

# Course Syllabus



## Course Policies

### Course Objectives

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To provide an overview of the physics of the 20<sup>th</sup> century. Students will familiarize themselves with special relativity and quantum mechanics. They will also study the physics of nuclei, atoms and semiconductors. Modern applications will be discussed. Problem solving skill development will also be an emphasis of the class.

### Method of Instruction

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This course will utilize several different modes of instruction. Lectures, or presentations of the material of the course are now recorded. Class time will deliver some of this material for expansion, questions and discussion. Homework assignments are assigned at the beginning of each unit of material, corresponding roughly to one chapter of the course textbook. Reading will be encouraged thru reading quizzes, given each week that does not include an Exam or Presentations. There is one midterm and one final exam. The Research and Presentation project is a significant portion of the course, and it satisfies the University Oral Communication requirement. Each of these elements are described in more detail under Requirements of Assignment Groups.

### Student Learning Outcomes

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This is a calculus based course which will include some basic integration, differentiation, and discussion of the use of differential equations. Students will learn about the following topics: the concept of relativistic transformation; relativistic momentum and energy; the principles underlying general relativity such as the equivalence principle. Quantum topics include: the

quantum, the concept of wave-particle duality; wave-packets; the probabilistic interpretation of the wave equation; potential wells; the hydrogen atom as a template for all atoms.

## Statement on Communication

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You may contact me via email using "PHY 3305" on the Subject line. I will respond to your question or email within 48 hours. Responses might be delayed on holidays and weekends. Assignments will be graded within 7 days of a quiz, or an assignment due date. My grading timeline might be delayed for exams and the presentation project.

## Statement on COVID-19 and Masks in Class

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Masks are required in this course. This masking requirement is subject to change during the semester, and any changes will be announced in class, posted clearly in Canvas, and updated in the syllabus.



## Netiquette

Netiquette is a set of rules for behaving properly online. Something about cyberspace makes it easy for people to forget that they are interacting with other real people. The following bullet points cover some basics to communicating online:

- Be sensitive to the fact that there will be cultural and linguistic backgrounds, as well as different political and religious beliefs, plus just differences in general.
- Use good taste when composing your responses in Discussion Forums. Swearing and profanity is also part of being sensitive to your classmates and should be avoided. Also consider that slang can be misunderstood or misinterpreted.
- Don't use all capital letters when composing your responses as this is considered "shouting" on the Internet and is regarded as impolite or aggressive. It can also be stressful on the eye when trying to read your message.
- Be respectful of your others' views and opinions. Avoid "flaming" (publicly attacking or insulting) them as this can cause hurt feelings and decrease the chances of getting all different types of points of view.
- Be careful when using acronyms. If you use an acronym it is best to spell out its meaning first, then put the acronym in parentheses afterward, for example: Frequently Asked

Questions (FAQs). After that you can use the acronym freely throughout your message.

- Use good grammar and spelling, and avoid using text messaging shortcuts.
- **Emoticons** (<http://www.merriam-webster.com/dictionary/emoticon>) and **emojis** (<https://en.oxforddictionaries.com/definition/emoji>) can be used to add emotion to your text or convey invisible body language, as long as they are used tastefully.
- For synchronous meetings, make sure you are in a safe and private place (please do not connect while you are driving or when there might be distractions around you). Also, for a better experience, make sure to use headphones and make sure you are not interrupted.



## Institutional Policies & Procedures

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### Disability Accommodations

Students who need academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call [214-768-1470](tel:214-768-1470) (tel:214-768-1470) or visit <http://www.smu.edu/Provost/SASP/DASS> <sup>↗</sup> (<http://www.smu.edu/Provost/SASP/DASS>) to begin the process. Once they are registered and approved, students then submit a DASS Accommodation Letter through the electronic portal, *DASS Link*, and then communicate directly with each of their instructors to make appropriate arrangements. Please note that accommodations are not retroactive, but rather require advance notice in order to implement.

