

VICTOR VALLEY COLLEGE SYLLABUS

FALL 2008

Course No.: **Physics 203**

Units: **4**

Lecture Days & Hours: **MW, 2:20 – 3:45 PM**

Section No.: **21550**

Course Title: **Engineering Physics III**

Rooms: **31 – 44**

Lab Days & Hours: **T, 2:00 – 5:10**

Instructor Name: **Michael Butros** Office No: **31 – 45**

Telephone: **(760) 245 – 2471 x 2506**

Office Hours: **Wednesday 10:30 – 12:10, Thursday 11:05 – 12:45**

Other times available by appointment

E-mail: butrosm@vvc.edu

Class URL: <http://www.butros.info/EngineeringPhysicsIII.htm>

FALL CALENDAR

Fall Semester Begins

August 25

Labor Day Holiday (no classes)

September 1

End of 1st 8-week term

October 18

Beginning of 2nd 8-week term

October 20

Veteran's Day Holiday (no classes) November 10

Thanksgiving Holidays (no classes) November 27-30

Fall Semester Ends

December 13

WITHDRAWAL POLICY

Last day to withdraw from a 16-week class and receive a "W" is November 4, 2008.

Prerequisite: PHYS 202 – Engineering Physics II and MATH 228 – Calculus III.
(MATH 228 may be taken concurrently.)

Textbook: Fundamentals of Physics, 8th Edition, by Halliday, Resnick and Walker.

Course Description: Content includes charge and matter, the electric field, electric potential, capacitors and dielectrics, direct current and resistance, electromotive force and circuits, the magnetic field, inductance, magnetic properties of matter, electromagnetic oscillations, alternating currents, electromagnetic waves, and the Maxwell Equations.

Course Objectives:

The student will be able to:

1. Analyze and solve problems involving Coulomb's Law.
2. Determine electric fields associated with various important charge distributions, same by applications of Gauss' Law.
3. Analyze and solve electric circuit problems which may involve resistance, capacitance and inductance, for direct currents and alternating currents.
4. Determine magnetic fields for certain important current distributions, and the effects of these fields on moving electric charges.
5. Solve a wide variety of problems by applications of the Maxwell Equations.
6. Competently perform experiments involving electric fields, magnetic fields, Joule's Law, and electric circuits utilizing the oscilloscope.

Course Content:

The following topics will be covered in lecture

- ❖ Coulomb's Law and Superposition
- ❖ Electric Fields
- ❖ Coulomb Fields
- ❖ Gauss' Law
- ❖ Direct Current Circuits
- ❖ Potential
- ❖ Capacitance
- ❖ Resistance
- ❖ Magnetic Fields
- ❖ Determination of Magnetic Fields
- ❖ Effects of Magnetic Fields on Moving Electric Charges
- ❖ Time Varying Magnetic Fields
- ❖ Magnetism and Matter
- ❖ Electromagnetic Oscillations and Alternating Currents
- ❖ Development and Applications of the Maxwell Equations

The following experiment topics will be covered in lab

- ❖ Electric Fields
- ❖ Joule's Law
- ❖ Electric Circuit Analysis
- ❖ e/m for the Electron

Attendance Policy: Regular attendance to lecture and lab is strongly recommended. (Class attendance is not a measure of performance or proficiency. Whether a student is just physically present in the class is not a valid basis for grading. Reference Title 5 Section 55002 of the California Code of Regulations: (A) Grading Policy. The course provides for measurement of student performance in terms of stated course objectives and culminates in a formal, permanently recorded grade based upon uniform standards in accordance with section 55758 of this Division. The grade is based on demonstrated proficiency in the subject matter and the ability to demonstrate that proficiency, at least in part, by means of written expression that may include essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.)

Grading Policy: The grading for this class will consist of the following components:

- Quizzes and HW 10 %
- Lab Reports 20 %
- Midterm One 20 %
- Midterm Two 20 %
- Final 30 %

The final grade will be given according to the following scale

Total Percentage	Final Grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

IMPORTANT NOTE: Students with disabilities, whether physical, learning, or psychological, who believe that they may need accommodations in this class, are encouraged to contact Disabled Student Program & Services as soon as possible to ensure that such accommodations are implemented in a timely fashion. Authorization from DSPS is required before any accommodation can be made.

