UNIVERSITY OF TEXAS ARLINGTON

Bachelor of Science in Physics
Department of Physics
2022-2023 Catalog

Advisor's Signature: **UTA ID:**

Date: 10/5/2022

CORE CURRICULUM & ELECTIVES

	Earned	Need
University Required course		
UNIV-SC 1101 - CAREER PREPARATION AND STUDENT SUCCESS	0	1
COMMUNICATION - 6 hours		
ENGL 1301 - Rhetoric and Composition I	0	3
ENGL 1302 - Rhetoric and Composition II *prereq* : C or better in ENGL 1301	0	3
Total	0	6
CREATIVE ARTS - 3 hours (select one of the following: ART 1301, MUSI 1300, THEA 1342, THEA 1343)	0	3
GOVERNMENT/POLITICAL SCIENCE - 6 hours		
POLS 2311 - Government of the United States	0	3
POLS 2312 - State and Local Government	0	3
Total	0	6
LANGUAGE, PHILOSOPHY AND CULTURE - 3 hours (*select one of the following* : ANTH 2322, ARAB 2314 ARCH 2300, ART 1309, ART 1310, ART 1317, CHIN 2314, ENGL 2303, ENGL 2309, ENGL 2319, ENGL 2329 GERM 2314, GLOBAL 2301, INTS 1310, KORE 2314, LING 2371, PHIL 1304, PHIL 1310, PHIL 2300, PORT 2314, RUSS 2314, SPAN 2314)	0	3
LIFE AND PHYSICAL SCIENCE - 6 hours		
PHYS 1443 - General Technical Physics I *prereq* : MATH 1426	0	4
PHYS 1444 - General Technical Physics II prereqs: C or better PHYS 1443 & MATH 2425 or concurrent enrollment	0	4
Total	0	8
MATHEMATICS - 6 hours		
MATH 1426 - Calculus I *prereq* : C or better in MATH 1421 Prerequisite: C or better in Test scores	0	4
MATH 2425 - Calculus II *prereq* : C or better in MATH 1426	0	4
Total	0	8
SOCIAL AND BEHAVIORAL SCIENCES - 3 hours (*select one of the following* : ANTH 1306, CRCJ 2334, ECOI ECON 2306, ECON 2337, FINA 2330, IE 2308, LING 2301, MANA 2302, PSYC 1315, SOCI 1311, SOCI 2312)	0	3
U.S. HISTORY - 6 hours-HIST 1301, 1302, 1331 or 1332 -		
HIST 1301 - History of the U.S. to 1865 prereq: ENGL 1301 or concurrent enrollment	0	3
HIST 1302 - History of the U.S., 1865 to Present prereq: ENGL 1301 or concurrent enrollment	0	3
Total	0	6
FOUNDATIONAL COMPONENT AREA - 3 hours (any core course, cannot double-count)	0	3
GENERAL ELECTIVES *as needed to total 120 hours for degree*	0	13

