

Bachelor of Science (BS)

Physics

Concentration: Pure and Applied Physics

Course # Course Title Additional Notes For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI See General Education Core for more details Choose 1 Communication (Core) С 010 reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or bette Options: ENGL 1301 or ENGL 1387 (H) in ENGL 1301/1387. MATH 2412 with a grade of 'C' or better; or passing the Precalculus Exemption Test Three Hour Lecture will satisfy the general education core. MATH 2413 С Calculus I 020 administered by the Department of Mathematics. One Hour Lecture will satisfy the major requirement. See General Education Core for more details. 3 Choose 1 American History (Core) 060 Options: HIST 1301 or HIST 1387 (H) or HIST/MASC 2327 3 Creative Arts (Core) Choose 1 050 See General Education Core for course options. **UNIV 1301** Learning Framework Only if required, based on ACT/SAT and high school rank. 13 Semester Total Hours For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI See General Education Core for more details 3 Choose 1 Communication (Core) reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better Options: ENGL 1302 or ENGL 1388 (H) or ENGL 1305 in ENGL 1301/1387. С 4 **MATH 2414** Calculus II MATH 2413 (or MATH 2487) with a grade of 'C' or better. C 030/090 MATH 2413 (or MATH 2487) and concurrent enrollment in MATH 2414 (or MATH 2488). It is mandatory for students pursuing a BS in Physics to take face-4 **PHYS 2425** Physics for Scientists and Engineers I to-face (onsite) lecture sections for PHYS 2425/2426 See General Education Core for more details 3 American History (Core) 060 Choose 1 Options: HIST 1302 or HIST 1388 (H) or HIST/MASC 2328 3 **CSCI 1380** Computer Science I 090 Concurrent enrollment or credit for MATH 1314 or higher level mathematics course. 17 Semester Total Hours С MATH 2415 Calculus III MATH 2414 (or MATH 2488) with a grade of 'C' or better. It is mandatory for students pursuing a BS in Physics to take face-PHYS 2426 Physics for Scientists and Engineers II 030/090 PHYS 2425. to-face (onsite) lecture sections for PHYS 2425/2426 See General Education Core for more details 3 Choose 1 Government/Political Science (Core) 070 Options: POLS 2305 or POLS 2385 (H) 3 XXXX X3XX Science Elective See Degree Plan for course options. 3 X3XX - X3XX Free Flective Language Proficiency Requirement (as needed) 17 Semester Total Hours MATH 3341 **Differential Equations** MATH 2414 (or MATH 2488) with a grade of "C" or better. 3 X3XX - X3XX Science Elective See Degree Plan for course options. 4 **PHYS 3402** Modern Physics **PHYS 2426** Physics core requirement. See General Education Core for more details 3 Choose 1 Government/Political Science (Core) 070 Options: POLS 2306 or POLS 2386 (H) X3XX - X3XX Free Elective Language Proficiency Requirement (as needed) 16 Semester Total Hours

CORE: The 2019-2020 list of core courses can be found at: www.utrgv.edu > Academics > Undergraduate > General Education Core www.utrgv.edu/core

Symbols Key

Critical ('!'): sequence sensitive course.

Minimum Grade: A - Excellent; B - Good; C - Satisfactory; D - Below Average; CR - Credit; P - Passing; S - Satisfactory.

General Education Core (GEC) Sections: 010 - Communication; 020 - Mathematics; 030 - Life and Physical Sciences; 040 - Language, Philosophy & Culture; 050 - Creative Arts; 060 - American History; 070 - Government/Political Science; 080 - Social and Behavioral Sciences; 090 - Applied Communication and Literacies; 090 Humanities; 090 - Leadership; 090 - Science Labs; 090 - Interdisciplinary; 090 - Technologies; 090 - Language Diversity & Writing.

