

	I	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
FIRST YEAR	FALL	3	Choose 1	Communication (Core)	C	010	For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387.	See General Education Core for more details Options: ENGL 1301 <b>or</b> ENGL 1387 (H)
		4	MATH 2413	Calculus I	C	020	MATH 2412 with a grade of 'C' or better; or passing the Precalculus Exemption Test administered by the Department of Mathematics.	
		3	Choose 1	American History (Core)		060		See General Education Core for more details. Options: HIST 1301 <b>or</b> HIST 1387 <b>or</b> HIST/MASC 2327
		3	Choose 1	Social and Behavioral Sciences (Core)		080		See General Education Core for course options.
		3	Choose 1	Creative Arts (Core)		050		See General Education Core for course options.
		1	UTCH 1101	Inquiry Approaches to Teaching			Criminal background check and TB vaccine.	UTeach requirement
			UNIV 1301	Learning Framework				Only if required, based on ACT/SAT and high school rank.
	17 Semester Total Hours							
	SPRING	3	Choose 1	Communication (Core)		010	For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387.	See General Education Core for more details Options: ENGL 1302 <b>or</b> ENGL 1388 (H) <b>or</b> ENGL 1305
		4	MATH 2414	Calculus II	C		MATH 2413 (or MATH 2487) with a grade of 'C' or better.	
		4	PHYS 2425	Physics for Scientists and Engineers I	C	030	MATH 2413 (or MATH 2487) and concurrent enrollment in MATH 2414 (or MATH 2488).	
		3	Choose 1	American History (Core)		060		See General Education Core for more details. Options: HIST 1302 <b>or</b> HIST 1388 <b>or</b> HIST/MASC 2328
		3	CSCI 1380	Computer Science I		090	Concurrent enrollment or credit for MATH 1314 or higher level mathematics course.	
		1	UTCH 1102	Inquiry-Based Lesson Design			UTCH 1101 with a grade of 'C' or better or concurrent enrollment with UTCH 1101.	UTeach requirement
	18 Semester Total Hours							
SECOND YEAR	FALL	4	MATH 2415	Calculus III	C		MATH 2414 (or MATH 2488) with a grade of 'C' or better.	
		3	Choose 1	Language, Philosophy & Culture (Core)		040		See General Education Core for course options.
		4	PHYS 2426	Physics for Scientists and Engineers II		030	PHYS 2425.	
		3	Choose 1	Government/Political Science (Core)		070		See General Education Core for more details Options: POLS 2305 <b>or</b> POLS 2385 (H)
		3	PHYS 3330	Functions and Modeling			A grade of 'C' or better in the following: MATH 2413 (or MATH 2487) and UTCH 1102.	UTeach requirement
		17 Semester Total Hours						
	SPRING	3	MATH 3341	Differential Equations			MATH 2414 (or MATH 2488) and MATH 2318 with a grade of 'C' or better.	
		3	MATE 3317	Perspective in Mathematics and Science			MATE 3321, BIOL 3330, or PHYS 3330 with a grade of "C" or better.	UTeach requirement
		4	PHYS 3402	Modern Physics			PHYS 2426	Physics core requirement.
		3	UTCH 3301	Knowing and Learning in Mathematics and Science			UTCH 1101 and UTCH 1102 with a grade of 'C' or better or concurrent enrollment with UTCH 1101 and/or UTCH 1102 with consent of UTeach advisor.	UTeach requirement
		3	Choose 1	Government/Political Science (Core)		070		See General Education Core for more details Options: POLS 2306 <b>or</b> POLS 2386 (H)
		1	Choose 1	Integrative/Experiential Learning Option (Core)		090		See General Education Core for course options.
	17 Semester Total Hours							Must apply to Teacher Education Program.

CORE: The 2017-2019 list of core courses can be found at: [www.utrgv.edu](http://www.utrgv.edu) > Academics > Undergraduate > General Education Core  
[www.utrgv.edu/core](http://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 - Computer Application; 090 - Interdisciplinary ;090 - Science Labs; 090 - Wellness.