SCIENCE

	Earned	Need
COMPUTER SCIENCE -		
select one of the following:	0	3
DATA 3401 — Python for Data Science 1		
CSE 1311. INTRODUCTION TO PROGRAMMING FOR ENGINEERS Prerequisite: C or better in or concurrent enrollment (MATH 1421, MATH 1426, MATH 2425, MATH 2326, MATH 3330, HONR-SC 1426, or HONR-SC 2425		
PHYS 2321 - Computational Physics prereq: PHYS 1444		
MATH 3345 - Numerical Analysis and Computer Applications prereqs: C or better in MATH 2326 & C or better in MATH 3319 or 3330 C or better in MATH 3319 or 3330		
CHEMISTRY - 8 hours		
CHEM 1441 - General Chemistry I prereq: MATH 1302 or 1303 or 1322 or 1323 or 142 or appropriate ACT Math, SAT Math, or Math Placement Test score	0	4
CHEM 1442 - General Chemistry II *prereq* : C or better in CHEM 1441	0	4
Total	0	8
BIOLOGY &/OR GEOLOGY - 6 hours		
BIOL or GEOL course for majors BIOL 1441/GEOL 1301, 1302, 1340, 1350 OR ENVR 133	0	3
BIOL or GEOL course for majors BIOL 1442/GEOL 1301, 1302,1340, 1350 OR ENVR 130	0	3
Total	0	6
MATHEMATICS (additional) - 9 hours		
MATH 2326 - Calculus III *prereq* : C or better in MATH 2425	0	3
MATH 3319 - Differential Equations & Linear Algebra *prereq* : C or better in MATH 2326 or concurrent enrollment	0	3
or MATH 3318 - Differential Equations *prereq* : C or better in MATH 2326 or concurrent enrollme		
MATH 4000-level elective Recommend **MATH 4322 (Fall only)** & **MATH 4324** (spring	0	3
Total		9
NOTE: You must Make a C or better in ALL major courses		
MAJOR: Physics - 37 hours		
PHYS 2311 - Mathematical Methods of Physics prereqs: C or better in PHYS 1444 & MA	0	3
PHYS 3313 - Introduction to Modern Physics prereqs: C or better PHYS 1444 & MATH	0	3
PHYS 3183 - Modern Physics Laboratory prereqs: C or betterPHYS 3313 or concurrer	0	1
PHYS 3321 - Intermediate Electricity and Magnetism *prereqs: C or better* PHYS 2311 3318 or 3319	0	3
PHYS 4315 - Thermodynamics and Statistical Mechanics prereqs: C or better PHYS 3313 & MATH 2	0	3
PHYS 4326 - Introduction to Quantum Mechanics prereqs: PHYS 3313 & MATH 3318 or 3319	0	3
PHYS 4117 - Individual Learning By Seminar *prereqs* : 18 hours of Physics & senior standing	0	1
PHYS 4324 - Advanced Electricity and Magnetism prereq: PHYS 3321	0	3
PHYS 4319 - Advanced Mechanics prereqs: PHYS 2311, PHYS 3321, & MATH 331	0	3
PHYS electives - 14 hours (no more than 4 hours can be used from PHYS 4181, 4281)		
ANY Physics advanced (3000/4000-level) 3hr or 4hr courses not listed above		
	0	4
	0	4
	0	3
PHYS 4281 & 4181: Permission from faculty	0	3
Total	0	34
PHYS 4327 Quantum Mechanics II is recommend for graduate school		
TOTAL DEGREE HOURS - must have 120 to graduate	0	120

ADDITIONAL DEGREE REQUIREMENTS

COMMUNICATION COMPETENCE - satisfied by PHYS 4117	*
COMPUTER COMPETENCE - satisfied by Computer Science requirement	*
TOTAL ADVANCED (3000/4000-LEVEL) HOURS - must have 36 to graduate	36
TOTAL RESIDENCY HOURS - must have 30 to graduate	30

ANY Physics, Astrophysics, or Astronomy 3hr or 4hr advanced (3000/4000-level) courses not listed as a degree requirement can be used as elective

PHYSICS MAJOR COURSE ROTATION SCHEDULE *subject to change*

FALL & SPRING: PHYS 2311 (Mathematical Methods of Physics),PHYS 3313 (Introduction to Modern Physics), HYS 3183 (Modern Physics Laboratory), **PHYS 4117 (**Individual Learning By Seminar)
FALL: PHYS 2321 (Computational Physics), PHYS 3321 (Intermediate Electricity and Magnetism), PHYS 4315 (Thermodynamics and Statistical Mechanics), PHYS 4326 (Introduction to Quantum Mechanics)
SPRING: PPHYS 4319 (Advanced Mechanics), PHYS 4324 (Advanced Electricity and Magnetism)

Students must maintain a minimum 2.25 cumulative GPA and a 2.25 Physics GPA. Failure to do so may result in dismissal from the College of Science.

Note: Students are encouraged to sign up for 1 or 2 hours research before or concurrent with signing up for PHYS 4117 seminar. The students may then use their research activities as the basis of their Seminar presentations.

Notes

T = transfer credit to UTA as soon as possible
? = may have credit; need to transfer it to UTA and/or Admissions needs to evaluate it

cc = can be taken at a community college (consult Transfer Equivalency Guide)
IP = course in progress; credit not yet earned
sub = credit earned but it needs to be subbed on UMAP for graduation