Instructors:
Ms. Shahnaz Sokhansanj (ssokhansanj@dcccd.edu)
Dr. Jayant Bhalerao (jhalerao@dcccd.edu)

Physics classroom and lab: W16
Credit Hours: 4
Office Hours: By email: we will try to respond to emails within 24 hours, otherwise please send a reminder.

Division: STEM
Office: STEM Division Office, Office Hours: 8:00 A.M.-5:00 P.M.
Office Phone: (214) 860-8649
Office Location: W120A

Course Description (Lecture)

Course Description: The second semester of an algebra and trigonometry-based physics sequence. Principles and applications of electricity, magnetism, optics and modern physics are studied. Laboratory experiments supporting the topics are included. (3 Lec., 3 Lab.)

Course Pre-requisites: PHYS 1401

Course description (Lab.):

This laboratory-based course accompanies PHYS 1402, College Physics II. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem-solving.

Co-requisite: PHYS 1402 – College Physics II
**Students Learning Outcomes (Lecture):**
Upon successful completion of this course, students will:

1. Solve problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.

2. Apply Kirchhoff’s Rules to analyze circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.

3. Solve problems in the electrostatic interaction of point charges through the application of Coulomb’s Law.

4. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents which produce them.

5. Use Faraday’s and Lenz’s laws to determine electromotive forces and solve problems involving electromagnetic induction.

6. Articulate the principles of reflection, refraction, diffraction, interference, and superposition of waves.

7. Describe the characteristics of light and the electromagnetic spectrum.

**Students Learning Outcomes (Lab):**
Upon successful completion of this course, students will:

1. Develop techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.

2. Demonstrate the collections, analysis, and reporting of data using the scientific method.

3. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.

4. Solve problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.

5. Apply Kirchhoff’s Rules to analysis of circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.

6. Solve problems in the electrostatic interaction of point charges through the application of Coulomb’s Law.
7. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents which produce them.

8. Use Faraday’s and Lenz’s laws to determine electromotive forces and solve problems involving electromagnetic induction.

9. Solve problems applying the principles of reflection, refraction, diffraction, interference, and superposition of waves.

10. Solve practical problems involving optics, lenses, and mirrors.

Course Outline:
- Electric Fields and Forces
- Electrical Potential
- Current, Resistance, and Electric Circuits
- Magnetic Fields and Forces
- Electromagnetic Induction
- AC Electricity
- Electromagnetic waves
- Optics

Core Objectives: will be assessed through the assigned project.

- **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal. More information is posted below.
- **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Communication Skills** - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Please read the content of this folder very carefully! This is the calendar, evaluation procedure, and the summary of rules for the course.

Please add a short introduction about yourself in “Virtual Classroom” to receive credit for one homework grade by the due date given in the course calendar. You may post your introduction after this date, but you will not receive any credit.
Course procedure:
Lectures and assignments will be delivered to you through eCampus portal: Blackboard on the DCCCD district eCampus server (ecampus.dcccd.edu). For many of you, this may be your first online (or Internet) course. You do not need to be a computer whiz to be successful in this course. From a computer standpoint, absolutely everything is simple. By the time you review all the documents posted on (ecampus.dcccd.edu) you will know almost everything needed to be successful in this course. (It is critical that you read and review all the folders under all the tabs on eCampus.)

How to login on ecampus.dcccd.edu:
Go to http://ecampus.dcccd.edu and click on “Access Courses.” If you are logging in for the first time, enter your student ID number with a lowercase “e” in front of the number. This number is used as both the user name and the temporary password. Please change your password after your initial login. Example: user name: e3456789; password: e3456789.

- Use an updated browser
- Have all Javascript settings enabled in your browser
- Tip: If one browser does not perform well, try another.
- Set your browser to accept all cookies.

Click on Password guide or copy and paste the link “dcccd.edu/password-update” for guides and more information about the password.

Please ensure you have Java and Adobe Flash Player installed on your computer, and you are using the latest version of your browser

Rules for how to contact the instructor:
This is a web-based course, but I am easily accessible whenever help is required. My email address is: ssokhansanj@dcccd.edu

In your email, make sure you include your course number (i.e., 1404) and your full name in the subject box. I will not be able to respond without this information.

Please verify your eCampus email address to ensure that you receive my emails.

