PHYSICS 1304: Introductory Electricity and Magnetism

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OFFICE HOURS

TBD

Office hours in this course will be remote using Zoom.

RESPONSE TIME

Please note that my goal is to respond to student communications within 24 hours during **weekdays**. If for some reason I am unable to do so, I will follow up as soon as possible. I also always try to let you know ahead of time if I will be unreachable.

ASSIGNMENT FEEDBACK

My goal is to return graded assignments to you within 48 hours. If for some reason I am unable to do so, I will do my best to let you know in advance and will return your graded assignment to you as soon as possible.

Course Description

For science and engineering majors. Covers electricity, magnetism, electromagnetic radiation, and special relativity. Prerequisite: <u>PHYS 1303 (https://catalog.smu.edu</u> /preview_entity.php?catoid=33&ent_oid=3540#tt360)_ or <u>PHYS 1307 (https://catalog.smu.edu</u> /preview_entity.php?catoid=33&ent_oid=3540#tt233)_. Prerequisite or corequisite: <u>MATH 1338</u> (https://catalog.smu.edu/preview_entity.php?catoid=33&ent_oid=3540#tt3837)_ or <u>MATH 1340</u> (https://catalog.smu.edu/preview_entity.php?catoid=33&ent_oid=3540#tt3625)_.

COURSE LEVEL OUTCOMES (CLOs)

Course Objectives:

The specific learning goals of this course are as follows. Upon successful completion of this course, students will be able to:

- 1. Explain the nature of electrical charge, force, potential, and fields and describe the behavior of electrical phenomena; explain the basic components of electrical circuitry, including conductors, batteries, resistors, and capacitors; explain the nature of magnetism and describe the behavior of magnetic phenomena; explain the nature of light and its connection to electricity and magnetism; explain the basic working of optical systems; explain how the study of electricity, magnetism, and light set the stage for a 20th-century revolution in our understanding of the universe;
- 2. Setup and solve quantitative problems in the areas described above, and thus be able to apply their understanding of electricity, magnetism, light, and optics to areas other than physics, such as medicine, biology, chemistry, electronics, and everyday life;

3. Demonstrate, through performance on homework, quizzes, in-class exercises and discussion, and exams, a clear understanding of the principles and application of electricity, magnetism, light, and optics.

Student Learning Outcomes:

Pure and Applied Sciences Level 1 [PAS1] Student Learning Outcomes:

- 1. Students will be able to demonstrate basic facility with the methods and approaches of scientific inquiry and problem solving.
- 2. Students will be able to explain how the concepts and findings of science or technology in general, or of particular sciences or technologies, shape our world.

Quantitative Reasoning [QR] Student Learning Outcomes:

- 1. Students will be able to develop quantitative models as related to the course subject matter.
- 2. Students will be able to assess the strengths and limitations of quantitative models and methods.
- 3. Students will be able to apply symbolic systems of representation.
- 4. Students will be able to test hypotheses and make recommendations or predictions based on results.
- 5. Students will be able to communicate and represent quantitative information or results numerically, symbolically, aurally, visually, verbally, or in writing.



Grades

Your work and overall performance will be recorded on Canvas. Students can access their current weighted average at any time via <u>Grades. (https://smulearnonline.instructure.com</u>/courses/68169/gradebook)

OVERVIEW

Activities	Percentage
Participation Activitie	5%
Reading Quizzes	5%
Homework	10%
Mini-Exams	10%

Activities	Percentage
Midterm Exams	15% each
Cumulative Final Exam	25%
TOTAL	100%

HOMEWORK

Homework will be assigned through WileyPLUS and must be submitted before 11:00 am on the due date. All answers to your homework questions/problems should be submitted through WileyPLUS. In addition, you will be expected to submit written solutions to your homework problems by uploading them through Canvas. NO CREDIT WILL BE GIVEN FOR LATE HOMEWORK. I encourage you to discuss your work with a study group and use office hours if you have difficulty.

EXAMS

There will be three mid-term exams (TBD) and a final cumulative exam (Saturday, December 12 from 11:30 - 2:30 pm). Mini-exams will be administered randomly throughout the semester. Mini-exams will be announced at least one class period in advance.

