Valencia College Course Syllabus
Physics with Calculus II – PHY2049C
CRN-11552

Term/Year: Fall 2016
Instructor: Dr. Irina Struganova
Phone: 407-582-1947
Email: istruganova@valenciacollege.edu
Office: 2-230
Office Hours:
M-F  7:30-8:30 a.m. – email
M    1:00 -3:00 p.m.
W    10:00a.m.-12:00 p.m.
Th    11:30a.m. – 12:30 p.m.
Other times by appointments only.

Instructional Methods
The course will be taught through a combination of lectures and recitations, demonstrations, problem solving sections, homework assignments (including on-line assignments), and labs. Appropriate math skills, knowledge of BlackBoard, and Mastering Physics online system is necessary to be successful in this course; if you need assistance, please contact your professor.

COURSE INFORMATION
CONTACT                  6 (lecture – 3, recitation-1, physics opened laboratory -2 on average)
HRS/WK:
CREDIT HOURS:            4
PREREQUISITE:            MAC 2312 and PHY2048C with a minimum grade of “C”.
REFUND OF FEES:          The Drop/Refund deadline for this course is September 6th, 2016.

COURSE DESCRIPTION:
Fundamental principles of electricity, magnetism, optics, and waves. For physics, mathematics, chemistry and pre-engineering majors.

COURSE LEARNING OUTCOMES:
1. Students will be able to understand and apply physics principles behind mechanical and electromagnetic waves and their superposition to conceptual and numerical problems of general physics and in laboratory settings.
2. Students will be able to understand and apply fundamental laws and principles of electrostatic to conceptual and numerical problems and in laboratory settings.
3. Students will be able to understand and apply basics physics principles behind direct current circuits to conceptual and numerical problems and in laboratory settings.
4. Students will be able to understand and apply fundamental laws and principles of magnetism to conceptual and numerical problems and in laboratory settings.
5. Students will be able to understand and apply fundamental laws and principles of the electromagnetic and magneto-electric induction to solution of conceptual and numerical problems of general physics.
6. Students will gain and understanding of the four Maxwell's Equations as the foundation of the Electrodynamics and Optics.
7. Students will be able to understand and apply basic principles of geometrical optics to solutions of problems and in laboratory settings.
8. Students will be able to apply calculus to solution of appropriate problems of general physics.
9. Students will enhance basic laboratory skills and professional ethics applicable to standard introductory physics labs.

INSTRUCTIONAL MATERIALS:
   Any version of 14th edition is acceptable, but if your text does not include “Mastering Physics” access code, you have to purchase it separately at http://www.masteringphysics.com/;
you may also choose to buy an electronic version of the text together with the code.
   You must register for Pearson my Lab Mastering Physics Course through the class Blackboard link.

2) A scientific or graphical calculator.
3) Notebook, graph paper, ruler, protractor.

STUDENT SUCCESS INFORMATION
Grades:
The grading scale for the course is:
(90-100% = A; 75-90% = B; 60-75% = C; 50-60% = D; less than 50% = F)

Grading Policy:
1) Labs – 20% of your class grade.
2) Tests – 40% of your class grade (10% each).
3) Homework – 10% of your class grade.
4) Quizzes and other assignments – 10% of your class grade.
4) Final Exam – 20% of your class grade.

Students have an option to substitute the lowest test grade with the final exam grade. **This option will be available only for students who will take all the tests.**