**Language Proficiency Requirement:** Student is required to demonstrate language proficiency in a language other than English at the undergraduate level equivalent to a minimum of six credits.

THIRD YEAR	FALL	I	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
			3	PHYS 3305	Classical Mechanics			PHYS 2426 and MATH 2415.	Physics core requirement.
			4	PHYS 3411	Math Methods for Physicist I			MATH 3341	Physics core requirement.
			3	PHYS 3303	Thermodynamics			MATH 2415 and either PHYS 2412 or PHYS 2426.	Physics core requirement.
			3	UTCH 3302	Classroom Interactions			(a) A university grade point average of at least 2.75, (b) UTCH 3301 with a grade of 'C' or better or concurrent enrollment with UTCH 3301 with consent of UTeach advisor, and (c) positive evaluation of stage-one UTeach portfolio.	UTeach requirement
			3	xxxx x3xx	Free Elective				Language Proficiency Requirement (as needed).
		16 Semester Total Hours							
			3	xxxx x3xx	Free Elective				Language Proficiency Requirement (as needed).
			3	PHYS 4305	Statistical Mechanics			PHYS 3303 and PHYS 3311.	Physics core requirement.
			1	PHYS 4101	Senior Laboratory Research			Consent of instructor.	Physics core requirement.
		3	READ 4305	Content Area Literacy			Admission to COE Teacher Education Program.	UTeach requirement	
		3	UTCH 3303	Project-Based Instruction			(a) A university grade point average of at least 2.75, (b) UTCH 3302 with a grade of 'C' or better or concurrent enrollment with UTCH 3302 with consent of UTeach advisor, and (c) positive evaluation of the second-stage UTeach portfolio.	UTeach requirement	
13 Semester Total Hours									
FOURTH YEAR	FALL	I	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
			3	PHYS 3304	Optics			MATH 2415 and either PHYS 2412 or PHYS 2426.	Physics core requirement.
			3	PHYS 3301	Electromagnetic Theory I			MATH 2415 and either PHYS 2426 or PHYS 2412.	Physics core requirement.
			3	PHYS 4303	Quantum Mechanics I			PHYS 3305 and PHYS 3311.	Physics core requirement.
			3	PHYS 4300	Undergraduate Research			Senior standing in the Physics Degree Program and consent of a supervising faculty member.	Capstone
			12 Semester Total Hours						
	SPRING		3	PHYS 4392	Research Methods			Grade C or better in the following: MATH 2413 (or MATH 2487) and UTCH 1102.	UTeach requirement
			1	UTCH 4101	Apprentice Teaching Seminar			(a) A university grade point average of at least 2.75, (b) UTCH 3303 with a grade of 'C' or better, (c) concurrent enrollment with UTCH 4601, (d) successful completion of PPR and content TExES examinations, and (e) acceptance of the third-stage UTeach portfolio.	UTeach requirement
			6	UTCH 4601	Apprentice Teaching			(a) A university grade point average of at least 2.75, (b) UTCH 3303 with a grade of 'C' or better, (c) successful completion of PPR and content TExES examinations, and (d) acceptance of the third-stage UTeach portfolio.	UTeach requirement
		10 Semester Total Hours							

**Progression Requirements:** Admission to the College of Education and P-16 Integration is required for participation in Apprentice Teaching and Seminar (UTCH 4101, 4601). Students unable to be admitted to UTCH 4601 and UTCH 4101 will be required to substitute 4 advance hours, as recommended by advisor.

In addition to the graduation requirements listed in the UTRGV 2017-2019 Undergraduate Catalog, demonstration of proficiency in a language other than English is required at the undergraduate level equivalent to a minimum of six credit hours. Proficiency can be demonstrated by a college credit exam, a placement test approved through the UTRGV department of Writing and Language Studies, and/or to six credit hours of college-level language coursework.

