**Valencia College Course Syllabus**

**Physics with Calculus I – PHY2048C**

**CRN-10116**

**Term/Year: Fall 2019**

**Instructor: Dr. Irina Struganova**

**Phone: 407-582-1947**

**Email:** [**istruganova@valenciacollege.edu**](mailto:istruganova@valenciacollege.edu)

**Office: 2-230**

**Physics Lab: 2-209**

**Office Hours:**

**M-F 7:30-8:30 a.m. – email**

**M 2:00 – 4:00 p.m.**

**T  12:00 a.m. – 1:00 p.m.**

**W 11:00 a.m. – 1:00 p.m.**

**Th        11:00 a.m. – 1:00 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 Canvas and Mastering Physics online system is necessary to be successful in this course; if you need assistance, please contact your professor.

**COURSE INFORMATION**

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| --- | --- |
| **CONTACT HRS/WK** | 6 ( lecture – 3, recitation-1, physics opened laboratory -2 on average) |
|  |  |
| **CREDIT HOURS:**  **PREREQUISITE:**  **REFUND OF FEES:**  **COURSE DESCRIPTION:**  **COURSE LEARNING OUTCOMES:** | 4  MAC 2311 with a minimum grade C.  The Drop/Refund deadline for this course is **September 3rd** **2019**.  Fundamental principles of mechanics and thermal physics. For physics, mathematics, chemistry, and pre-engineering majors  1. Students will be able to **understand and apply the definitions and principles of classical physics to describe different types of motion, to solve conceptual and numerical problems and to analyze related experimental data.**  2. Students will be able to **understand and apply Newton's Laws of motion to conceptual and numerical problems of classical mechanics, and to predict related experimental results and outcomes.**  3. Students will be able to **understand and apply concepts of work, energy, principle of conservation of mechanical energy and work-energy theorems to conceptual and numerical problems of classical mechanics and in laboratory settings.**  4. Students will be able to **understand and apply concepts of linear and angular momenta and the Laws of Conservation of the Linear and the Angular Momentum to appropriate problems of classical mechanics and in laboratory settings.**  5. Students will be able to **understand and apply concepts of torque, rotational inertia, center of mass and related principles of physics to appropriate problems of classical mechanics, and in laboratory settings.**  6. Students will be able to understand and apply Newton's Law of Gravity and related principles of physics to solving problems of classical mechanics, including motion of planets and satellites, and the escape speed.  7. Students will be able to **understand basic principles of physics describing fluids in equilibrium and fluids in motion and apply these principles to solving simple problems of fluids mechanics.**  8. Students will **gain an initial understanding of major principles of thermal physics and apply some of them to solution of problems and in laboratory settings.**  9. Students will **develop professional ethics, laboratory and data analysis skills applicable to standard introductory physics labs.** |
| **INSTRUCTIONAL MATERIALS:** | |  | | --- | | 1) Wolfson, “Essential University Physics”, 4th edition with “Modified Pearson Mastering Physics”, Volume I, Pearson, custom (available at the bookstore).  Any other version of 4th edition is acceptable, however, if your text does not include “Modified Mastering Physics” access code, you have to purchase it separately through the Canvas site of the course when it will become available.  YOU MUST REGISTER FOR YOUR PEARSON MASTERING PHYSICS COMPONENT THROUGH YOUR COURSE CANVAS SITE.   1. A scientific or graphical calculator.   3) **Two notebooks** (or a binder with dividers and college ruled paper) , 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 – **15%** of your class grade.

2) Tests – **45%** of your class grade (**15%** each); tests will include questions related to labs.

3) Homework – **10%** of your class grade.

4) Classwork, quizzes and other assignments – 1**0%** 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:**

**Date Topic Advanced Reading**

**Aug 27 Introduction/Motion in 1D Ch. 1/2**

**Aug 29 Vectors/1D motion Ch. 1/2**

**Sep 3 Vectors/Motion in 3D Ch. 1/3**

**Sep 5 Motion in 3D Ch. 3**

**Sep 10 Newton’s Laws Ch. 4**

**Sep 12 Newton’s Laws Ch. 5**

**Sep 17 Newton’s Laws Ch. 5**

**Sep 19 Work and Energy Ch. 6**

**Sep 24 Test I**

**Sep 26 Work and Energy Ch. 7**

**Oct 1 Energy/Momentum Ch. 7/8**

**Oct 3 Collisions/Center of Mass Ch. 8**

**Oct 8 Center of Mass Ch. 8**

**Oct 10 Rotation of Rigid Bodies Ch. 9**

**Oct 15 Rotation of Rigid Bodies Ch.9**

**Oct 17 Dynamic of Rotational Motion Ch. 10**

**Oct 22 Test II**

**Oct 24 Torque/Angular Momentum Ch. 10**

**Oct 29 Equilibrium and Elasticity Ch. 11**

**Oct 31 Fluids Ch. 12**

**Nov 5 Fluids/Gravitation Ch. 12/13**

**Nov 7 Gravitation Ch. 13**

**Nov 12 Oscillations Ch. 14**

**Nov 14 Oscillations/Heat Ch.14/17**

**Nov 19 Test III**

**Nov 21 Kinetic Theory/First Law Ch. 18/19**

**Nov 26 First Law Ch. 19**

**Dec 3 Second Law/ Catch-up Ch. 20**

**Dec 5**

**Final Exam is scheduled for Thursday, December 12th 1:00 p.m. - 3:30 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>.