GRADING SCALE

Range	Letter Grade	
94-100	A	Excellent Scholarship
94-90	A-	Excellent Scholarship
90-87	B+	Good Scholarship
87-84	В	Good Scholarship
82480	В-	Good Scholarship
80-77	C+	Fair Scholarship
77-74	С	Fair Scholarship
74-70	C-	Fair Scholarship
70-67	D+	Poor Scholarship

Range	Letter Grade	
67-64	D	Poor Scholarship
64-61	D-	Poor Scholarship
<60	F	Fail

Materials

REQUIRED

WileyPLUS Fundamentals of Physics by Halliday & Resnick (11th edition online). This can be

purchased directly from the WileyPlus website <https://www.wileyplus.com/> .

Technology

To be successful in this course, students should have basic keyboarding and computer skills, and be comfortable navigating the Internet. This fully online course occurs primarily via <u>canvas.smu.edu (https://canvas.smu.edu/)</u>. <u>Zoom (https://www.smu.edu/OIT/services/zoom)</u> Web Conferencing is used in this course as well for virtual (i.e., real-time, synchronous) meetings, and YouTube is used for viewing pre-recorded lectures.

IMPORTANT

A **webcam** is required for recording activities and taking exams. If your device does not have a built-in webcam, one can be purchased at a local consumer electronics store or through an online retailer like <u>Amazon (https://www.amazon.com/s/ref=nb_sb_noss_1?url=search-alias%3Daps&field-keywords=webcam)</u>.

Your homework will need to be uploaded to Canvas in a specified format. I recommend the free <u>CamScanner app (https://www.camscanner.com/)</u> which produces adequate quality documents and has been a favorite of past students. However, you may use any method you would like to digitize your work, so long as the final document is legible as determined by the Course Instructor.

CANVAS

Please be sure that your device or devices meet the **technical requirements** for Canvas. <u>Technical requirements (https://community.canvaslms.com/docs/DOC-2059)</u> and <u>browser requirements (https://community.canvaslms.com/docs/DOC-1284)</u> for Canvas are located in the <u>Canvas Student Guide (https://community.canvaslms.com/docs/DOC-</u> <u>4121#jive_content_id_Computer_Specifications)</u>. If you need Technical Support with Canvas, click the Help link on the left side <u>Global Navigation (https://community.canvaslms.com</u> <u>/docs/DOC-1281)</u>. From there you can Search Canvas Guides, Chat with Support, or Submit a Request for assistance. You can also contact the SMU <u>IT Help Desk (http://www.smu.edu</u> <u>/OIT/Help)</u> for assistance with Canvas.

TECHNICAL SUPPORT

If you run into any technical problems, there are a number of resources available to you. First, you can always check with me; in many cases, I can walk you through technical issues. Also, you can contact the <u>SMU IT Help Desk (http://www.smu.edu/OIT/Help)</u> for assistance with Canvas and Zoom. Otherwise, here are additional useful resources:

- Canvas (https://community.canvasIms.com/docs/DOC-4121)
 - Click <u>Help (http://help.instructure.com/)</u> on the <u>Global Navigation</u> (<u>https://community.canvaslms.com/docs/DOC-4121#jive_content_id_Global_Navigation</u>) to search the Guides, <u>Chat (https://cases.canvaslms.com/apex/liveagentchat)</u> or contact Instructure Support via email or phone
- Panopto
 - Search the <u>Panopto Support site (https://support.panopto.com/s/)</u> (Links to an external site.) for forums and documentation, or contact the <u>SMU IT Help Desk.</u> (<u>https://www.smu.edu/oit/help</u>)
- Zoom
 - Search their <u>Knowledge Base (https://support.zoom.us/hc/en-us)</u> or <u>Submit a</u> <u>Request (https://support.zoom.us/hc/en-us/articles/201362003-Zoom-Technical-Support)</u> (<u>https://support.zoom.us/hc/en-us/articles/201362003-Zoom-Technical-Support</u>)

ZOOM

Zoom (https://www.smu.edu/OIT/Services/Zoom) is used for online synchronous (i.e., real-time) meetings in this course and office hours. Please be sure your devices meet the <u>technical</u> requirements (https://support.zoom.us/hc/en-us/articles/201362023-System-Requirements-for-PC-Mac-and-Linux) for Zoom.