You are required to check your email and the “Announcements” folder on eCampus daily for any new information.
Group work opportunity:

- The main core objective for the Fall 2019 semester is **Teamwork**. Teamwork is when individuals work together with a common goal. It involves good communication, distribution of responsibilities, completion of tasks in a timely manner, and positive relationships where conflicts are resolved through dialogue and mediation.
- Since we will be assessing teamwork skills of the students this semester, it is required that ALL students form groups. Each group should consist of not more than two people.
- Advantage of working in groups: working on assignments is easier if you have a partner. It also helps you stay motivated and on track.
- If you have tried and cannot form a group of two people, please let the instructor know, and possibilities for finding a partner for you will be explored.
- Both names of the team members should be on top of the assignments. Please put your name first, followed by that of your partner.
- Each person in the group must submit the assignments in his/her own folder to receive a grade for the assignment. This means there will be NO grade if you do not submit the assignment to your own folder, even though your name is on your partner’s assignment.
- Every person is responsible for contributing to the assignment. You do not need to include your partner’s name on the assignment if your partner does not cooperative or contribute. You can state at the top of the assignment “Partner (first and last name) did not contribute at all.”

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Introduction/Virtual Classroom:

- To help you find someone you would like to work with, please introduce yourself and please provide relevant contact information in the Virtual Classroom on eCampus.
- You can post this information under the "Introductions" forum by creating and editing your own threads. Please note that all communication and posts must follow proper academic classroom etiquette.
- Your posts should include the following:
  First and last name, email address, major, any other information you would like to share such as your preferred time for working on assignments. You can add additional interesting information about yourself.
- You can create, edit, and delete your own threads in any of the forums in the Virtual Classroom.

Please make a 2-minute video.*

Please make your video while you are introducing yourself. Follow the following instruction to upload your video to the DCCCD MediaHub website **YuJa**
(https://dccc.du.edu). Use the button in the menu on the left on the course page on eCampus. There are two purposes to do this video recording.

- 1. Your classmates will get to meet you virtually.
- 2. This will allow you to practice recording a video for your semester project.
- *Please see the Instructional Documents button on eCampus for more information.*

The introduction will be counted towards your class attendance for financial aid purposes, and will also earn one homework grade only if your post is submitted by the due date.

Please see the due dates in the course calendar in the syllabus folder.

Course Material:
Reading Material

**Required:** access code to the assigned version of the textbook on Mastering Physics (Pearson).

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Author(s): Knight, Randall D. I Jones, Brian I Field, Stuart</td>
</tr>
<tr>
<td>Discipline(s): Physics</td>
</tr>
</tbody>
</table>

Please read the document with instructions explaining how to purchase the access code by clicking on the “Mastering Physics” button on eCampus.*

1. **Access key to Mastering:** You are required to purchase the access key for the following textbook. The image of the textbook helps you to select the right access key.

**Optional:** the assigned version of the textbook either in electronic or hardcover formats.

**Recommended:** any edition (old or new) of a textbook related to the course from any publisher.

**Provided:** *FREE textbook* available for download at [http://openstax.org](http://openstax.org). For example: [https://openstax.org/details/books/physics](https://openstax.org/details/books/physics)
You can download the book in pdf format or view it online free of charge. You can also find the pdf file under the “Course Materials” tab on eCampus. You can also order the book online or get it from your campus bookstore.

Please also find other course-related resources under Course Materials folder on eCampus.

Please note that you can use any college physics textbook for your own reading. The above image helps you select the correct Mastering Physics access code associated with this textbook.

There is a button on eCampus (Blackboard) called Mastering Physics that takes you to the Mastering Physics web site and assignments. You will then be able to purchase the access code using a credit card. **You do NOT need a course ID for Mastering Physics, since the course on eCampus is directly linked to the corresponding course on Mastering Physics. Please do not try to enroll in Mastering Physics outside of eCampus, you will get an error.**

You will find a handout on how to obtain an access code in the syllabus folder/instructional document folder on eCampus.

**Assignments and Course Units**
The following section explains how the lessons and assignments are organized on eCampus.

- The tab called “Course Units” on eCampus includes all the units/modules for the course.
- The course units include:
  - Learning material such as objectives, the course content, PowerPoints, videos, animations, etc.
  - All the assignments such as lab experiments, quizzes, homework on Mastering Physics etc.
- To access these materials, please click on the “Course Units” tab, and then on the “Unit” link on eCampus.
- All assignments for a given unit will have the same due date.
- The due dates can also be found in the Course Calendar.
- You may submit your completed assignments at any time before the due date. Once submitted, the instructor is allowed to grade your assignment.
- Purchasing the access code to Mastering Physics is mandatory for homework and exams. Do not rely on the free trial access code.
- You are responsible for uploading the correct assignment to its folder on eCampus. Make sure the file has been saved as a .pdf or .doc or .docx document. Instructors cannot open assignments with the " .pages" extension, and you will receive a zero
for any such a file or file format that cannot be opened in eCampus. It is your responsibility to check that the submitted document is correct and can be opened in eCampus.

