 content</i>
<b>Week # 10</b>	More on what we covered and on what we skipped	<b>Exam 3</b> , Last class day

## COURSE OBJECTIVES

- (1) Students will learn the scientific method and how it applies to all scientific inquiry.
- (2) Students will learn critical thinking and analysis.
- (3) Students will develop an understanding of the physical aspects of nature.

- (4) Students will learn problem solving skills, employing mathematics and conceptual knowledge to physical problems in science and technology.
- (5) Students will actively engage in developing an understanding of the laws of physics through class participation and lecture demonstrations.

### **STUDENT LEARNING OUTCOMES**

- (1) Students will apply the laws of thermodynamics to common systems.
- (2) Students will apply the basic concepts of electricity and magnetism to the solution of common problems.
- (3) Students will describe the behavior of DC and AC circuits both conceptually and mathematically.
- (4) Students will develop a fundamental understanding of imaging with mirrors and lenses.
- (5) Students will describe the behavior of light as a wave both conceptually and mathematically.

### **EXAM POLICIES**

#### **These things MUST happen if your exam is to be scored:**

- You must take the exam in your assigned seat. If your assigned seat is empty during the exam, you will get a zero for the exam.
- You must present a photo ID when you turn in your exam book & scan card.
- You must turn in both the exam book and scan card or you will get a zero for the exam.
- You must use a #2 pencil and correctly complete name, U-number, and answer sections of the scan card.
- You must not make or erase any marks on the scan card after time has been called.
- You must not make or erase any marks on the scan card once you have left your assigned seat.

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#### **Please be aware of the following policies:**

- We will not answer individual questions during the exam. Students do not have equal access to the instructor, so the fairest thing is not to answer any questions and have everyone work with what is written in the exam book.
- You will not be allowed to leave the room once the exam has begun. Bathroom breaks should be taken before the exam begins. If you are feeling ill and believe there is a possibility of an 'emergency' bathroom exit, please warn me of that in advance.
- Any calculator is fine, so long as it does not connect to the internet, place phone calls, take pictures, send text messages, or store pages of notes. Cell phones are not acceptable as calculators. You are not allowed to share calculators during the exam.
- Your exam will be confiscated and you will receive a score of zero if you are caught taking pictures, accessing the web, or communicating in any way with another person.

- Your exam will be confiscated and you will receive a score of zero if you are caught looking at another student's exam book or scan card.
- Your exam will be confiscated and you will receive a score of zero if you are caught showing another student your exam book or scan card.
- There are times when I ask students to change seats. This request is made as a precaution and to help the exam proctors & I monitor the exam more easily.
- You will have one week from the first day on which exam books are returned to pick up your exam book. After that time, the exam books will be discarded. A record of your performance will be maintained with your original scan card.

**It is important that you understand these policies and their ramifications. Please ask if you have questions or need clarification.**