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### Sexual Harassment

All forms of sexual harassment, including sexual assault, dating violence, domestic violence and stalking, are violations of SMU's Title IX Sexual Harassment Policy and may also violate Texas law. Students who wish to file a complaint or to receive more information about the grievance process may contact Samantha Thomas, SMU's Title IX Coordinator, at [accesssequity@smu.edu](mailto:accesssequity@smu.edu) (<mailto:accesssequity@smu.edu>) or [214-768-3601](tel:214-768-3601) (tel:214-768-3601). Please note that faculty and staff are mandatory reporters. If students notify faculty or staff of sexual harassment, they must report it to the Title IX Coordinator. For more information about sexual harassment, including resources available to assist students, please visit [www.smu.edu/sexualmisconduct](http://www.smu.edu/sexualmisconduct) <sup>↗</sup> (<http://www.smu.edu/sexualmisconduct>).

## Pregnant or Parenting Students

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Under Title IX, students who are pregnant or parenting may request academic adjustments by contacting Elsie Johnson (elsiej@smu.edu) in the Office of the Dean of Students, or by calling [214-768-4564 \(tel:214-768-4564\)](tel: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.

## Religious Observance

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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>)).

Affected quizzes or exams will be given prior to the rest of the class. No other make-up quizzes or exams will be granted.

## COVID-19 and Other Medical-Related Absences

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Students who test positive for COVID-19 and need to isolate, or who are notified of potential exposure, must follow [SMU's Contact Tracing Protocol](https://www.smu.edu/Coronavirus/Contact-Tracing) [↗](#) (<https://www.smu.edu/Coronavirus/Contact-Tracing>) [↗](#) (<https://www.smu.edu/Coronavirus/Contact-Tracing>). To ensure academic continuity and avoid any course penalties, students should follow the same procedures described by their instructors as they would for any other medical-related absence in order to be provided with appropriate modifications to assignments, deadlines, and exams.

## Excused Absences for University Extracurricular Activities

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Students participating in an officially sanctioned, scheduled university extracurricular activity should be given the opportunity to make up class assignments or other graded assignments that were missed as a result of their participation. It is the responsibility of the student to make arrangements for make-up work with the instructor prior to any missed scheduled examinations

or other missed assignments. (See [2020-2021 SMU Undergraduate Catalog](https://catalog.smu.edu/content.php?catoid=51&navoid=4645&hl=%22excused+absences%22&returnto=search) [↗](https://catalog.smu.edu/content.php?catoid=51&navoid=4645&hl=%22excused+absences%22&returnto=search) (<https://catalog.smu.edu/content.php?catoid=51&navoid=4645&hl=%22excused+absences%22&returnto=search>) under “Enrollment and Academic Records/Excused Absences.”)

Affected quizzes or tests will be given prior to the rest of the class. No other make-up quizzes or tests will be granted.

## Student Academic Success Programs

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Students needing assistance with writing assignments for SMU courses may schedule an appointment with the Writing Center through Canvas. Students who would like support for subject-specific tutoring or success strategies should contact SASP, Loyd All Sports Center, Suite 202; [214-768-3648 \(tel:214-768-3648\)](tel:214-768-3648); <https://www.smu.edu/sasp> [↗](https://www.smu.edu/sasp) (<https://www.smu.edu/sasp>).

## Academic Dishonesty

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Students are expected to embrace and uphold the [SMU Honor Code](https://www.smu.edu/StudentAffairs/StudentLife/StudentHandbook/HonorCode) (<https://www.smu.edu/StudentAffairs/StudentLife/StudentHandbook/HonorCode>). Violations of the Honor Code will be acted upon in accordance with the policies and procedures outlined in the [Mustang Student Handbook](https://www.smu.edu/StudentAffairs/StudentLife/StudentHandbook/) (<https://www.smu.edu/StudentAffairs/StudentLife/StudentHandbook/>).



## Grading

In all cases, it is **crucial** to show your work to get credit for solutions to physics problems. Regrading requests must be well-justified in writing. The lowest homework and the lowest quiz grades will be omitted from the semester average grade.

**Grades** will be available through Canvas and students may access them to determine where they stand in this course at any time. Your grade will be calculated according to the *"Assignments are weighted by group:"* table displayed in this syllabus page. Please make sure to check your grade book to see your instructors feedback on your projects and activities. To see in-line feedback, go to the assignment, then click on View Feedback if applicable. It is your

see in-line feedback, go to the assignment, then click on view feedback if applicable. It is your responsibility to check for your instructor's feedback and make appropriate improvements to assignments if necessary.

