

including applications to other disciplines such as biology and medicine and applications relating to modern technology. Strong emphasis is given to conceptual learning, to strengthen the student's logical capacities.

Equipment: Protractor, metric ruler, fine point retractable pencil, basic scientific calculator

Supplemental Instruction: Supplemental Instruction is provided after the lecture as a support for the students. The SI leader will provide some help with the homework, more problem solving, review difficult concepts, and answer questions. Participation is not mandatory, but strongly suggested.

Textbook: Serway/Vuille, College Physics, 11th edition, Cengage with WebAssign (Multi-term), ISBN: 9781337741569.

For students who choose just WebAssign & e-Book: Access Card to WebAssign for 11th Edition (Multi-term), ISBN: 9781337763486.

The Hybrid format of the textbook is cheaper than the hardcover one. It does not include end-of-chapter problems, but these can be found on the e-book. Register to WebAssign with the following class key: **oakland 5075 9999**

Homework: Every week, I will assign homework and it will contain problems and questions which will be graded. I will use the online program WebAssign, which will accept and automatically grade the homework. This requires the Access Card. The homework for each chapter can be submitted a maximum of 5 times. For accessing WebAssign: see the next page. Due time: The assignments are usually due at 11:59 pm on the specified date. No email homework is accepted. The homework is worth 30% of the final grade.

Lecture problems: One problem will be assigned every week during the Tuesday lecture; it will be due on Friday of the same week at 11:59 pm. These written assignments need to be sent by email to the course Teaching Assistant Kyle Piotrovsky at kp Piotrovsky@oakland.edu (as a single pdf file) before the due time. There will be 10 such problems given during the semester. The overall grade for this part is worth 10% of the final grade.

Exams: There will be two midterm exams; each midterm exam is worth 20% of the final grade. The exams consist of Problems and Conceptual Questions and will be mostly conducted in WebAssign during the class time. Please note: clear writing and clarity of expression is a very important component of the exams and the final project.

Final Project: Due to coronavirus and online teaching and learning, the final exam is replaced by the final project, which is worth 20% of the final grade. The project topics will represent the final third of the course; the list of topics will be given later. The written part of the project must be submitted by email to khain@oakland.edu by Tuesday, **April 20**. The written part might be followed by the oral part (conducted during the exam week), where each student will discuss the project with the instructor in a one-on-one online conversation; the details will be given later.

Make-up Policy: In order to be fair to the majority of students who take the exams on time, the general policy is: *NO make-up exams* will be given. A score of zero will be entered for missed tests. If you

cannot be present for an exam due to an unavoidable emergency, contact me before the exam if possible or as quickly as possible after the exam to see if an exception can be made.

Labs (Phy-1020 ONLY) are completely independent part of the course. Prof. Gopalan Srinivasan [srinivas@oakland.edu, 186F SEB, (248) 370-3419] coordinates this course. In order to pass Phy-1020 course, the lab part has to be satisfactory.

Grading Scale:

Lecture Problems	10%						
Midterm Exam 1	20%	A	≥96%	C+	70-74%	D+	55-59%
Midterm Exam 2	20%	A-	90-95%	C	65-69%	D	50-54%
Final Project	20%	B+	85-89%	C-	60-64%	F	0-49%
Homework	30%	B	80-84%				
Total	100%	B-	75-79%				

Attendance: Attendance to all lectures and zoom meetings is expected. Poor attendance usually correlates with poor course grade.

Add/Drops: The University's add/drop policy will be explicitly followed. It is the student's responsibility to be aware of the university deadline dates for dropping courses.

Reasonable Accommodations: Accessibility and Accommodations: It is the University's goal that learning experiences be as accessible as possible. Students with disabilities who have questions about course accessibility are encouraged to contact the instructor immediately. The Office of Disability and Support Services (DSS) is available to help. The DSS office is located in room 103A North Foundation Hall. For more information, call 248-370-3266 or visit <https://www.oakland.edu/dss>

Policy on Academic Misconduct: The University's regulations that relate to academic misconduct will be fully enforced. Any student suspected of cheating and/or plagiarism will be reported to the Dean of Students and, thereafter, to the Academic Conduct Committee for adjudication. Anyone found guilty of academic misconduct in this course may receive a course grade of F, in addition to any penalty assigned by the Academic Conduct Committee. Students found guilty of academic misconduct by the Academic Conduct Committee may face suspension or permanent dismissal. The full policy on academic misconduct can be found in the General Information section of the Undergraduate Catalog.