PRIVACY POLICIES

- <u>Canvas by Instructure (https://www.canvaslms.com/policies/privacy)</u>
- Kaltura Video App in Canvas (https://corp.kaltura.com/privacy-policy#platform)
- Panopto Privacy (https://www.panopto.com/privacy/)
- Respondus LockDown Browser (https://www.respondus.com/about/privacy.shtml)
- <u>SMU OIT Policies and Legislation (https://www.smu.edu/OIT/Infosec/Policy)</u>
- Zoom (https://zoom.us/privacy)

ACCESSIBILITY

- Canvas
 - Accessibility within Canvas (https://community.canvasIms.com/docs/DOC-2061)
 - Voluntary Product Accessibility Template (https://www.canvaslms.com/accessibility)
- Kaltura Video App in Canvas (https://corp.kaltura.com/products/core-platform/videoaccessibility)
- <u>Panopto (https://support.panopto.com/s/article/Learn-About-Accessibility-Features)</u> (<u>http://www.respondus.com/products/accessibility-lockdown.shtml</u>)
- Zoom (https://zoom.us/accessibility)

Course Guidelines

As this course will be taught completely online, there are certain expectations that should be adhered to. The following guidelines detail the most important aspects of the online format: **Netiquette Rules** can be here.

EXPECTATIONS

I expect from the students, sincere effort, honesty, punctuality and that their work follows the homework guidelines which can be found in the "first day" folder in the files section of the Canvas page for this course.

Absent questions or requests for assistance, instructors must assume that students understand the material being covered and are able to complete the assignments. It is primarily through your questions that the instructor learns where the students are struggling to understand and on which topics more time needs to be spent for the students' benefit.

WORKLOAD

Students will be responsible for reading selected sections from their textbook, watching a lecture video and completeing a reading quiz prior to each class period. In addition, a homework assignment consisting of approximately 15-20 questions or problems will be due each week. **No credit will be given for late homework**. Therefore, it is expected that students will spend between 12 and 15 hours per week on this course.

ASSESSMENT

Exams and MiniExams will consist of a combination of multiple choice questions and problems. No partial credit will be given for multiple choice questions. Problems will be assigned points using "Dr. Cooley's Rubric for Exam Problems" as appropriate.

Dr. Cooley's Rubric for Exam Problems						
Criteria	Absent	Beginning	Developing	Accomplished	Mastered	
Significant Figures: Result has the correct number of significant figures.	0 1					
Units: Result has the correct units.	0 1					
Key Concepts: The student clearly identifies the key concepts in the outline of the solution to the problem.	0	1	2	3	4	
Application: Student has outlined key steps and showed adequate details of calculations or thought process required to obtain a correct result. The calculations and details lead to and pertain to a correct soluton and do not contain mistakes or extraneous details. The student has obtained the correct numerical result.	0	1	2	3	4	

Answers to homework questions and problems must be submitted to WileyPLUS. You will have 5 attempts to enter a correct answer for each question/problem in WileyPLUS. In addition, you will be required to upload the written solutions to Canvas. Those solutions must follow the Homework Solutions Guidelines. One problem from each assignment will be randomly chosen for grading according the "Dr. Cooley's Homework Rubric".

Dr. Cooley's Homework Rubric

Criteria	Absent	Beginning	Developing	Accomplished	Mastered
Adherence to Homework Policy: Student adheres to the Physics 1304 homework policy that is posted on canvas.			0		1
Significant Figures: Result has the correct number of significant figures.		0			
Units: Result has the correct units.		0			1
Key Concepts: The student clearly identifies the key concepts in the outline of the solution to the problem.	0	0	1	2	3
Application: Student has outlined key steps and showed adequate details of calculations or thought process required to obtain a correct result. The calculations and details lead to and pertain to a correct soluton and do not contain mistakes or extraneous details. The student has obtained the correct numerical result.	0	1	2	3	4

Each student will be assigned a team for the semester. In class activities will be completed and submitted by teams. Every student on the team will receive the same score for the in class activity. In class activities will be graded using Dr. Cooley's In Class Activity Rubric

Dr. Cooley's In Class Activity Rubric					
Criteria	Absent	Beginning	Developing	Accomplished	Mastered

Students have identified the key concepts in the outline of the solution to their problems. The team has outlined key steps and showed adequate detail of their calculations or through processes required to obtain a correct result. In the case that the students had difficulties, an adequate explanation of their difficulties was described.	1	2	3	4	5
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A course grade of Incomplete (I) will be given only in the case of extraordinary circumstances that prevent the student from finishing the semester. Students must have completed at least 50% of the course with a passing grade to be eligible for an Incomplete grade.

COMMUNICATION PATTERNS

Direct communications with the instructor should be made in the manner indicated by the instructor. General questions and questions that are relevant to multiple students, that is, questions that are not specific to an individual and involve that individual's private information, should be posted on the course wall.

It is the student's responsibility to ensure that all communications are received or acted upon. All students should be familiar with <u>Netiquette (https://smulearnonline.instructure.com/courses</u> /<u>68169/pages/netiquette-%7C-5-min)</u> guidelines observed in this course for interactions with the instructor and between classmates.