**120 TOTAL HOURS**  
**(61) TOTAL ADVANCED HOURS**

Approved:  
Revised: Wednesday, April 26, 2017

Concentration: Non-Teacher Certification Concentration: Medical Physics

	!	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
FIRST YEAR	FALL		3	Choose 1			For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387.	See General Education Core for more details Options: ENGL 1301 <b>or</b> ENGL 1387 (H)
			4	MATH 2413		c	MATH 2412 with a grade of 'C' or better; or passing the Precalculus Exemption Test administered by the Department of Mathematics.	
			3	Choose 1				See General Education Core for more details. Options: HIST 1301 <b>or</b> HIST 1387 <b>or</b> HIST/MASC 2327
			1	Choose 1				See General Education Core for course options.
			3	Choose 1				See General Education Core for course options.
				UNIV 1301				Only if required, based on ACT/SAT and high school rank.
	<b>14 Semester Total Hours</b>							
	SPRING		3	Choose 1				See General Education Core for more details Options: ENGL 1302 <b>or</b> ENGL 1388 (H) <b>or</b> ENGL 1305
			4	MATH 2414		c	MATH 2413 (or MATH 2487) with a grade of 'C' or better.	
			4	PHYS 2425		c	MATH 2413 (or MATH 2487) and concurrent enrollment in MATH 2414 (or MATH 2488).	
			3	Choose 1				See General Education Core for more details. Options: HIST 1302 <b>or</b> HIST 1388 <b>or</b> HIST/MASC 2328
			3	CSCI 1380			Concurrent enrollment or credit for MATH 1314 or higher level mathematics course.	
	<b>17 Semester Total Hours</b>							
SECOND YEAR	FALL		4	MATH 2415		c	MATH 2414 (or MATH 2488) with a grade of 'C' or better.	
			4	PHYS 2426			PHYS 2425.	
			3	Choose 1				See General Education Core for more details Options: POLS 2305 <b>or</b> POLS 2385 (H)
			3	XXXX X3XX				
	<b>14 Semester Total Hours</b>							
	SPRING		3	MATH 3341			MATH 2414 (or MATH 2488) and MATH 2318 with a grade of 'C' or better.	
			3	PHYS 3305			PHYS 2426 & MATH 2415	Physics core requirement.
			4	PHYS 3402			PHYS 2426.	Physics core requirement.
			3	Choose 1				See General Education Core for more details Options: POLS 2306 <b>or</b> POLS 2386 (H)
			3	Choose 1				See General Education Core for course options.
	<b>16 Semester Total Hours</b>							

**CORE:** The 2017-2019 list of core courses can be found at: [www.utrgv.edu](http://www.utrgv.edu) > Academics > Undergraduate > General Education Core  
[www.utrgv.edu/core](http://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 - Computer Application; 090 - Interdisciplinary ;090 - Science Labs; 090 - Wellness.

**Language Proficiency Requirement:** Student is required to demonstrate language proficiency in a language other than English at the undergraduate level equivalent to a minimum of six credits.