**Course Lectures Schedule:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Advanced Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 30</td>
<td>Introduction/Waves</td>
<td>Ch. 15</td>
</tr>
<tr>
<td>Sep 1</td>
<td>Waves</td>
<td>Ch. 15</td>
</tr>
<tr>
<td>Sep 6</td>
<td>Waves and Sound</td>
<td>Ch. 16</td>
</tr>
<tr>
<td>Sep 8</td>
<td>Waves/Electric Charge</td>
<td>Ch. 16/21</td>
</tr>
<tr>
<td>Sep 13</td>
<td>Electric Charge/Electric Field</td>
<td>Ch. 21</td>
</tr>
<tr>
<td>Sep 15</td>
<td>Electric Field</td>
<td>Ch. 21</td>
</tr>
<tr>
<td>Sep 20</td>
<td>Test I</td>
<td></td>
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<tr>
<td>Sep 22</td>
<td>Gauss’ Law</td>
<td>Ch. 22</td>
</tr>
<tr>
<td>Sep 27</td>
<td>Electric Potential</td>
<td>Ch. 23</td>
</tr>
<tr>
<td>Sep 29</td>
<td>Electric Potential</td>
<td>Ch. 23</td>
</tr>
<tr>
<td>Oct 4</td>
<td>Capacitance</td>
<td>Ch. 24</td>
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<tr>
<td>Oct 11</td>
<td>Current and Circuits</td>
<td>Ch. 25/26</td>
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<tr>
<td>Oct 13</td>
<td>Circuits</td>
<td>Ch. 26</td>
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<tr>
<td>Oct 18</td>
<td>Test II</td>
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<tr>
<td>Oct 20</td>
<td>Magnetic Field</td>
<td>Ch. 27</td>
</tr>
<tr>
<td>Oct 25</td>
<td>Magnetic Field</td>
<td>Ch. 28</td>
</tr>
<tr>
<td>Oct 27</td>
<td>Magnetic Field</td>
<td>Ch. 28</td>
</tr>
<tr>
<td>Nov 1</td>
<td>Induction</td>
<td>Ch. 29</td>
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<td>Nov 3</td>
<td>Test III</td>
<td></td>
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<tr>
<td>Nov 8</td>
<td>Induction</td>
<td>Ch. 29</td>
</tr>
<tr>
<td>Nov 10</td>
<td>Induction/AC current</td>
<td>Ch. 30/31</td>
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<tr>
<td>Nov 15</td>
<td>AC current/Maxwell Equations</td>
<td>Ch. 31/32</td>
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<tr>
<td>Nov 17</td>
<td>EM Waves</td>
<td>Ch. 33</td>
</tr>
<tr>
<td>Nov 22</td>
<td>Images</td>
<td>Ch. 34</td>
</tr>
<tr>
<td>Nov 29</td>
<td>Test IV</td>
<td></td>
</tr>
<tr>
<td>Dec 1</td>
<td>Images/Interference</td>
<td>Ch. 34/35</td>
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<tr>
<td>Dec 6</td>
<td>Interference/Diffraction</td>
<td>Ch. 35/36</td>
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<tr>
<td>Dec 8</td>
<td>Catch-up/review</td>
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**Final Exam – Tuesday, December 13th, 10:00 a.m. – 12:30 p.m.**
**Labs:**
Satisfactory completion of all required laboratory experiments is a mandatory part of the completion of the course. All experiments will be set-up and conducted in the physics lab (2-209). You’ll have about 2-3 weeks window to complete each experiment. You must register for all experiments in advance. Lab Schedule can be found on the Blackboard and on [http://science.valenciacollege.edu](http://science.valenciacollege.edu).

Pre-labs mini-lectures and demonstrations will be given during scheduled lecture and recitations hours. Recitations time will be also used for help with post-lab analysis and problem solving sessions.

Specific instructions on scheduling and physics laboratory policies will be provided during the first recitation.

**It is not allowed to conduct more than one lab experiment per day, unless it is pre-approved by the instructor. If a student will complete more than one experiment during the same day without pre-approval, grade “zero” will be assigned for the corresponding experiments.**

**It is not allowed to schedule the experiments during lectures and/or recitations. Grade “zero” will be assigned for the corresponding experiments.**

**Lab Grades:**
Grades for experiments will be given based on your performance in the lab, quality of collected data, their analysis and post-lab assignments. (Experimental data and performance in the lab – 50%, post-lab quizzes and analysis and lab-related questions on the tests– 50%).

**Pre-labs:** will have to be completed before the lab.

**Post-labs:** will have to be submitted by the deadlines posted on the Blackboard. **Hard copies only.** You’ll have to submit completed lab assignments and **all the data and/or the data worksheets generated during the experiment** for each lab to the instructor. **Data sheets must be signed and dated by the laboratory staff. No lab assignment will be accepted without signed data and/or data sheets.**

**Lab assignments and data sheets submitted after the deadline will not be accepted.**

Students who fail to complete three lab experiments and/or to submit three lab reports within required time frames during the whole semester will receive an “F” grade for the course even if they earn a passing grade according to the grade scheme.

