

Instructor and Course Information

Instructor	Melvin J. Vaughn
Email	melsphysics@yahoo.com
Office Location	SM43D/SM5
Office Hours	MW: 12 PM – 1 PM Th: 2 PM – 3 PM or by appointment
Phone	408.741.2483
Website	http://instruct.westvalley.edu/vaughn/
Course Title	Physics 4B, Engineering Physics – Modern Physics
Course Number	Section #: 70712
Location	Lecture: SM44
Meeting Day(s) & Time(s)	LEC: MW 2:05 PM – 4:10 PM
Pre-(Co)requisites	Physics 4B
Textbook(s)	Title: Quantum Enigma Publisher: Oxford University Press Author(s): Bruce Rosenblum and Fred Kuttner ISBN: 019517559X or 978-0195175592 Title: The New World of Mr. Tompkins Publisher: Cambridge University Press Author(s): George Gamow ISBN: 0521639921 or 978-0521639927 (Optional) Title: Modern Physics Publisher: W. H. Freeman and Company Author(s): Paul A. Tipler and Ralph Llewellyn ISBN: 978-0-7167-7550-8

Introduction and Learning Objectives

Modern Physics is a fascinating subject that entails radical ideas such as Relativity, Quantum Mechanics, String Theory, and Dark Energy. Many of these ideas also have practical implications and are used many fields and applications, including the computer industry, GPS satellites, lasers, etc.

The purpose of this course is to provide you with a foundational introduction to Modern Physics. Physics 4D will prepare you for success in your future careers by introducing you to foundational

scientific principles, ideas, and tools used in Modern Physics today. We will immerse ourselves in various topics of Modern Physics and explore their ramifications to our world.

By the end of this course, the successful student will

- Understand the conceptual and quantitative foundations of Modern Physics.
- Understand and be able to apply the principles of Modern Physics to real-world phenomenon.
- Be able to demonstrate a conceptual understanding and quantitative familiarity with the following topics:

Special and General Relativity
The Bohr Atom
Atomic Structure
Line Spectra and Atomic Energy Levels
Wave-Particle duality
The Schrodinger Equation
The Hydrogen Atom
Solid State Physics

Class Web Site

The class website (<http://instruct.westvalley.edu/vaughn>) contains lecture notes, homework assignments, previous quizzes, exams and other resources that you may find beneficial. Use this site! It is a valuable resource for studying for quizzes and exams.

In general, I will try to have lectures available to download from the web site by 6 PM the night before class.

Adding and/or Dropping

You are responsible for taking the necessary steps to ensure that you are enrolled in class. If you are not enrolled in the class and need to be added, I may add you provided that there is available space. If you are allowed to add the class, I will give you an enrollment identification number that you must provide to admissions in order to officially enroll in the class.

You alone are responsible for dropping this class and must fill out the appropriate paperwork by the deadline date in order to officially drop the course. I reserve the right to fail and/or drop students who:

- have missed two or more Exams and/or labs or any combination thereof.
- have stopped attending class by the drop deadline.
- missed 20% or more of the total number of classes.

Attendance Policy

- Please be in your seat and ready to work by the start of class. Showing up to class late is very disruptive and may be penalized if it is disruptive or distracting.
- If you are absent from class, it is your responsibility to find out the material you have missed. A written excuse (medical, legal, family emergency, etc.) must be provided if an assignment, quiz, exam, or class is missed.

Lecture

Lecture time will include a presentation of the material, demonstrations of physical properties and ideas (“demos”), and in-class group or individual activities. During lecture, you will:

- complete conceptual/computational exercises
- be introduced to a new topic
- be introduced to techniques of problem solving
- perform in-class assignments and individual or group activities that will exercise your understanding of the topic presented in class.

Homework

Reading Assignments: A reading assignment from the text will be assigned every week. A written response to your reading must be turned in by the assigned due date in order to receive credit.