Class Conduct Policies:

- Anyone caught cheating will receive an “F” for the course and I will also pursue **THE STRONGEST DISCIPLINARY ACTION AVAILABLE AT THE COLLEGE**
- **ONLY** those registered in the class are allowed in the classroom
- **TURN OFF** the sound feature on your cell phone or pager before class begins
- You are encouraged to work with each other on the homework assignments but each student should turn in their own assignment
- All assignments and exams are to be completed on the assigned date. **THERE WILL BE NO MAKE UP HOMEWORK ASSIGNMENTS OR EXAMS.** Inform the instructor if you are going to miss a class on a day when an exam or an assignment is due
- You are **ENCOURAGED** to ask questions in class
- Make sure you contact the instructor if you have any questions regarding the class
- **ABSOLUTELY** no food or drink during lab sessions.

TENTATIVE SCHEDULE – FALL 2008

PHYSICS 203

DAY	DATE	SCHEDULED
Monday	8/25/08	Introduction
Wednesday	8/27/08	Electric Charge
Monday	9/1/08	NO CLASS
Wednesday	9/3/08	Electric Fields
Monday	9/8/08	Electric Fields
Wednesday	9/10/08	Gauss' Law
Monday	9/15/08	Gauss' Law
Wednesday	9/17/08	Electric Potential
Monday	9/22/08	Electric Potential
Wednesday	9/24/08	Capacitance
Monday	9/29/08	Capacitance
Wednesday	10/1/08	Current and Resistance
Monday	10/6/08	Review for Midterm One
Wednesday	10/8/08	Midterm One
Monday	10/13/08	Current and Resistance
Wednesday	10/15/08	Circuits
Monday	10/20/08	Circuits
Wednesday	10/22/08	Magnetic Fields
Monday	10/27/08	Magnetic Fields
Wednesday	10/29/08	Magnetic Fields Due to Currents
Monday	11/3/08	Magnetic Fields Due to Currents
Wednesday	11/5/08	Induction and Inductance
Monday	11/10/08	NO CLASS
Wednesday	11/12/08	Induction and Inductance
Monday	11/17/08	Electromagnetic Oscillations
Wednesday	11/19/08	Review for Midterm Two
Monday	11/24/08	Midterm Two
Wednesday	11/26/08	Electromagnetic Oscillations
Monday	12/1/08	Maxwell's Equations
Wednesday	12/3/08	Maxwell's Equations
Monday	12/8/08	Review for Final
Wednesday	12/10/08	Final

TENTATIVE LAB SCHEDULE – FALL 2008

- ❖ Tuesday, August 26, 2008 – Introduction
- ❖ Tuesday, September 2, 2008 – Electric Fields
- ❖ Tuesday, September 9, 2008 – Electric Fields
- ❖ Tuesday, September 16, 2008 – Problems
- ❖ Tuesday, September 23, 2008 – EMF and Terminal Potential Difference
- ❖ Tuesday, September 30, 2008 – EMF and Terminal Potential Difference
- ❖ Tuesday, October 7, 2008 – Problems
- ❖ Tuesday, October 14, 2008 – Ohm's Law
- ❖ Tuesday, October 21, 2008 – Ohm's Law
- ❖ Tuesday, October 28, 2008 – The Oscilloscope: RL Circuits
- ❖ Tuesday, November 4, 2008 – The Oscilloscope: RC Circuits
- ❖ Tuesday, November 11, 2008 – Ratio of Charge to Mass for the Electron
- ❖ Tuesday, November 18, 2008 – Ratio of Charge to Mass for the Electron
- ❖ Tuesday, November 25, 2008 – Alternating Current Series Circuits
- ❖ Tuesday, December 2, 2008 – Alternating Current Series Circuits
- ❖ Tuesday, December 9, 2008 – Problems