**Make-up Policies**
Students who missed a test due to an excused reason (sickness, death in family and others serious reasons) and have a perfect attendance record otherwise at the discretion of the instructor may be allowed to make-up this test at the testing center. The instructor may request a doctor’s note or other documentation to decide whether to allow a make-up. No make-ups or late submissions without excused reasons or if a student missed more than 3 classes before the day of the test.

On-line homework assignments – 10% late submission penalty per day.
Quizzes (including post-lab quizzes) – no make-ups.
Lab assignments – no late submissions.
Final exam – no make-ups.

Attendance and Tardy Policy and Expectations
Regularity in classroom attendance and punctuality is vital to academic success. Students are expected to come and leave on time. Being late or leaving earlier will be counted as ½ of absence.

1. Students not registered for Mastering Physics by 11:00 p.m. on August 31st, 2016 will be dropped from the course.
2. Students who will score 30% or lower on three homework assignments will be dropped from the course.
3. Students who fail to complete two lab experiments and/or to submit two lab reports within required time frames for the assignments due before November 11th, 2016 are subject to withdrawal by the instructor.
4. Students who miss four classes, including recitations, are subject to withdrawal by the instructor.

Withdrawal Deadline and Policy
Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals) a student who withdraws from class before the withdrawal deadline of November 11th, 2016 will receive a grade of “W.” A student is not permitted to withdraw from this class after the withdrawal deadline; if you remain in the class after the withdrawal deadline, you can only receive a grade of A, B, C, D, F or I. An I grade will only be assigned under extraordinary circumstances that occur near the end of the semester. If you receive an I, the work missed must be made up during the following semester, at which time you will get an A, B, C, D or F. Failure to make up the work during the following semester will result in you getting a grade of F in the course. The professor will not withdraw any student for any reason; it is the responsibility of the student to withdraw themselves before the withdrawal deadline and to be aware of the date of the withdrawal deadline. Any student who withdraws from this class during a third or subsequent attempt in this course will be assigned a grade of “F.”

Students on financial aid should consult an advisor or a counselor before withdrawing from a course; there may be financial aid implications to the student which he or she must know about to make an informed decision before withdrawing from a course. Students with some scholarships who withdraw or are withdrawn from a class must pay the college for the cost of the class. Other scholarship sponsors may also require repayment.
Valencia College Core Competencies
“\textit{The faculty of Valencia College has identified four core competencies that define the learning outcomes for a successful Valencia graduate. These competencies are at the heart of the Valencia experience and provide the context for learning and assessment at Valencia College. You will be given opportunities to develop and practice these competencies in this class. The four competencies are:}

\begin{description}
\item[THINK] = Think clearly, critically, creatively; analyze, synthesize, integrate and evaluate in many domains of human inquiry.
\begin{itemize}
\item[a)] you will analyze data and scientific principles as they pertain to microbiology
\item[b)] you will employ facts, formulas and procedures in lecture and in lab groups
\item[c)] you will discover and understand how microbiology is important in various fields and in disciplines other than in medicine
\item[d)] you will be able to draw well supported conclusions about the importance of microbiology in your daily life and in your career
\item[e)] you will be able to revise conclusions in light of new observations and interpretations
\end{itemize}
\item[VALUE] = Make reasoned judgments and responsible commitments.
\begin{itemize}
\item[a)] you will be able to compare personal, ethical, and scientific values in the fields of genetics, chemotherapy, environmental science and patient care
\item[b)] you will be able to see the value of the time commitment needed to succeed in the nursing and allied health programs
\end{itemize}
\item[COMMUNICATE] = Communicate with different audiences using varied means.
\begin{itemize}
\item[a)] you will be able to practice written communication skills
\item[b)] you will be able to verbally communicate to fellow students and teachers using professional, scientific language during lectures and labs
\end{itemize}
\item[ACT] = Act purposefully, effectively and responsibly.
\begin{itemize}
\item[a)] you will be able to manage your time and activities to achieve your academic goals
\item[b)] you will meet deadlines
\item[c)] you will apply the knowledge you learn to your career goals
\end{itemize}
\end{description}

**ADDITIONAL CLASSROOM INFORMATION**

**Security Statement**
\textit{We want to reassure you that our security officers are here around the clock to ensure the safety and security of the campus community. It’s important to remain alert and aware of your surroundings, especially during the early morning or evening hours. Remember that}
you can always call security for an escort if you feel uncomfortable walking alone on campus. White security phones can also be found in many of our buildings; simply pick up the phone and security will answer.
Finally, report any suspicious persons to West Campus Security at 407-582-1000, 407-582-1030 (after-hours number) or by using the yellow emergency call boxes located on light poles in the parking lots and along walkways.