Computational Problems: Computational problems will be assigned each week. You have one week to submit the solution to each problem assigned. If submitted on-time, you will be given the opportunity to resubmit your assignment for full credit on any problem that you may have answered incorrectly. As long as you submit/resubmit your assignments on time, you will have an unlimited number of times to resubmit the assignment for full credit until the end of the semester.

Exams and Final

- You will be given one midterm and a final exam.
- Unless instructed otherwise, you are allowed to use one 8.5” x 11” sheet of paper to serve as your “cheat sheet” during each exam, including the final exam. The cheat sheet may contain formulas, but must not have any specific examples. The cheat sheet must be turned in with your exam and/or final.
- Each exam, including the final exam, is **comprehensive** and may cover **any** course material or topic assigned in class, including textbook readings, lectures, laboratory exercises, homework assignments, quizzes, and in-class activities.

Grading Policy

Note:

- No late work will be accepted, nor make-up assignment given.
- You must take each exam. No makeup exam will be given.
- The final exam grade will not be dropped, nor will it be replaced by any means.

For grading purposes, the class is divided into three categories:

1. Reading Responses (60%)
2. Computational Homework Problems (30%)
3. Midterm and Final (10%)

		Letter Grade (%)
	% Grade	$A \geq 91$
Reading	60%	$80 \leq B < 91$
Problems	30%	$65 \leq C < 80$
Midterm and Final	10%	$50 \leq D < 65$
Total:	100%	$F < 50$

Cheating Policy

- West Valley College's policy on academic dishonesty states that cheating or plagiarism is "prohibited conduct." In my class, cheating is considered to be copying any source that is not your own.
- Although I highly encourage students to work together in small groups on homework and various other assignments, any work you turn in must be **original** and written independently from others.
- Copying someone else's work is unacceptable and may result in your failure of and/or removal from the course.

Class Courtesy

Please be courteous to your instructor and your fellow students by giving the lecture your undivided attention. Each time you are a source of distraction during class, 0.05 G.P.A. point will be deducted from your Final class grade. Furthermore, if you are a source of distraction during any exam, including the final, a *minimum* of 0.10 G.P.A. points will be subtracted from your Exams and/or Final Exam grade.

Students who are repetitively disruptive during class will be asked to leave and may be dropped from the course.

Students with Special Circumstances

If you have a learning or physical need that will require special accommodations in this class, you will need to notify me in writing of your accommodation needs by the beginning of the second week of class. West Valley College makes reasonable accommodations for persons with documented disabilities. College materials will be available in alternate formats (Braille, audio, electronic format, or large print) upon request. Please contact the Disability and Educational Support Program at (408) 741-2010 (voice) or (408) 741-2658 (TTY) for assistance.

School Contact Numbers

The staff here at West Valley College is here to help you. Please call any of the following numbers for specialized assistance:

Health Services	(408) 741-2027
Counseling Center	(408) 741-2009
Disability and Educational Support Program	(408) 741-2010
Educational Transition/Adult Re-entry	(408) 741-2022
Career Programs	(408) 741-2098
Tutorial Services	(408) 741-2048

Emergencies

Earthquake:

In the event of an earthquake, duck for cover as best you can under the seats or tables. After the earthquake is over assemble in Parking Lot #2 for further instruction. Do not leave until you have been accounted for and dismissed.

Fire:

In the event of a fire, leave orderly through the nearest safe exit and proceed to Parking Lot #2 for further instruction. Do not leave until you have been accounted for and dismissed.

Medical:

Notify the instructor as soon as practical after you become aware of a medical emergency.

First Aid Kit:

The location of the first aid kit will be identified on the first day of class.

Emergency Numbers:

Please note the following numbers and locations in case of emergency:

Life threatening emergency (regular phone)	911
Life threatening emergency (campus phone)	9-911
Student Health Services on campus	4000
Safety escort services on campus	2092
Nearest accessible campus phone (SM division office)	2018
Nearest public phone	TBA
Nearest fire alarm	TBA
Nearest fire extinguisher	TBA