## **Grading Scale:**

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A: > 90%

B: 80 - 89%

C: 70 - 79%

D: 60 - 69%

F: < 60%



## **Requirement/Description of Assignment Groups**

### **Homework [20% of Grade]**

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Homework is the foundation of your effort to master the subject material of this course and acquire problem-solving skill in its utilization. Students will make use of calculus and results of differential equations. You will learn about different quantities and phenomena thru solving problems in each area of the course leading up to many electron atoms and an application of condensed matter physics, working toward Learning Objectives 1 to 3. Remember to show your work. Homework will be due the class day after the completion of the material on the syllabus schedule. No late homework is accepted. The lowest homework grade will be dropped in the final course grade.

### **Quizzes [15% of Grade]**

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There will be weekly 10 minute quizzes during the semester, scheduled on Tuesdays of each week. Each quiz includes a conceptual question or problem concerning the material in the current week's reading assignment, as well as a problem covering material since the last test or quiz. These quizzes are meant to encourage you to keep up with the reading of the textbook

and the lecture notes provided so that you are prepared to engage with questions and examples in class. They also reinforce the learning of the homework. As such, they contribute to overall learning objectives 1 thru 3. Quizzes are closed book, and you may bring a single 8.5"x11" sheet with important equations and physical constants relevant for the material. The lowest quiz grade will be dropped in the final course grade.

[Note on COVID/remote learning: During any time when the course is taught remotely, all quizzes and exams will be proctored thru Zoom with Video ON for all students during the exam period.] When any quiz or exam is completed, the student will upload a multi-page PDF file of their work to the quiz or exam assignment in Canvas before the due time indicated.

## **Midterm Exam [20% of Grade]**

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The midterm exam provides a milestone for you to test your knowledge of the course material to that point, and your facility with that knowledge. This supports Learning Objectives 1 thru 3.

Exams are closed book, and you may bring a single 8.5"x11" sheet with important equations and physical constants relevant for the material.

## **Technical Presentation [25% of Grade]**

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The ability to communicate in scientific and dependent fields is a critical skill set. Additionally, Modern Physics is a springboard to an enormous range of science and engineering areas. We will build on the material of the course by developing an individual research topic on a subject in modern physics that goes beyond the material covered in class-time. These topics will support learning objectives 4-5. The first half of the course will consist of a research project in which students develop a more advanced knowledge of their topic. The second half of the semester is aimed at developing their topic into coherent technical presentations such as might be given in a professional setting. Two distinct presentations will be included that satisfy the requirements of the university Oral Communication requirement. The first is a brief unscripted, recorded presentation before midterm. The second is a 20 minute scripted oral presentation to the class at the end of the semester. These presentations will be organized into overarching 'topical groups' of 3-4 students each. Over the course of the semester, students will receive instruction in best practices for good public speaking and guidance on a methodical development of the oral presentation. Online resources will be provided that enhance this instruction and give examples. These presentations will be grouped such that each topical group presents to the class on that topic. Discernment and critique are important elements of the project and each student will assess their peers' performance, and these assessments will be included in their

own grades. Presentation work will be graded at discrete points thru the semester and total 25% of the course grade.

## Final Exam [20% of Grade]

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The final exam allows a final assessment of your ability to satisfy learning objectives 1-3 of this course. Preparation for the final is intended to further learning. This exam is cumulative over the whole course. Exams are closed book, and you may bring a two sides of a 8.5"x11" sheet with important equations and physical constants relevant for the material.



## Course Outline/Calendar

► Syllabus Navigation

For the full course Outline/Calendar, please visit the [Modules](#) section of the course.

*Disclaimer: The instructor reserves the right to make changes to the schedule of the class. Any alterations will be announced in class, in Canvas or via email by the instructor. Students who do not check Canvas or their email assume full responsibility for missing alterations to the course.*



## Tech Requirements & Help

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

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 [canvas.smu.edu \(https://canvas.smu.edu/\)](https://canvas.smu.edu/) [Zoom \(https://www.smu.edu/OIT/services/zoom\)](https://www.smu.edu/OIT/services/zoom)



via [Canvas.Smu.edu \(https://canvas.smu.edu/\)](https://canvas.smu.edu/). [Zoom \(https://www.smu.edu/OIT/Services/Zoom/\)](https://www.smu.edu/OIT/Services/Zoom/) Web Conferencing is used in this course as well for virtual (i.e., real-time, synchronous) meetings, and [Panopto \(https://howtovideos.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=816a7666-1ae3-49b0-957c-6455edee8554\)](https://howtovideos.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=816a7666-1ae3-49b0-957c-6455edee8554) is used for recording audio/video assignments. This course also uses the [Respondus LockDown Browser and Monitor \(https://www.smu.edu/OIT/Services/LockDownBrowser\)](https://www.smu.edu/OIT/Services/LockDownBrowser) for online exams.