Student Services

The following services and resources are available to SMU students:

- <u>Altshuler Learning Enhancement Center (http://www.smu.edu/Provost</u> /ALEC?utm_medium=alias%20redirect&utm_source=smu&utm_campaign=%2Falec)
 - ALEC offers study-skill workshops and can help you with learning strategies and test preparation. Their phone number is (214) 768-3648.
- <u>Altshuler Writing Center (http://www.smu.edu/Provost/ALEC/WritingCenter)</u>
 - The Altshuler Writing Center is open to all undergraduate students who need technical advice on their assigned papers. The writing center is open most afternoons and a few evenings. To work with someone at the writing center you must make an appointment

in advance. To contact please call (214) 768-3648.

- <u>Caring Community Connections (CCC) program (https://www.smu.edu/StudentAffairs</u> /officeofthedeanofstudents/StudentSupport/CCCProgram)
 - This is a resource for anyone in the SMU community to refer students of concern to the Office of the Dean of Students. Faculty play a critical role in identifying students who are experiencing challenges, as you may be the first to notice a change in behavior such as class attendance or performance. The online referral form can be found at <u>smu.edu/deanofstudentsccc (http://www.smu.edu/deanofstudentsccc)</u>. After a referral is submitted, students will be contacted to discuss the concern, strategize options, and be connected to appropriate resources. Additionally, should you have concerns about students and are unclear about what to do, please see the <u>CCC Reference Guide</u> (<u>https://www.smu.edu/-/media/Site/StudentAffairs/StudentLife</u>
 <u>/PDF/Brochure_CCC_Details_Concerned_about_an_SMU_Student.pdf?la=en</u>, or contact the Office of the Dean of Students at 214-768-4564.
- DASS (https://www.smu.edu/Provost/ALEC/DASS)
 - Students needing academic accommodations for a disability must first contact <u>Disability Accommodations & Success Strategies (http://www.smu.edu</u> /<u>Provost/ALEC/DASS)</u> (DASS) at (214) 768-1470 to verify the disability and to establish eligibility for accommodations. They should then schedule an appointment with the professor to make appropriate arrangements. (See an attachment describes the DASS <u>procedures (https://www.smu.edu/Provost/SASP/DASS/DisabilityAccommodations</u>
 <u>/PoliciesandProcedures)</u> and relocated office.) If you have a disability accommodation you must contact DASS and have a letter of accommodation delivered to the instructor no later than the third day of class. You can email a scanned copy of your letter.
- my.SMU (https://my.smu.edu/)
 - Online portal for SMU students that allows you to view personal information, emergency contact information, register for AARO (if applicable), view class schedule, enroll in classes, add/drop/swap classes, view grades and view financial aid packages.
- <u>SMU Bookstore (http://smu.bncollege.com/webapp/wcs/stores/servlet</u> /<u>BNCBHomePage?storeId=17551&catalogId=10001&langId=-1</u>)
 Information on textbooks, events, buyback, promotions and more.
- <u>SMU Bursar (http://www.smu.edu/EnrollmentServices/Bursar</u>)
 - Information on student finances, bill pay and more.
- <u>SMU Counseling Services (http://www.smu.edu/StudentAffairs/HealthCenter/Counseling)</u>
 - College can be a stressful time. There are many transitions and major life events occurring while you are a college student. If you or a friend is going through a difficult time and needs someone to talk to please seek out the resources provided by the counseling center, located in the Health Center and their phone number is (214)

768-2211. For 24 hour help contact (214) 768-2860.

- <u>SMU Dedman Recreation Center (http://www.smu.edu/StudentAffairs/RecSports)</u>
 - Regular exercise is one of the best things you can do for your mental and physical well-being.
- SMU Libraries (https://www.smu.edu/Libraries)
 - SMU Libraries has reference librarians happy to help with your research needs. Contact a librarian at <u>http://askalibrarian.smu.edu/ (http://askalibrarian.smu.edu/)</u> or call (214) 768-2326.
- SMU OIT (https://www.smu.edu/OIT)
 - OIT provides computing, information processing, and communications resources to satisfy the needs of faculty, students, and staff, and offers comprehensive support services to help them use technology effectively and creatively.
- SMU Student Affairs (http://www.smu.edu/studentaffairs)
 - SMU Student Affairs is a network of <u>departments, programs and services</u> (<u>https://www.smu.edu/StudentAffairs/VPSA/Departments</u>) focused on supporting students' out-of-classroom experiences and co-curricular learning.