Pre-labs mini-lectures and demonstrations will be given during scheduled lecture and recitation hours. Recitations time will be also used for 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, pre-labs and post-lab assignments, including possible quizzes. Each lab will be graded out of 100 points total.

**Pre-labs:** will have to be completed before the lab. Due dates will be announced in class and/or posted on Canvas.

**Post-labs:** will have to be submitted by the deadlines posted on Canvas. **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, including pre-labs, post-labs, 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.**

**Pre-labs and post-labs are an individual work. Identical or too similar parts of pre-labs and post-labs will be considered as a plagiarism.**

**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 – 20% late submission penalty per day.**

**Quizzes – no make-ups.**

**Class work – 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 Aug 29th, 2019** will be dropped from the course.

2.Students who **will not submit a signed student expectation form by September 3rd, 2019, 2:30 p.m.** will be dropped from the course.

**3. Students who fail to complete three lab experiments and/or to submit three post-labs are subject to withdrawal by the instructor.**

**4. Students who miss four classes, including recitations, can be dropped from the class without farther warning.**

**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 1st, 2019** 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**.”

For a complete policy and procedure overview on Valencia Policy 4-07 please got to:

<http://valenciacollege.edu/generalcounsel/policy/default.cfm?policyID=75&volumeID_1=4&navst=0>

**Students on financial aid should consult an advisor or counselor before withdrawing from a course;** there may be financial 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.

In order to academically maintain financial aid, students must meet all of the following requirements:

* Complete 67% of all classes attempted, and
* Maintain a Valencia GPA of 2.0 or higher, and
* Maintain an overall GPA of 2.0 or higher, and
* Complete  degree within the 150% timeframe

Detailed information about maintaining satisfactory academic progress (SAP) can be found at:

<http://valenciacollege.edu/finaid/satisfactory_progress.cfm>

**Notice to Students Seeking to Withdraw from a Course**

Before you withdraw from a course, you should be aware that course withdrawals:

* Will increase the cost of your education
* May affect your financial aid status
* May affect your transfer grade point average
* May result in your having to pay the full cost of instruction fee to retake the course
* May affect your anticipated graduation date
* May result in your being denied access to limited access programs
* May affect your eligibility for the Honors Program
* May affect your immigration status if you are attending Valencia on a nonimmigrant visa
* Will result in your required repayment of course fees paid by a Bright Futures scholarship.

**Before you withdraw:**

* + Talk with your professor to discuss your progress in the course
  + See a Student Services staff member to discuss how a withdrawal will affect your career and education plans and/or the status of your financial aid

**Valencia College Core Competencies**

*“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:*

**THINK** = Think clearly, critically, creatively; analyze, synthesize, integrate and evaluate in many domains of human inquiry.

1. you will analyze data and scientific principles as they pertain to microbiology
2. you will employ facts, formulas and procedures in lecture and in lab groups
3. you will discover and understand how microbiology is important in various fields and in disciplines other than in medicine
4. you will be able to draw well supported conclusions about the importance of microbiology in your daily life and in your career
5. you will be able to revise conclusions in light of new observations and interpretations

**VALUE** = Make reasoned judgments and responsible commitments.

1. you will be able to compare personal, ethical, and scientific values in the fields of genetics, chemotherapy, environmental science and patient care
2. you will be able to see the value of the time commitment needed to succeed in the nursing and allied health programs

**COMMUNICATE** = Communicate with different audiences using varied means.

1. you will be able to practice written communication skills
2. you will be able to verbally communicate to fellow students and teachers using professional, scientific language during lectures and labs

**ACT** = Act purposefully, effectively and responsibly.

1. you will be able to manage your time and activities to achieve your academic goals
2. you will meet deadlines
3. you will apply the knowledge you learn to your career goals

**ADDITIONAL CLASSROOM INFORMATION**

**Security Statement**

*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 Canvas 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.’* ***It is a student’s responsibility to learn which actions can be considered as a plagiarism and act accordingly.***

Copying solutions provided by a tutor or anyone else is considered a plagiarism.

**Any pre-lab, post-labs, and take-home quizzes assignments for this class you can find on Chegg.com, Course Hero, and other sites were uploaded there illegally, without my permission and consent. Copying answers on your assignments from any sources, including on-line, is considered a plagiarism.**

Penalties for not following the Academic Honesty policy will be imposed as following:

1. **First attempt of cheating/ plagiarism on a test or the Final exam– immediate withdrawal with an “F” grade for the course in transcripts.**
2. **First attempt of cheating/plagiarism on all other assignments (pre-labs and post-labs, quizzes, including take home quizzes, etc.) – “0” grade for the whole assignment. Second attempt – immediate withdrawal with an “F” grade in course in transcripts and notification sent to student and academic services.**

**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, unless when allowed by the instructor. 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.valenciacc.edu/catalog/)
* The Student Handbook can be found at: <http://valenciacollege.edu/studentdev/CampusInformationServices.cfm>
* The Policy Manual can be found at <http://www.valenciacollege.edu/generalcounsel/>
* The college calendar can be found at <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)REWRITE 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.*

*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.***