		!	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
THIRD YEAR	FALL		3	PHYS 3303	Thermodynamics			MATH 2415 and either PHYS 2412 or PHYS 2426.	Physics core requirement.
			3	PHYS 3306	Introduction to Biophysics			PHYS 1402 or PHYS 2426.	Meets concentration req.
			3	PHYS 3311	Math Methods in Physics I			MATH 3341.	Physics core requirement.
			3	Choose 1	Language, Philosophy & Culture (Core)		040		See General Education Core for course options.
			3	XXXX X3XX	Minor				
			15 Semester Total Hours						
	SPRING		4	PHYS 3404	Optics			MATH 2415 and either PHYS 2412 or PHYS 2426.	Physics core requirement.
			3	PHYS 3309	Introduction to Medical Imaging			MATH 1314 and either PHYS 1402, PHYS 2426, PSCI 1422, CHEM 1312, or BIOL 1407 (or BIOL 1488).	Meets concentration req.
			3	PHYS 4305	Statistical Mechanics			PHYS 3303 and PHYS 3311.	Meets concentration req.
			3	XXXX X3XX	Minor (Advanced)				
			3	XXXX X3XX	Minor				
			16 Semester Total Hours						
FOURTH YEAR	FALL		3	PHYS 4303	Quantum Mechanics I			PHYS 3305 and PHYS 3311.	Physics core requirement.
				PHYS 4101	Laboratory Research			Consent of instructor.	CapStone Course; Choose either PHYS 4101 or 4201.
			2	PHYS 4201	Advanced Physics Lab			Consent of instructor.	CapStone Course; Choose either PHYS 4101 or 4201.
			3	PHYS 3301	Electromagnetic Theory I			MATH 2415 and either PHYS 2426 or PHYS 2412.	Physics core requirement.
			3	PHYS 3310	Radiation Biophysics			PHYS 1402 or PHYS 2426.	Meets concentration req.
			3	XXXX X3XX	Minor (Advanced)				
	SPRING		14 Semester Total Hours						
			3	PHYS 3302	Electromagnetic Theory II			PHYS 3301.	Meets concentration req.
				PHYS 4101	Laboratory Research			Consent of instructor.	Not needed if PHYS 4201 taken.
			3	PHYS 4304	Quantum Mechanics II			PHYS 4303.	Meets concentration req.
			3	PHYS 4312	Introductory Nuclear Engineering and Health Physics Concepts			PHYS 3402 and PHYS 4309; or consent of the instructor.	Meets concentration req.
			3	XXXX X3XX	Minor (Advanced)				
			3	XXXX X3XX	Free Elective				
			15 Semester Total Hours						

Graduation Requirements

121 TOTAL HOURS  
(58) TOTAL ADVANCED HOURS

Approved:  
Revised: Monday, March 20, 2017



	I	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
FIRST YEAR	FALL	3	Choose 1	Communication (Core)	C	010	For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387. MATH 2412 with a grade of 'C' or better; or passing the Precalculus Exemption Test administered by the Department of Mathematics.	See General Education Core for more details Options: ENGL 1301 <b>or</b> ENGL 1387 (H)
		4	MATH 2413	Calculus I	C	020		
		3	Choose 1	American History (Core)		060		See General Education Core for more details. Options: HIST 1301 <b>or</b> HIST 1387 <b>or</b> HIST/MASC 2327
		3	Choose 1	Creative Arts (Core)		050		See General Education Core for course options.
			UNIV 1301	Learning Framework				Only if required, based on ACT/SAT and high school rank.
	<b>13 Semester Total Hours</b>							
	SPRING	3	Choose 1	Communication (Core)		010	For all 010 courses: Satisfactory scores on ENGL portion of ACT test or TSI reading/writing exams or ENGL 0301. For ENGL 1302/1388, a grade of "C" or better in ENGL 1301/1387. MATH 2413 (or MATH 2487) with a grade of 'C' or better.	See General Education Core for more details Options: ENGL 1302 <b>or</b> ENGL 1388 (H) <b>or</b> ENGL 1305
		4	MATH 2414	Calculus II	C			
		4	PHYS 2425	Physics for Scientists and Engineers I	C	090	MATH 2413 (or MATH 2487) and concurrent enrollment in MATH 2414 (or MATH 2488).	
		3	Choose 1	American History (Core)		060		See General Education Core for more details. Options: HIST 1302 <b>or</b> HIST 1388 <b>or</b> HIST/MASC 2328
		3	CSCI 1380	Computer Science I		090	Concurrent enrollment or credit for MATH 1314 or higher level mathematics course.	
	<b>17 Semester Total Hours</b>							
SECOND YEAR	FALL	4	MATH 2415	Calculus III	C		MATH 2414 (or MATH 2488) with a grade of 'C' or better.	
		4	PHYS 2426	Physics for Scientists and Engineers II		090	PHYS 2425.	
		3	Choose 1	Government/Political Science (Core)		070		See General Education Core for more details Options: POLS 2305 <b>or</b> POLS 2385 (H)
		3	XXXX X3XX	Science Elective				See Degree Plan for course options.
		3	XXXX X3XX	Free Elective				Language Proficiency Requirement (as needed)
	<b>17 Semester Total Hours</b>							
	SPRING	3	MATH 3341	Differential Equations			MATH 2414 (or MATH 2488) and MATH 2318 with a grade of 'C' or better.	
		3	XXXX X3XX	Science Elective				See Degree Plan for course options.
		4	PHYS 3402	Modern Physics			PHYS 2426	Physics core requirement.
		3	Choose 1	Government/Political Science (Core)		070		See General Education Core for more details Options: POLS 2306 <b>or</b> POLS 2386 (H)
		3	XXXX X3XX	Free Elective				Language Proficiency Requirement (as needed)
	<b>16 Semester Total Hours</b>							