- During the short terms such as the Winter term, May and Summer, the assignments may be visible to you for the entire class time. However, for regular semesters, assignments will be made available to you sequentially, after the due date has passed for each unit.*

- Any late assignment (homework, lab, and quiz) will be penalized 20% per late day.

- The lab reports should include the names of all group members. Missing names will lose 10 points of the grade.

*The reason is that the assignments are revised and modified during a regular semester. Therefore, do not do any assignment before the start date for a given unit.

1. **Homework assignments:** these will be posted on Mastering Physics. You have three attempts for each question. You will be able to view your grades after your third submission. Your grade will updated to eCampus periodically. **Please do not worry if you see discrepancies between the grades on eCampus and Mastering Physics. They will be synchronized later on. Please do not need email the instructor about this.**

2. **Lab Assignments:** lab instruction will be posted under the “Lab Assignments” folder for each units of lessons on eCampus. There will be virtual labs, practical labs, and short project activities. You will be provided with a list of items needed for practical labs. These items can be found at home or in local stores such as Walmart, Home Depot, hardware or electronics stores, amazon.com.

3. **Project Assignment:** you are required to write two to three pages about a physics-related topic. Details about the project will be posted on eCampus a few weeks after the semester starts. You are required to record a video presentation in which you discuss your paper. You will then copy and paste your video presentation link on your paper next to your name, and also in the textbox of the folder on eCampus.

4. **Exams:** information about the exams is posted below. You are required to know how to scan a document before the exam.

5. **Homework on paper:** there will be a few HW problems for which you need to show the complete solutions to on paper. You will then scan, and upload this to its folder on eCampus.
Exam(s):

The following exam rules apply to all students. Please read them carefully to understand how the exams will be conducted. **There will be no exceptions, exemptions, or negotiations.** These rules exist to promote honesty, integrity, and accountability, which are universally admired qualities, and qualities that employers look for. These qualities are emphasized in the DCCCD Student Code of Conduct (https://www1.dcccd.edu/catalog/GeneralInfo/CollegePolicies/code.cfm?loc=%7Bloc:code%7D).

- Read the exam instructions before you start the exam.
- The exam will be given from 2:00 p.m. to 6:00 p.m. on the designated date(s). The dates will be posted in the course calendar.
- Each exam has two parts, the first part is on Mastering Physics, and the second part is on eCampus. There are usually 2 to 3 versions of the exams. You will need to open the grade book 5 minutes before the exam to find out your assigned version. The assigned version applies to both parts of the exam.
- The first part of the exam is 20% of the exam grade, and consists of multiple choice questions on Mastering Physics. This part must be completed before you move on to the second part, and it will be available from 2:00 to 3:00 p.m.
- The second part of the exam will be on eCampus, in a folder called “Exams.” This part will be available from 3:00 p.m. to 6:00 p.m., and it is worth 80% of the exam grade. It will consist of questions that need to be answered on paper.
- To receive credit for a problem, you MUST show the equations you used, all the steps of your calculations, labeled diagrams (sketches), vectors, units, and explanations. Without a labeled diagram, the solution does not have any meaning. Make sure all your work is legible and dark enough to show up on a scan.
- After you finish, write your name on the first page, and scan your exam so that all pages are combined to form one file. Adjust the scan settings so that all the exam material is clearly visible on the scan.
- Submit your completed exam to the same folder where you opened the exam. Submit the exam at least 10 minutes before 6:00 p.m. The exam folder will be closed at 6:00 p.m.
- Any exam sent by email for any reason will lose 20% of the exam grade without negotiation.
- You will lose 10 points if you submit your exam separately page by page and not as a single, combined file.
- The exams are NOT group exams. Any two exams with identical solutions for a problem will automatically receive a zero.
- While taking the exam, if you have a question about the questions asked, do not panic. Just email your question to the instructor. Please make sure to mention your class number and the question number and the part of the problem you have the question about.
- Alternate dates and times for the exams will not be granted. We understand you might have jobs and other commitments, but you are expected to plan in advance and take the exams on the designated days and times.
All the due dates are by 11:59 P.M.