Delicies

ACADEMIC INTEGRITY

According to university policy, **cheating or plagiarism** of any kind is strictly prohibited and subject to disciplinary action. Please take the time to read the <u>SMU Honor Code</u> (<u>http://www.smu.edu/StudentAffairs/StudentLife/StudentHandbook/HonorCode</u>).

POLICY for MISSING TESTS and QUIZZES

Students who miss a test because of illness or other compelling circumstances as determined by the instructor may make arrangements to make up the test. No student has the right to request a make-up test for other reasons, aside for absences for scheduled, officially sanctioned University extracurricular events. Requests for make-up tests will be dealt with on a case-by-case basis. Students who miss a quiz because of illness or other compelling circumstances will have that quiz excused at the discretion of the instructor.

DISABILITY ACCOMMODATIONS

Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit <u>http://www.smu.edu/Provost/SASP/DASS (https://www.smu.edu/Provost/SASP/DASS (DisabilityAccommodations)</u> to begin the process. Once approved and registered, students will submit a DASS Accommodation Letter to faculty through the electronic portal *DASS*

Link and then communicate directly with each instructor to make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

RELIGIOUSLY OBSERVANT STUDENTS

Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (https://www.smu.edu/StudentAffairs/Chaplain/ReligiousHolidays (https://www.smu.edu/StudentAffairs/Chaplain/ReligiousHolidays).).

EXCUSED ABSENCES for UNIVERSITY EXTRACURRICULAR ACTIVITIES

Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (See 2020-2021 SMU Undergraduate Catalog (https://catalog.smu.edu/content.php?catoid=51&navoid=4645&hl=%22excused+absences%22& returnto=search)_ under "Enrollment and Academic Records/Excused Absences.")

PREGNANT AND PARENTING STUDENTS

Under Title IX students who are pregnant or parenting may request academic adjustments by contacting Elsie Johnson (elsiej@smu.edu (mailto:elsiej@smu.edu)) in the Office of the Dean of Students, or by calling 214-768-4564. Students seeking assistance must schedule an appointment with their professors as early as possible, present a letter from the Office of the Dean of Students, and make appropriate arrangements. Please note that academic adjustments are not retroactive and, when feasible, require advance notice to implement.

COVID-19 ATTENDANCE STATEMENT

Students who are experiencing COVID-19 symptoms or who have been notified through contact tracing of potential exposure and need to self-quarantine or isolate must follow the protocols laid out in <u>SMU's Contact Tracing Protocol (https://www.smu.edu/Coronavirus /Contact-Tracing)</u>. To ensure academic continuity, students in these situations will not be penalized and will be provided appropriate modifications to assignments, deadlines, and testing. Please also note that SMUFlex classes might, in rare circumstances, go remote for two-week periods to accommodate COVID-related issues. To ensure these necessary accommodations, affected students must:

- Provide as much advance notification as possible to the instructor about a change in circumstances. Students must notify their instructor about a potential absence as well as plans for a return to class. For cases in which students test positive for COVID-19, they should fill out a <u>CCC form at this link (https://cm.maxient.com</u> /<u>reportingform.php?SouthernMethodistUniv&layout_id=1)</u>.
- Communicate promptly with the instructor to establish, as necessary, alternative assignments and/or changes to deadlines and exams. Students are then responsible for meeting the expectations laid out in these alternative arrangements.
- Continue participation in class via Zoom, as health circumstances permit. Attend class regularly, when not in a situation outlined above, in accordance with safety measures laid out by SMU CAN in the <u>Pledge to Protect (https://smu.az1.qualtrics.com/jfe/form</u>
 <u>/SV_2ib3rgSmWNktGvj)</u> (including wearing masks, maintaining social distancing, and cleaning personal space after class). In-person participation in SMUFlex classes is required on students' assigned red/blue rotation days except in cases when students are experiencing illness, are in self-quarantine or in isolation.
- Students facing multiple or extended COVID-19-related absences or illness can work with the Office of the Dean of Students to consider options such as fully remote learning or medical withdrawal.

This policy, aligned with the <u>SMU Honor Code (https://www.smu.edu/StudentAffairs</u> /<u>OfficeoftheDeanofStudents/StudentConduct/HonorCouncil)</u> and the SMU <u>Pledge to Protect</u> (<u>https://smu.az1.qualtrics.com/jfe/form/SV_2ib3rgSmWNktGvj</u>), relies on mutual trust and respect between students and faculty to ensure safety, academic integrity, and instructional continuity.