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[www.utrgv.edu/core](http://www.utrgv.edu/core)

**Symbols Key**

**Critical ('I'):** 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 - Computer Application; 090 - Interdisciplinary ;090 - Science Labs; 090 - Wellness.

**Language Proficiency Requirement:** Student is required to demonstrate language proficiency in a language other than English at the undergraduate level equivalent to a minimum of six credits.

THIRD YEAR	FALL	I	H	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.
			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.
		16 Semester Total Hours							
SPRING		4	PHYS 3412	Math Methods in Physics II			PHYS 3411	Physics core requirement.	
		3	PHYS 4305	Statistical Mechanics			PHYS 3303 and PHYS 3311.		
		2	PHYS 4201 or PHYS 4101	Advanced Physics Lab or Senior Laboratory Research				Choose either PHYS 4101 or 4201. PHYS 4101 to be taken twice.	
		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.	
15 Semester Total Hours									
FOURTH YEAR	FALL	I	H	Course #	Course Title	Min. Grade	GEC	Prerequisite	Additional Notes
			3	PHYS 4303	Quantum Mechanics I			PHYS 3305 and PHYS 3311.	Physics core requirement.
				PHYS 4101	Laboratory Research			Consent of instructor.	Not needed if PHYS 4201 taken.
			3	PHYS 3304	Optics			MATH 2415 and PHYS 2426	Physics core requirement.
			3	PHYS 3301	Electromagnetic Theory I			MATH 2415 and either PHYS 2426 or PHYS 2412.	Physics core requirement.
			1	PHYS 4108	Seminar in Physics			One year of physics and consent of instructor.	Physics core requirement.
			3	PHYS X3XX	Advanced Physics Elective				See degree plan for course options.
	13 Semester Total Hours								
	SPRING		3	PHYS 3302	Electromagnetic Theory II			PHYS 3301.	
			1	Choose 1	Integrative/Experiential Learning Option (Core)		090		See General Education Core for course options.
			3	PHYS 4304	Quantum Mechanics II			PHYS 4303.	
			3	PHYS X3XX	Advanced Physics Elective				See Degree Plan for course options.
			3	PHYS 4300	Undergraduate Research			Senior standing in the Physics Degree Program and consent of a supervising faculty member.	Capstone.
13 Semester Total Hours									

Graduation Requirements

In addition to the graduation requirements listed in the UTRGV 2017-2019 Undergraduate Catalog, demonstration of proficiency in a language other than English is required at the undergraduate level equivalent to a minimum of six credit hours. Proficiency can be demonstrated by a college credit exam, a placement test approved through the UTRGV department of Writing and Language Studies, and/or to six credit hours of college-level language coursework.

120 TOTAL HOURS  
(54) TOTAL ADVANCED HOURS

Approved:  
Revised: Wednesday, April 26, 2017