Bachelor of Science in Physics
with Engineering Concentration (BS PHYS ENG)
2024 - 2025 Advising Handout

Important Information About Your Degree

- **College of Science Admission Requirement:** Students must demonstrate proficiency in College Algebra by placing into Math Level 2 or higher through the UNT Math Placement Exam (Not the same as TSI) OR completing College Algebra or higher with a grade of C or higher.
- **UNT Double-Dip Course Policy (Best Selection):** Courses shown in *italics* satisfy multiple degree program requirements. Students who do not take the Best Selection courses, will have to take additional courses to meet program requirements. Whether or not the course is taken to fulfill a specific university core category, all courses are required by the program to complete the degree. Electives may be required due to double-dipping.
- Hour and GPA Requirements for graduation/degree completion:
  - BS in Physics with Engineering requires at least 120 hours, 42 advanced, 2.00 UNT GPA, 2.00 overall GPA, a minimum 2.50 GPA in all advanced science and mathematics courses
- Courses marked with an asterisk (*) require are grade of **C or Higher**.
- Courses in **bold** require prerequisites. **Prerequisites** are listed in the university catalog with the course description.
- An official degree audit is required for graduation; Students **must** meet with an academic advisor to request that their audit be made official. Students can review degree requirements by running their audit at http://degreeaudit.unt.edu/
- For major-specific career information, contact the Department of Department in the Physics Building 110 or at physics@unt.edu.
- For teaching certification courses and requirements, contact tnt@unt.edu.
- For assistance with TSI status or mandatory courses, contact TSI@unt.edu.
- For additional program information visit https://cos.unt.edu/advising or contact the COS Advising Center at cosadvising@unt.edu.

Advising Notation Key

X = Requirement Completed Credit is posted within the degree audit.	**IP =** In Progress/Pending Credit Advisor has seen proof from an unofficial transcript or an official score	**? =** Needs further evaluation Student may need to provide additional information. (ex. a course syllabus)

Major Requirements

Complete one of the following:		
Option 1:		
PHYS 1510 & 1530* – General Physics I with Calculus & Lab*		4
PHYS 1520 & 1540 – General Physics II with Calculus & Lab		4
Option 2:		
PHYS 1710* & 1730* – Mechanics & Lab		4
PHYS 2220 & 2240 – Electricity & Magnetism & Lab		4
Option 3:		
PHYS 1410 & 1430 – General Physics I & Lab		4
PHYS 1420* & 1440* – General Physics I & Lab		4
PHYS 2220 & 2240 – Electricity & Magnetism & Lab		4
All courses listed below are required for the degree		
PHYS 3010* & 3030* – Modern Physics & Lab		4
PHYS 3210* – Mechanics		3
PHYS 3310* – Mathematical Methods in Phys. Sciences		3
PHYS 3420* - Electronics		3
PHYS 3510* – Physics, Computation & Software Applications		3
PHYS 4110* – Statistical and Thermal Physics		3
PHYS 4210* – Electricity and Magnetism		3
PHYS 4310* – Quantum Mechanics		3
PHYS 4950* – Physics Senior Thesis		3
PHYS 4955* – Senior Thesis Capstone		3

Concentration in Engineering		
Complete 9 hours from the following with a C or higher		
EENG 2620* & 2621* – Signals and Systems & Lab		4
EENG 2710* & 2711* – Digital Logic Design & Lab		4
EENG 3710* – Computer Organization		3
PHYS 4150* – Experimental Physics 1		3
PHYS 4220* – Electromagnetic Waves		3
PHYS 4250* – Advanced Photonics		3
PHYS 4420* – Physical Optics		3
PHYS 4500* – Intro. to Solid State Physics		3
PHYS 4520* – Physics of Nanoscale Materials		3
PHYS 4600* – Computer Based Physics		3

Other Required Courses for Degree		
MATH 1710* – Calculus I		4
MATH 1720* – Calculus II		3
MATH 2700* – Linear Algebra and Vector Geometry		3
MATH 2730* – Multivariable Calculus		3
MATH 3410* – Differential Equations		3
CHEM 1410 & 1430* – General Chemistry 1 & Lab*		4
CHEM 1420 & 1440 – General Chemistry 2 & Lab		4

University Core Requirements

42 hours – Students may elect to take any course approved for the University Core Curriculum to fulfill these requirements; however, there are courses recommended in the core categories for students pursuing a Physics major

Composition I*:		3
Composition II*:		3
Math:		3
Life & Physical Science:		3
Life & Physical Science:		3
Creative Arts:		3
Language, Philosophy & Culture:		3
US History to 1865:		3
US History from 1865:		3
Federal Government:		3
Texas Government:		3
Social & Behavioral Sciences:		3
Component Area Option I:		3
Component Area Option II:		3

Additional University Requirements

A minimum of 17 hours of advanced electives are needed to meet university requirement of 36 advanced hours.