Course Assignments and Calendar

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight by percentage</th>
<th>Due date by 11:59 P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework on Mastering</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Lab experiment</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Project</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>HW on paper</td>
<td>10%</td>
<td>5 HW on paper for units 2-unit 6</td>
</tr>
<tr>
<td>Exam</td>
<td>30%</td>
<td>2 exams each 15%</td>
</tr>
<tr>
<td>Extra Credit/ Star party</td>
<td>Maximum 10 points.</td>
<td>2 point for each event</td>
</tr>
</tbody>
</table>

Class introduction and making groups

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight by percentage</th>
<th>Due date by 11:59 P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction in virtual classroom</td>
<td>One homework grade</td>
<td>Thursday, August 29</td>
</tr>
<tr>
<td>Making a video of your introduction</td>
<td>One homework grade</td>
<td>Thursday, August 29</td>
</tr>
<tr>
<td>Making groups.</td>
<td></td>
<td>Sunday, September 1st.</td>
</tr>
</tbody>
</table>

Calendar:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Electric Force, Electric Field Electric Potentials</th>
<th>September 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electric Current and Resistance Electric Circuits -Resistors and Capacitors</td>
<td>October 13</td>
</tr>
<tr>
<td>2</td>
<td>Magnetism: Magnetic Force and Magnetic Field Magnetic Induction</td>
<td>November 10</td>
</tr>
<tr>
<td>3</td>
<td>Alternative Electric Current (AC) Electromagnetic waves</td>
<td>December 01</td>
</tr>
<tr>
<td>4</td>
<td>Optics: Geometric and Wave Optics</td>
<td>December 08</td>
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</table>

Exams

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date/Time</th>
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<tbody>
<tr>
<td>Exam 1-Sunday November 10</td>
<td>2:00-6:00 P.M.</td>
</tr>
<tr>
<td>Exam 2- Sunday December 08</td>
<td>2:00-6:00 P.M.</td>
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</table>
**The instruction for each category is in the corresponding folder on ecampus**

_Late Work Policy:_ late assignments will be penalized 20% per day, NO exceptions.

_Please note that there will be absolutely No Late assignments after the last day of class._

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**Responsibility of College Learner:**

As a student in this college course, it is your responsibility to have necessary course materials and to locate a computer with reliable internet access. Computer and internet problems not associated with the eCampus and Mastering websites, technical problems, or downtime, will not be considered exceptions to the late work and makeup exam policies. It is also your responsibility to have the necessary course materials to complete the assignments. **You will not receive extensions on assignments or tests due to financial problems, not receiving Mastering Physics by the start of class, or personal computer problems.** Please plan ahead and do not wait until the last minute to complete assignments or tests.

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**Institutional Policies:**

Please visit [www.mountainviewcollege.edu/syllabipolicies](http://www.mountainviewcollege.edu/syllabipolicies) for a complete list of institutional policies (Stop Before You Drop; Withdrawal Policy; Repeating a Course; Financial Aid; Academic Honesty; Americans with Disabilities Act Statement; Harassment, Discrimination and Sexual Misconduct, Religious Holidays; and Campus Emergency Operation Plan and Contingency Plan).

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<table>
<thead>
<tr>
<th>Fall Academic Semester 2019 Dates for 16-Week Fall Semester</th>
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<tbody>
<tr>
<td>August 26 (Monday)</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>September 2 (Monday)</td>
<td>Labor Day Holiday</td>
</tr>
<tr>
<td>September 3 (Tuesday)</td>
<td>Classes Resume</td>
</tr>
<tr>
<td>September 9 (Monday)</td>
<td>12th Class Day (Certification Date)</td>
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<tr>
<td>November 14 (Thursday)*</td>
<td>Last Day to Withdraw*</td>
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<tr>
<td>Date</td>
<td>Event</td>
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<tr>
<td>-----------------------------</td>
<td>--------------------------------------------</td>
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<tr>
<td>November 28 (Thursday)</td>
<td>Thanksgiving Holidays Begin</td>
</tr>
<tr>
<td>December 2 (Monday)</td>
<td>Classes Resume</td>
</tr>
<tr>
<td>December 9-12 (Monday thru Thursday)</td>
<td>Final Exams</td>
</tr>
<tr>
<td>December 12 (Thursday)</td>
<td>Semester Ends</td>
</tr>
<tr>
<td>December 16 (Monday)</td>
<td>Last day for faculty to submit grades electronically through eConnect to the Registrar's Office.</td>
</tr>
</tbody>
</table>

**Syllabus Change Disclaimer**- Instructors reserve the right to amend the syllabus as necessary.