E-mail communication with the instructor:
Preferred method of e-mail communication is through the BlackBoard site. You can also contact me through the Atlas using your Valencia e-mail address. I will not reply to e-mail messages sent from external servers (gmail, hotmail, etc).
During weekdays, you will receive a response to your emails within 24 hours. Messages sent on weekends will be answered on Monday.

Academic Honesty Statement
All work submitted by students is expected to be the result of the student’s individual thoughts, research, and self-expression unless the assignment specifically states ‘group project.’ Any submissions that are too similar for coincidence will receive no credit.

Classroom Rules of Student Behavior
College policy prohibits children from attending lectures or labs; please, do not violate this policy.
Proper classroom etiquette is required for you to attend this class; please do not create distractions while the professor is lecturing. More than one warning for improper classroom behavior, following a referral to the academic dean or the calling of security, will be grounds to be dropped from the course without a refund.

No Food or Drink Allowed in the Lecture or Lab Rooms

Additional Classroom Policies
Students are responsible for preparing for class by reading pre-assigned readings and completing assignments. Students who are absent are fully responsible for all material covered in class.

Cell phones, personal computers, and other electronic devices must be turned off during all the time in the classroom. No talking or making any kind of distractive noises is allowed.
Under no circumstances will your test scores, total points or final grades be discussed on the telephone. FERPA rights to privacy prevent the divulging of scores or related materials by that means. Scores will only be given face-to-face with each student or by accessing Blackboard.

Baycare Behavioral Health’s Student Assistance Program
“Valencia is committed to making sure all our students have a rewarding and successful college experience. To that purpose, Valencia students can get immediate help that may assist them with psychological issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home or work. Students have 24 hour unlimited access to the Baycare Behavioral Health’s confidential student assistance program phone counseling services
by calling (800) 878-5470. Three free confidential face-to-face counseling sessions are also available to students."

**Students with Disabilities Information:**
"Students with disabilities who qualify for academic accommodations must provide a Notification to Instructor (NTI) form from the Office for Students with Disabilities (OSD) and discuss specific needs with the professor, preferably during the first two weeks of class; accommodations will not be applied retroactively. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities."

**West Campus SSB, Rm. 102** Phone: 407-582-1523 Fax: 407-582-1326

**College Catalog/Student Handbook/Policy Manual**
- A full description of all College policies can be found in the College Catalog at [http://www.valenciacollege.edu/catalog/](http://www.valenciacollege.edu/catalog/)
- The Student Handbook can be found at: [http://valenciacollege.edu/studentdev/CampusInformationServices.cfm](http://valenciacollege.edu/studentdev/CampusInformationServices.cfm)
- The Policy Manual can be found at [http://www.valenciacollege.edu/generalcounsel/](http://www.valenciacollege.edu/generalcounsel/)
- The college calendar can be found at [http://valenciacollege.edu/calendar/](http://valenciacollege.edu/calendar/) for important dates.

**Study tips:**
1) *Attend class daily and don’t be tardy.* Students who follow this rule won’t miss important information.
2) *TAKE NOTES* during the lectures.
3) *READ YOUR NOTES* and clarify confusing concepts and steps soon after the lecture.
4) *Spend 1-2 hour blocks of time EVERY DAY* reading the text, and solving homework problems.
5) Make lists of confusing topics from your studying and ask questions.
6) Take advantage of the professor’s office hours.
7) Visit physics lab! You can always find there a professor or a student who can answer your questions!
8) **JOIN A STUDY GROUP** and predict what questions the professor could ask on the test.
9) Get the telephone number and/or email of one or more buddies in case you are absent from a class.

**Disclaimer Statement**
*As many factors may affect the development and progress of a class, exceptions to the above stated policies or schedule may be made at the discretion of the instructor.*