2019-2020

	Н	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
	3	PHYS 3303	Thermodynamics			MATH 2415 and either PHYS 2412 or PHYS 2426.	Physics core requirement.
	4	PHYS 3411	Math Methods in Physics I			MATH 3341	Physics core requirement.
FALL	3	XXXX X3XX	Science Elective				See Degree Plan for course options.
	3	Choose 1	Social and Behavioral Sciences (Core)		080		See General Education Core for course options.
	3	PHYS 3305	Classical Mechanics			PHYS 2426 and MATH 2415.	Physics core requirement.
YEAR	16 Semester Total Hours						
THIRD	4	PHYS 3412	Math Methods in Physics II			PHYS 3411	Physics core requirement.
	3	PHYS 4305	Statistical Mechanics			PHYS 3303 and PHYS 3311.	
SPRING	3	PHYS 4306 or PHYS 4101	Advanced Physics Lab or Senior Laboratory Research (taken three times)			Consent of Instructor	PHYS 4101: taken three times
	3	Choose 1	Language, Philosophy & Culture (Core)		040		See General Education Core for course options.
	3	PHYS X3XX	Advanced Physics Elective				See degree plan for course options.
16 Semester Total Hours							
	Н	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
	3	Course # PHYS 4303	Quantum Mechanics I		GEC	PHYS 3305 and PHYS 3311.	Physics core requirement.
					GEC		
FALL	3	PHYS 4303	Quantum Mechanics I		GEC	PHYS 3305 and PHYS 3311.	Physics core requirement.
FALL	3	PHYS 4303 PHYS 3304	Quantum Mechanics I Optics		GEC	PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426	Physics core requirement. Physics core requirement.
YEAR FALL	3	PHYS 4303 PHYS 3304 PHYS 3301	Quantum Mechanics I Optics Electromagnetic Theory I		GEC	PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412.	Physics core requirement. Physics core requirement. Physics core requirement.
URTH YEAR FALL	3 3 3 3	PHYS 4303 PHYS 3304 PHYS 3301 PHYS 4008	Quantum Mechanics I Optics Electromagnetic Theory I Seminar in Physics (Taken twice)		GEC	PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412.	Physics core requirement. Physics core requirement. Physics core requirement. Physics core requirement.
FOURTH YEAR FALL	3 3 3 3	PHYS 4303 PHYS 3304 PHYS 3301 PHYS 4008 PHYS X3XX	Quantum Mechanics I Optics Electromagnetic Theory I Seminar in Physics (Taken twice)		GEC	PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412.	Physics core requirement. Physics core requirement. Physics core requirement. Physics core requirement.
FOURTH YEAR FALL	3 3 3	PHYS 4303 PHYS 3304 PHYS 3301 PHYS 4008 PHYS X3XX Semester Total Hours	Quantum Mechanics I Optics Electromagnetic Theory I Seminar in Physics (Taken twice) Advanced Physics Elective		GEC 090	PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412. One year of Physics and consent of instructor.	Physics core requirement. Physics core requirenent. Physics core requirenent. Physics core requirenent.
FOURTH YEAR FALL	3 3 3 12 S	PHYS 4303 PHYS 3304 PHYS 3301 PHYS 4008 PHYS X3XX Semester Total Hours PHYS 3302	Quantum Mechanics I Optics Electromagnetic Theory I Seminar in Physics (Taken twice) Advanced Physics Elective Electromagnetic Theory II			PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412. One year of Physics and consent of instructor.	Physics core requirement. Physics core requirement. Physics core requirement. Physics core requirement. See degree plan for course options.
FOURTH YEAR FALL FALL	3 3 3 3 12 s 3 1	PHYS 4303 PHYS 3304 PHYS 3301 PHYS 4008 PHYS X3XX Semester Total Hours PHYS 3302 Choose 1	Quantum Mechanics I Optics Electromagnetic Theory I Seminar in Physics (Taken twice) Advanced Physics Elective Electromagnetic Theory II Integrative/Experiential Learning Option (Core)			PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412. One year of Physics and consent of instructor. PHYS 3301.	Physics core requirement. Physics core requirement. Physics core requirement. Physics core requirement. See degree plan for course options.
FOURTH YEAR FALL	3 3 3 12 s 3 1 3 3	PHYS 4303 PHYS 3304 PHYS 3301 PHYS 4008 PHYS X3XX Semester Total Hours PHYS 3302 Choose 1 PHYS 4304	Quantum Mechanics I Optics Electromagnetic Theory I Seminar in Physics (Taken twice) Advanced Physics Elective Electromagnetic Theory II Integrative/Experiential Learning Option (Core) Quantum Mechanics II			PHYS 3305 and PHYS 3311. MATH 2415 and PHYS 2426 MATH 2415 and either PHYS 2426 or PHYS 2412. One year of Physics and consent of instructor. PHYS 3301.	Physics core requirement. Physics core requirement. Physics core requirement. Physics core requirement. See degree plan for course options. See General Education Core for course options.

120 TOTAL HOURS

Approved: Thursday, April 4, 2019

(54) TOTAL ADVANCED HOURS

Revised: Wednesday, May 8, 2019