## IMPORTANT

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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 [Amazon \(https://www.amazon.com/s/ref=nb\\_sb\\_noss\\_1?url=search-alias%3Daps&field-keywords=webcam\)](https://www.amazon.com/s/ref=nb_sb_noss_1?url=search-alias%3Daps&field-keywords=webcam).

## TECHNICAL SUPPORT

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If you run into any technical problems, there are a number of resources available to you. You can contact the [SMU IT Help Desk \(http://www.smu.edu/OIT/Help\)](http://www.smu.edu/OIT/Help) for assistance with Canvas and Zoom. Otherwise, here are additional useful resources:

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

## PANOPTO VIDEO APP for CANVAS

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If requested, you will use the [Panopto](#)

(<https://support.panopto.com/s/topic/0TO390000003VN8GAM/getting-started>) to submit video assignments. Be sure your device or devices meet the Panopto's [technical requirements](https://support.panopto.com/s/article/System-Requirements) (<https://support.panopto.com/s/article/System-Requirements>), and if you need Panopto support contact the SMU [IT Help Desk](https://www.smu.edu/OIT/Help) (<https://www.smu.edu/OIT/Help>).

## RESPONDUS LOCKDOWN BROWSER and MONITOR

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This course might require the use of LockDown Browser and a webcam for online exams. The webcam can be built into your computer or can be the type that plugs in with a USB cable. Watch this [short video](http://www.respondus.com/products/lockdown-browser/student-movie.shtml) (<http://www.respondus.com/products/lockdown-browser/student-movie.shtml>) to get a basic understanding of LockDown Browser and the webcam feature. A student [Quick Start Guide \(PDF\)](http://www.respondus.com/products/monitor/guides.shtml) (<http://www.respondus.com/products/monitor/guides.shtml>) is also available.

Then download and install LockDown Browser from this link:

<http://www.respondus.com/lockdown/download.php?id=951749825>  
(<http://www.respondus.com/lockdown/download.php?id=951749825>)

To ensure LockDown Browser and the webcam are set up properly, do the following:

- Start LockDown Browser, log in to <http://canvas.smu.edu> (<http://canvas.smu.edu>), and select this course.
- Locate and select the **Help Center** button on the LockDown Browser toolbar.
- Run the **Webcam Check** and, if necessary, resolve any issues.
- Run the **System & Network Check**. If a problem is indicated, see if a solution is provided in the Knowledge Base. Troubleshooting information can also be emailed to our institution's help desk.

When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all other devices (e.g. tablets, phones, second computers)
- Clear your desk of all external materials not permitted — books, papers, other devices
- Remain at your computer for the duration of the test
- If the computer or networking environment is different than what was tested above, repeat the Webcam and System checks prior to starting the test
- To produce a good webcam video, do the following:
  - Avoid wearing baseball caps or hats with brims
  - Ensure your computer or tablet is on a firm surface (a desk or table) — not on your lap, a

bed, or other surfaces that might move

- If using a built-in webcam, avoid tilting the screen after the webcam setup is complete
- Take the exam in a well-lit room and avoid backlighting, such as sitting with your back to a window
- Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted.

Additional resources related to Respondus LockDown Browser and Monitor, including a link to download the LockDown Browser iPad app, are located at <https://www.smu.edu/OIT/Services/LockDownBrowser> (<https://www.smu.edu/OIT/Services/LockDownBrowser>). Respondus technical support is available either through the SMU [IT Help Desk \(https://www.smu.edu/OIT/Help\)](https://www.smu.edu/OIT/Help) or [Respondus \(https://support.respondus.com/support/index.php?/Default/Tickets/Submit/RenderForm/2\)](https://support.respondus.com/support/index.php?/Default/Tickets/Submit/RenderForm/2).