Excused Absence Policy: The University excused absence policy applies to participation as an athlete, manager or student trainer in NCAA intercollegiate competitions, or participation as a representative of Oakland University at academic events and artistic performances approved by the Provost or designee. For the excused absence policy, see: <https://www.oakland.edu/provost/policies-and-procedures/>

Bereavement Policy: In the event of the death of certain members within families or among loved ones, the University grants necessary bereavement absences upon student request. For the official bereavement policy, see: <https://www.oakland.edu/provost/policies-and-procedures/>

Student Preferred Name/Pronoun Policy: The University recognizes that as a community many of its members use names other than their legal names to identify themselves. As long as the use of this different name is not for the purposes of misrepresentation or a legal name is required by University business, policy or legal need, the University acknowledges that a "preferred name" will be used wherever possible. The University reserves the right to not accept a preferred name if it is deemed inappropriate, including a preferred name that is vulgar, offensive, fanciful, or creates confusion with another person.

WEB Assign: How to Get Started

Day One: Register

1. Go to <https://webassign.net> and click on LOG-IN.
2. Click on 'I have a Class Key'
3. Enter the Class Key: **oakland 5075 9999** (this allows me to see your homework grades)
4. Enter your chosen Login name and the required information
5. Click on 'Create my Account'

A review screen will appear with your Username, Institution code & Password.

Print and retain a copy of this information.

6. Once you Login, you need to enter the WebAssign Access Code.

- If you purchased a new textbook, the Access Code card is inside the book.
- If you purchased a used book, you may choose to purchase the Access Code online.

Notice: there is a 14 day grace period to use WebAssign. If you have not purchased your textbook yet, during this time you can do your homework without a registering code.

7. Once you have logged in, you will see the Homepage.

- I suggest you click on Guide (upper right corner) and read the Student Guide.
- For Technical Support click on Help or go to

<http://www.webassign.net/info/support/report.html>~

To access the Homework:

1. Go to <http://www.webassign.net/login.html>.
2. After you Login, click on 'My Assignments'.

Please notice:

- You may save your work without grading by clicking on 'Save Work' at the end of the question.

Next time you access the assignment, your work will still be available.

- Web Assign will not automatically submit your answer if you only 'Save' your work. Make sure you 'Submit' it before the due date and time.

- You may also choose to 'Submit New Answers to Question xx' or 'Submit All New Answers'.

Remember that there is a maximum of 5 submissions for each problem.

Tentative Course Schedule

Day	Date	Lecture Topics	Chapters
Th	1/7	Electric charge, Coulomb's law, Electric field	15.1 – 15.4
T	1/12	Electric field, examples, Flux of electric field	15.4 – 15.8
Th	1/14	Gauss's law and its applications	15.8
T	1/19	Trajectory of a charge in electric field, Electric potential	16.1 – 16.2
Th	1/21	Electrical potential energy, Conductors	16.2 – 16.4
T	1/26	Capacitance, capacitors, combinations; Electric current	16.5 – 16.8, 17.1
Th	1/28	Ohm's law, conduction, combination of resistors, circuits	17.1 – 17.6, 18.1
T	2/2	Electric power, Kirchhoff's rules, circuits	18.1 – 18.5
Th	2/4	Magnetic field and its action on a charged particle	19.3 – 19.4
T	2/9	Review	
Th	2/11	Midterm Exam 1: Chapters 15-18	
T	2/16	Magnetic forces and torques; Ampère's law	19.5 – 19.9
Th	2/18	Examples	19.5 – 19.9
	2/20-2/28	Winter Recess	
T	3/2	Induced emf, Faraday's law, Lenz's law	20.1 – 20.2
Th	3/4	Motional emf	20.3
T	3/9	Self-inductance, RL circuits, energy	20.5 – 20.7
Th	3/11	AC circuits, Resonance, Electromagnetic waves	21
T	3/16	Light, reflection and refraction	22
Th	3/18	Review	
T	3/23	Midterm Exam 2: Chapters 19-22	
Th	3/25	Mirrors; Wave optics: double slit experiment	23.1-23.3; 24.1-24.2
T	3/30	Wave-particle duality, wave function, Uncertainty principle	27.6 – 27.8
Th	4/1	Blackbody radiation and Photoelectric effect	27.1 – 27.2
T	4/6	Early models for atomic structure; Atomic spectra	28.1 – 28.2
Th	4/8	Bohr's model, examples	28.3
T	4/13	Beyond Bohr's model: the hydrogen atom	28.4
Th	4/15	Examples on atomic physics; review	28
T	4/20	Final project due date	

Note:

This schedule is subject to change except for dates of exams.