

PHYSICS, BACHELOR OF SCIENCE

2018-2019 Degree Plans

| University Core Requirements (43* Hours) | UHCL Course Title | TCCNS | CODE |
|---|---|----------------|---------|
| Communications (6 hours): | WRIT 1301—Composition I (<i>Grade must be "C-" or better</i>) | ENGL 1301 | 010 |
| | WRIT 1302—Composition II (<i>Grade must be "C-" or better</i>) | ENGL 1302 | 010 |
| Mathematics (4* hours): | MATH 2413—Calculus I (<i>Grade must be "C-" or better</i>) | MATH 2413 | 020 |
| *Three (3) hours of Calculus will count toward the University Core and one (1) hour will count toward the Major | | | |
| Life and Physical Sciences (6 hours): | CHEM 1311—General Chemistry I (<i>lecture, Grade must be "C-" or better</i>) | CHEM 1311 | 030 |
| | CHEM 1312—General Chemistry II (<i>lecture, Grade must be "C-" or better</i>) | CHEM 1312 | 030 |
| Language, Philosophy, and Culture (3 hours): | Choose ONE course from the core approved list | | 040 |
| Creative Arts (3 hours): | Choose ONE course from the core approved list | | 050 |
| U.S. History (6 hours): | HIST 1301—U.S. History I | HIST 1301 | 060 |
| | HIST 1302—U.S. History II | HIST 1302 | 060 |
| Government/Political Science (6 hours): | POLS 2305—Federal Government | GOVT 2305 | 070 |
| | POLS 2306—Texas Government | GOVT 2306 | 070 |
| Social/Behavioral Science (3 hours): | Choose ONE course from the core approved list | | 080 |
| Component Area Option (6 hours): | COMM 1315—Public Speaking | SPCH 1315 | 090 |
| | PSYC 1100—Learning Frameworks | PSYC 1100 | 090 |
| | CHEM 1111—Lab General Chemistry I (<i>Grade must be "C-" or better</i>) | CHEM 1111 | 090 |
| | CHEM 1112—Lab for General Chemistry II (<i>Grade must be "C-" or better</i>) | CHEM 1112 | 090 |
| Major Requirements (52 hours) | UHCL Course Title | | |
| Required minimum grade is "C-" in the following classes: | | | |
| | WRIT 3315—Technical Writing | | |
| | MATH 2414—Calculus II | MATH 2414 | |
| | MATH 2315—Calculus III | MATH 2315 | |
| | CSCI 1320 or 1370 or 1470 or 1471 or 3321 or 3323 Computer Programming: C or Software Development with Java or Computer Science I or Computer Science II or Numerical Methods or Object-Oriented Design and Programming (or demonstrated knowledge of a Programming Language) | | |
| | PHYS 2325/2125—University Physics I & Lab | PHYS 2325/2125 | 030/090 |
| | PHYS 2326/2126—University Physics II & Lab | PHYS 2326/2126 | 030/090 |
| | PHYS 3303/3103—Modern Physics & Lab | | |
| | PHYS 3311—Mathematical Methods for Physics and Engineering I | | |
| | PHYS 3312—Mathematical Methods for Physics and Engineering II | | |
| | PHYS 3321—Intermediate Mechanics | | |
| | PHYS 3331—Intermediate Electromagnetism | | |
| | PHYS 3342—Quantum Theory I | | |
| | PHYS 3351—Thermodynamics & Statistical Mechanics | | |
| | PHYS 4371—Undergraduate Physics Research | | |
| | PHYS 4372—Modern Physics Seminar | | |
| | PHYS 3343—Quantum Theory II | | |

| Major Electives (25 hours) | UHCL Course Title |
|----------------------------|--|
| | Choose either Option 1 or Option 2 |
| | <i>(Required minimum grade for all Major Electives is "C-")</i> |
| Option 1: | Physics /without specialization (25 hours) |
| | 6 hours upper level PHYS/ASTR courses (3000-4000) |
| | 19 hours of electives; 11 of the 19 hours must be upper level (3000-4000) |
| Option 2: | Engineering Physics Specialization (25 hours) |
| | CENG 3264—Engineering Design and Project Management |
| | CENG 3312—Digital Circuits |
| | CENG 3112—Lab for Digital Circuits |
| | CENG 3313—Linear Circuits |
| | CENG 3113—Lab for Linear Circuits |
| | PHYS 4322—Mechanics of Materials |
| | PHYS 4352—Fluids and Heat Transfer |
| | SENG 4310—Introduction to Systems Engineering |
| | ELEC 33xx or 43xx—General junior or senior level |
| | ELEC 33xx or 43xx—General junior or senior level |
| Option 3: | Computational Physics Specialization (25 hours) |
| | CSCI 1470—Computer Science I |
| | CSCI 1471—Computer Science II |
| | CSCI 2315—Data Structures |
| | CSCI 3321—Numerical Methods |
| | CSCI 3352—Advanced Data Structures and Algorithms |
| | MATH 2305—Discrete Mathematics |
| | SWEN 4342—Software Engineering |
| | PHYS 4202—Computational Physics |

General Degree Requirements

- Students must complete at least 120 semester credit hours. A minimum of 45 hours of the 120 semester hours must be advanced (3000-4000 level) course work according to the requirements of the respective major.
- Students must complete the University Core Curriculum requirements (refer to Core Curriculum Requirements section of this catalog).
- Students must fulfill the statutory requirements of the Texas State Education Code, including the following:
 - Six hours of U.S. History (three hours may be Texas History).
 - Six hours of Constitutions of the United States and Texas.
- Students must demonstrate writing proficiency by completing nine hours of lower-level (1000-2000 level) and upper-level (3000-4000 level) English composition course credit with a minimum grade of "C-" or better. Some majors may require higher grades in English composition.
- Students must complete at least 25% of the credit hours required for the degree (i.e., 30 semester credit hours for a 120 credit hour program) through instruction offered by UHCL to fulfill the Southern Association of Colleges and Schools (SACS) residency requirements.
- Students must complete the final 30 semester hours of 3000 and 4000 level course work in residence at UHCL.
- Students must complete a minimum of 12 semester credit hours of upper-level (3000-4000 level) coursework in the major in residence at UHCL.
- Students must have a cumulative GPA of 2.000 on course work completed at UHCL with grades of "C" or better on at least 30 hours of resident upper-level work. Grades of "C-" or below cannot be applied toward the 30 hours of resident upper-level work.