## ZOOM

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

## PRIVACY POLICIES

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- [Canvas by Instructure \(https://www.canvaslms.com/policies/privacy\)](https://www.canvaslms.com/policies/privacy)
- [Panopto Privacy \(https://www.panopto.com/privacy/\)](https://www.panopto.com/privacy/)
- [Respondus LockDown Browser \(https://www.respondus.com/about/privacy.shtml\)](https://www.respondus.com/about/privacy.shtml)
- [SMU OIT Policies and Legislation \(https://www.smu.edu/OIT/Infosec/Policy\)](https://www.smu.edu/OIT/Infosec/Policy)
- [Zoom \(https://zoom.us/privacy\)](https://zoom.us/privacy)

## ACCESSIBILITY

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- Canvas
  - [Accessibility within Canvas \(https://community.canvaslms.com/docs/DOC-2061\)](https://community.canvaslms.com/docs/DOC-2061)
  - [Voluntary Product Accessibility Template \(https://www.canvaslms.com/accessibility\)](https://www.canvaslms.com/accessibility)
- [Panopto \(https://support.panopto.com/s/article/Learn-About-Accessibility-Features\)](https://support.panopto.com/s/article/Learn-About-Accessibility-Features)
- [Respondus LockDown Browser \(https://www.respondus.com/products/accessibility\)](https://www.respondus.com/products/accessibility)

- [Respondus LOCKDOWN Browser \(http://www.respondus.com/products/accessibility-lockdown.shtml\)](http://www.respondus.com/products/accessibility-lockdown.shtml)
- [Zoom \(https://zoom.us/accessibility\)](https://zoom.us/accessibility)







## Student Services

The following services and resources are available to SMU students:

- [Altshuler Learning Enhancement Center \(http://www.smu.edu/Provost/ALEC?utm\\_medium=alias%20redirect&utm\\_source=smu&utm\\_campaign=%2Falec\)](http://www.smu.edu/Provost/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 \(tel:\(214\) 768-3648\)](tel:(214)768-3648).
- [Altshuler Writing Center \(http://www.smu.edu/Provost/ALEC/WritingCenter\)](http://www.smu.edu/Provost/ALEC/WritingCenter)
  - 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 \(tel:\(214\) 768-3648\)](tel:(214)768-3648).
- [DASS \(https://www.smu.edu/Provost/ALEC/DASS\)](https://www.smu.edu/Provost/ALEC/DASS)
  - Students needing academic accommodations for a disability must first contact [Disability Accommodations & Success Strategies \(http://www.smu.edu/Provost/ALEC/DASS\)](http://www.smu.edu/Provost/ALEC/DASS) (DASS) at [\(214\) 768-1470 \(tel:\(214\) 768-1470\)](tel:(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 procedures \(https://www.smu.edu/Provost/SASP/DASS/DisabilityAccommodations/PoliciesandProcedures\)](https://www.smu.edu/Provost/SASP/DASS/DisabilityAccommodations/PoliciesandProcedures) 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 \(https://my.smu.edu/\)](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.
- [SMU Bookstore \(http://smu.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=17551&catalogId=10001&langId=-1\)](http://smu.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=17551&catalogId=10001&langId=-1)
  - Information on textbooks, events, buyback, promotions and more.
- [SMU Bursar \(http://www.smu.edu/EnrollmentServices/Bursar\)](http://www.smu.edu/EnrollmentServices/Bursar)

- Information on student finances, bill pay and more.
- [SMU Counseling Services \(http://www.smu.edu/StudentAffairs/HealthCenter/Counseling\)](http://www.smu.edu/StudentAffairs/HealthCenter/Counseling)
  - 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 \(tel:\(214\) 768-2211\)](tel:(214)768-2211). For 24 hour help contact [\(214\) 768-2860 \(tel:\(214\) 768-2860\)](tel:(214)768-2860).
- [SMU Dedman Recreation Center \(http://www.smu.edu/StudentAffairs/RecSports\)](http://www.smu.edu/StudentAffairs/RecSports)
  - Regular exercise is one of the best things you can do for your mental and physical well-being.
- [SMU Libraries \(https://www.smu.edu/Libraries\)](https://www.smu.edu/Libraries)
  - SMU Libraries has reference librarians happy to help with your research needs. Contact a librarian at [http://askalibrarian.smu.edu/ \(http://askalibrarian.smu.edu/\)](http://askalibrarian.smu.edu/) or call [\(214\) 768-2326 \(tel:\(214\) 768-2326\)](tel:(214)768-2326).
- [SMU OIT \(https://www.smu.edu/OIT\)](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 \(http://www.smu.edu/studentaffairs\)](http://www.smu.edu/studentaffairs)
  - SMU Student Affairs is a network of [departments, programs and services \(https://www.smu.edu/StudentAffairs/VP/SA/Departments\)](https://www.smu.edu/StudentAffairs/VP/SA/Departments) focused on supporting students' out-of-classroom experiences and co-curricular learning.

## Course Summary:

Date	Details	Due
	 <a href="#">Reading: Harris Ch 1 &amp; Lecture Notes</a>	to do: 11:59am
Tue Aug 24, 2021	 <a href="https://smu.instructure.com/courses/91610/assignments/576919">Lecture: Wk1 L1 Precursors (https://smu.instructure.com/courses/91610/assignments/576919)</a>	due by 12:30pm
	 <a href="https://smu.instructure.com/courses/91610/assignments/576937">Overview and Reading (https://smu.instructure.com/courses/91610/assignments/576937)</a>	due by 12:30pm
	 <a href="https://smu.instructure.com/courses/91610/assignments/576949">Project: Overview and Group Topics (https://smu.instructure.com/courses/91610/assignments/576949)</a>	due by 12pm

Thu Aug 26, 2021

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 [Lecture: Wk1 L2 Special Relativity - Space and Time](#) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576920>)

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 [Overview and Reading Week 2](#) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576938>)

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Tue Aug 31, 2021

 [Lecture: Wk2 L3 Special Relativity](#) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576921>)

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 [Quiz 1](#) due by 12:45pm  
(<https://smu.instructure.com/courses/91610/assignments/576894>)

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Thu Sep 2, 2021

 [Lecture: Wk2 L4 Special Relativity](#) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576922>)

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 [Project: Topical Literature Research](#) due by 4pm  
(<https://smu.instructure.com/courses/91610/assignments/576951>)

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Tue Sep 7, 2021

 [Overview and Reading Week 3](#) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576939>)

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 [Lecture: Wk3 L5 Special Relativity](#) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576924>)

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 [Quiz 2](#) due by 12:45pm  
(<https://smu.instructure.com/courses/91610/assignments/576903>)

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Thu Sep 9, 2021

 [Lecture: Wk3 L2 General Relativity](#) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576923>)

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 [Lecture: Relativity](#) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/578531>)

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Tue Sep 14, 2021

 [Quiz 3](#)

<https://smu.instructure.com/courses/91610/assignments/579894>

due by 12:45pm

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Thu Sep 16, 2021

 [Lecture: General Relativity](#)

<https://smu.instructure.com/courses/91610/assignments/578532>

due by 12:30pm

 [Project: Main Project](#)

[Highlights](#)

<https://smu.instructure.com/courses/91610/assignments/576948>

due by 6pm

 [Overview and Reading Week](#)

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<https://smu.instructure.com/courses/91610/assignments/576940>

due by 11:59am

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Tue Sep 21, 2021

 [Lecture: Wk4 L1 EM Waves](#)

[as Particles](#)

<https://smu.instructure.com/courses/91610/assignments/576925>

due by 12:30pm

 [Quiz 4](#)

<https://smu.instructure.com/courses/91610/assignments/576896>

due by 12:45pm

 [Chapter 2 Homework](#)

<https://smu.instructure.com/courses/91610/assignments/576912>

due by 2pm

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Thu Sep 23, 2021

 [Lecture: Wk4 L8 EM Waves](#)

[as Particles](#)

<https://smu.instructure.com/courses/91610/assignments/576926>

due by 12:30pm

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Fri Sep 24, 2021

 [Project: Full Outline: Sub-](#)

[points and Details](#)

<https://smu.instructure.com/courses/91610/assignments/576946>

due by 6pm

 [Reading: Harris Ch. 4.1-3](#)

<https://smu.instructure.com/courses/91610/assignments/576952>

due by 11:59am

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Tue Sep 28, 2021

 [Lecture: Wk5 L9 Matter](#)

[Particles as Waves](#)

<https://smu.instructure.com/courses/91610/assignments/576928>

due by 12:30pm

 [Quiz 5](#)


<https://smu.instructure.com/courses/91610/assignments/576899>

due by 12:45pm

 [Ch 3 Homework](https://smu.instructure.com/courses/91610/assignments/576906) due by 2pm  
(<https://smu.instructure.com/courses/91610/assignments/576906>)


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Thu Sep 30, 2021

 [Lecture: Wk5 L10 Matter Particles as Waves](https://smu.instructure.com/courses/91610/assignments/576927) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576927>)

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Fri Oct 1, 2021

 [Project: Extemporaneous Communication](https://smu.instructure.com/courses/91610/assignments/576942) due by 6pm  
(<https://smu.instructure.com/courses/91610/assignments/576942>)

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Tue Oct 5, 2021


 [Reading: Harris Ch. 4.4-6](https://smu.instructure.com/courses/91610/assignments/576953) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576953>)

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 [Lecture: Wk6 L11 Matter Particles as Waves](https://smu.instructure.com/courses/91610/assignments/576929) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576929>)

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Thu Oct 7, 2021

 [Midterm Exam - Spring 2021 PHY 3305](https://smu.instructure.com/courses/91610/assignments/576900) due by 1:50pm  
(<https://smu.instructure.com/courses/91610/assignments/576900>)

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 [Ch 4 Homework](https://smu.instructure.com/courses/91610/assignments/576907) due by 2pm  
(<https://smu.instructure.com/courses/91610/assignments/576907>)

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Thu Oct 14, 2021

 [Reading: Harris Ch. 5.1-4](https://smu.instructure.com/courses/91610/assignments/576955) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576955>)

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 [Lecture: Wk7 L12 Schrodinger's Equation](https://smu.instructure.com/courses/91610/assignments/576930) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576930>)

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 [Quiz 6](https://smu.instructure.com/courses/91610/assignments/576892) due by 12:45pm  
(<https://smu.instructure.com/courses/91610/assignments/576892>)

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Fri Oct 15, 2021

 [Project: Technical Presentation Fundamentals](https://smu.instructure.com/courses/91610/assignments/576950) due by 6pm  
(<https://smu.instructure.com/courses/91610/assignments/576950>)

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 [Lecture: Wk7 L13 Bound Systems](https://smu.instructure.com/courses/91610/assignments/576931) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576931>)



Tue Oct 19, 2021

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 [Quiz 7](https://smu.instructure.com/courses/91610/assignments/576901) due by 12:45pm  
(<https://smu.instructure.com/courses/91610/assignments/576901>)

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Thu Oct 21, 2021

 [Reading: Harris Ch. 5.5-8](https://smu.instructure.com/courses/91610/assignments/576956) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576956>)

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Tue Oct 26, 2021

 [Lecture: Wk8 L14 Bound Systems](https://smu.instructure.com/courses/91610/assignments/576932) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576932>)

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 [Lecture: Wk8 L15 Bound Systems](https://smu.instructure.com/courses/91610/assignments/576933) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576933>)

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 [Quiz 8](https://smu.instructure.com/courses/91610/assignments/576895) due by 12:45pm  
(<https://smu.instructure.com/courses/91610/assignments/576895>)

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Thu Oct 28, 2021

 [Reading: Harris Ch. 6.1-4](https://smu.instructure.com/courses/91610/assignments/576957) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576957>)

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 [Lecture: Wk9 L17 Unbound States](https://smu.instructure.com/courses/91610/assignments/576934) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576934>)

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 [Ch. 5 Homework](https://smu.instructure.com/courses/91610/assignments/576908) due by 2pm  
(<https://smu.instructure.com/courses/91610/assignments/576908>)

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Tue Nov 2, 2021

 [Lecture: Wk9 L18 Unbound States](https://smu.instructure.com/courses/91610/assignments/576935) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576935>)

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 [Quiz 9](https://smu.instructure.com/courses/91610/assignments/576898) due by 12:45pm  
(<https://smu.instructure.com/courses/91610/assignments/576898>)

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Thu Nov 4, 2021

 [Reading: Harris Ch. 7.1-5](https://smu.instructure.com/courses/91610/assignments/576958) due by 11:59am  
(<https://smu.instructure.com/courses/91610/assignments/576958>)

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 [Lecture: Wk10 L19 Hydrogen Atom](https://smu.instructure.com/courses/91610/assignments/576913) due by 12:30pm  
(<https://smu.instructure.com/courses/91610/assignments/576913>)

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 [Ch. 6 Homework](https://smu.instructure.com/courses/91610/assignments/576909)  [\(https://smu.instructure.com/courses/91610/assignments/576909\)](https://smu.instructure.com/courses/91610/assignments/576909) due by 2pm

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Fri Nov 5, 2021

 [Project: 4 slide Practice](https://smu.instructure.com/courses/91610/assignments/576941)  [\(https://smu.instructure.com/courses/91610/assignments/576941\)](https://smu.instructure.com/courses/91610/assignments/576941) due by 6pm

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Tue Nov 9, 2021

 [Lecture: Wk10 L20 Hydrogen Atom](https://smu.instructure.com/courses/91610/assignments/576914)  [\(https://smu.instructure.com/courses/91610/assignments/576914\)](https://smu.instructure.com/courses/91610/assignments/576914) due by 12:30pm

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 [Quiz 10](https://smu.instructure.com/courses/91610/assignments/576891)  [\(https://smu.instructure.com/courses/91610/assignments/576891\)](https://smu.instructure.com/courses/91610/assignments/576891) due by 12:45pm

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Thu Nov 11, 2021

 [Reading: Harris Ch. 7.6-8, 8.1-3](https://smu.instructure.com/courses/91610/assignments/576959)  [\(https://smu.instructure.com/courses/91610/assignments/576959\)](https://smu.instructure.com/courses/91610/assignments/576959) due by 11:59am

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 [Lecture: Wk11 L21 Hydrogen Atom](https://smu.instructure.com/courses/91610/assignments/576915)  [\(https://smu.instructure.com/courses/91610/assignments/576915\)](https://smu.instructure.com/courses/91610/assignments/576915) due by 12:39pm

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Fri Nov 12, 2021

 [Project: Initial Presentation Draft](https://smu.instructure.com/courses/91610/assignments/576947)  [\(https://smu.instructure.com/courses/91610/assignments/576947\)](https://smu.instructure.com/courses/91610/assignments/576947) due by 6pm

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Tue Nov 16, 2021

 [Lecture: Wk11 L22 Spin](https://smu.instructure.com/courses/91610/assignments/576916)  [\(https://smu.instructure.com/courses/91610/assignments/576916\)](https://smu.instructure.com/courses/91610/assignments/576916) due by 12:30pm

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 [Quiz 11](https://smu.instructure.com/courses/91610/assignments/576897)  [\(https://smu.instructure.com/courses/91610/assignments/576897\)](https://smu.instructure.com/courses/91610/assignments/576897) due by 12:45pm

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 [Ch. 7 Homework](https://smu.instructure.com/courses/91610/assignments/576910)  [\(https://smu.instructure.com/courses/91610/assignments/576910\)](https://smu.instructure.com/courses/91610/assignments/576910) due by 2pm

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Thu Nov 18, 2021

 [Reading: Harris Ch. 8.4-7, 10.5-8](https://smu.instructure.com/courses/91610/assignments/576960)  [\(https://smu.instructure.com/courses/91610/assignments/576960\)](https://smu.instructure.com/courses/91610/assignments/576960) due by 11:59am

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 [Lecture: Wk12 L23 Many Electron Atoms](https://smu.instructure.com/courses/91610/assignments/576917)  [\(https://smu.instructure.com/courses/91610/assignments/576917\)](https://smu.instructure.com/courses/91610/assignments/576917) due by 12:30pm

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 [Lecture: Wk12 L24](#)

[Semiconductors](#)

due by 12:30pm

<https://smu.instructure.com/courses/91610/assignments/576918>

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Tue Nov 23, 2021

 [Quiz 12](#)

due by 12:45pm

<https://smu.instructure.com/courses/91610/assignments/579925>

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 [Ch. 8 Homework](#)

due by 2pm

<https://smu.instructure.com/courses/91610/assignments/576911>

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Tue Nov 30, 2021

 [Project: Final Presentations -](#)

due by 2pm

<https://smu.instructure.com/courses/91610/assignments/576944>

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 [Ch. 10 Homework](#)

due by 2pm

<https://smu.instructure.com/courses/91610/assignments/576905>

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Thu Dec 2, 2021

 [Project: Final Presentations -](#)

due by 2pm

<https://smu.instructure.com/courses/91610/assignments/576943>

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Mon Dec 13, 2021

 [PHYS 3305 Final Exam](#)

due by 2:30pm

<https://smu.instructure.com/courses/91610/assignments/576893>

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