

2022-2023

Degree Map: Applied Physics BA

Physics Program

School of Natural Sciences & Mathematics | Stockton University

USC 1 – 240 | 609-652-4546

The following is a **suggested** plan of study for completion of this degree program.

The **goal of a Degree Map** is to ensure that students graduate with no more than 128 credits and in four years.

- All students should speak with their preceptor about their academic programs.
- Students are encouraged to take overload and Summer courses to facilitate their progress towards graduation as necessary.
- Transfer students may not need to take all courses in the plan; they should consult with an academic advisor.

FIRST YEAR - FALL	Credit	FIRST YEAR - SPRING	Credit
Course load	15-19	Course load	15-19
FRST or G-course Attribute: First Year Seminar	4	ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4
[Optional] ASD or G-course Optional Attributes: W1 and A, H, I, R, and/or V	4	[Optional] ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4
PHYS 2220/25 Physics I w/lab ^{1,2} Attribute: Q1	6	PHYS 2230 Physics II w/lab ^{1,2} Attribute: Q1	6
MATH 2215 Calculus I Attribute: Q1	5	MATH 2216 Calculus II Attribute: Q1	5

SECOND YEAR - FALL	Credit	SECOND YEAR - SPRING	Credit
Course load	17	Course load	16
ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4	ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4
ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4	PHYS 3345 Math Methods for Engineering & Science Attribute: Q1	4
PHYS 3010 Physics III ¹ [Fall only course] Attribute: Q1	4	PHYS 3### ³	4
MATH 2217 Calculus III Attribute: Q1	5	Cognate Course ⁴	4
		PHYS 2600 Physics Colloquium ⁵	0
		PHYS 4620 Research Methods ⁵	0

THIRD YEAR - FALL	Credit	THIRD YEAR - SPRING	Credit
Course load	16	Course load	16
ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4	ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4
ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4	PHYS 3220 Classical Mechanics Attribute: Q2	4
PHYS 3### ³	4	PHYS 3### ³	4
Cognate Course ⁴	4	Cognate Course ⁴	4
PHYS 2600 Physics Colloquium ⁵	0	PHYS 2600 Physics Colloquium ⁵	0
PHYS 4620 Research Methods ⁵	0	PHYS 4620 Research Methods ⁵	0
PHYS 4800 Undergraduate Thesis OR PHYS 4900 Internship ⁵	0-4	PHYS 4800 Undergraduate Thesis OR PHYS 4900 Internship ⁵	0-4

FOURTH YEAR - FALL	Credit	FOURTH YEAR - SPRING	Credit
Course load	16	Course load	16
ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4	ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4
ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4	ASD or G-course Optional Attributes: W1, W2, A, H, I, R, and/or V	4
PHYS 3### ³	4	PHYS 3### ³	4
Cognate Course ⁴	4	Cognate Course ⁴	4
PHYS 2600 Physics Colloquium ⁵	0	PHYS 2600 Physics Colloquium ⁵	0
PHYS 4620 Research Methods ⁵	0	PHYS 4620 Research Methods ⁵	0
PHYS 4800 Undergraduate Thesis OR PHYS 4900 Internship ⁵	0-4	PHYS 4800 Undergraduate Thesis OR PHYS 4900 Internship ⁵	0-4

GRADUATION REQUIREMENT TRACKER

G-course	✓
GAH	
GAH	
GEN	
GIS	
GNM	
GNM	
GSS	
GSS	

Quantitative Reasoning	✓
Q1 (First year)	
Q1/Q2	
Q2	

At-some-distance	✓
ASD	
ASD	
ASD	
ASD	

Attributes	✓
A	
H	
I	
R1	
R2	
V	

Writing Requirement	✓
W1 (First year)	
W1/W2	
W1/W2	
W1/W2 (3000 level or higher)	

Program specific notes

- An overall GPA of 2.0 or better in all NAMS courses and a grade of "C" or better in each program and cognate course, is required.
- Odd Years: e.g., 2019, 2021. Even Years: e.g., 2020, 2022. So, a Spring Odd Years course would be offered in Spring 2019, for example.
- All Q's will be covered in degree courses. All but one W2 will be covered.
- ¹C or better in Physics I, II, and III is required to continue onto the intermediate and advanced physics courses.
- ²Students transferring from other majors who have already taken Physics for Life Sciences (PHYS 2110 and PHYS 2120) may substitute PHYS I and PHYS II respectively, with approval from the Physics Program.
- ³You must complete one of the following courses:
 - PHYS 3110 Electronics [Spring Even and Odd Years]; PHYS 3340 Optics [Spring Even Years];
 - PHYS 3370 Electricity and Magnetism [Fall Odd Years]; PHYS 3380 Thermal Physics [Spring Odd Years];
 - PHYS 3390 Introduction to Quantum Mechanics [Fall Even Years]
 Once you have completed one of these classes then the remaining PHYS 3### course locations should be treated as ASD/G-course to complete the BA liberal arts requirements (8-ASD and 8-G-course).

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- ⁴Two cognates must be of 2000 level or above. Three cognates must be of 3000 level or above, two of which must be from the following list:
 - PHYS 3120 Electrical Circuits [Q2]
 - PHYS 3030 Biomedical Physics
 - PHYS 3350 Mathematical Physics [Q1]
 - PHYS 3240 Modeling and Simulation
- **OR** any of the following, provided it was not taken as a non-Cognate course:
 - PHYS 3110 Electronics [Spring Even and Odd Years]
 - PHYS 3340 Optics [Q2] [Spring Even Years]
 - PHYS 3370 Electricity and Magnetism [Fall Odd Years]
 - PHYS 3390 Introduction to Quantum Mechanics [Even Years– 3rd or 4th year]
 - PHYS 3380 Thermal Physics [Q2] [Spring Odd Years].
- ⁵Four (4) semesters of PHYS 2600 Physics Colloquium, four (4) semesters of PHYS 4620 Research Methods, and one (1) semester of PHYS 4800 Undergraduate Thesis **OR** PHYS 4900 Internship must be completed.

ADDITIONAL INFORMATION

- **FIRST (FRST).** All newly admitted freshmen or transfer students with 15 or fewer credits are required to fulfill the University's first-year competency requirement. The requirement may be met by demonstrating competency on the placement tests, or by passing, with a grade of C or better, all FRST courses: FRST 1101 – College Writing, 1002 – Critical Thinking and Reading, and 1103 – Quantitative Reasoning into which students have been placed. Students enrolled in FRST 1100 – Developmental Mathematics must receive a grade of C or better, and then enroll in and receive a grade of C or better in FRST 1103 to demonstrate competency. Full-time students must register for all required FRST courses in their first semester. Depending on time to completion of competency requirements, some students may need additional time for degree completion. *Note-* certain FRST courses also meet the requirements of the General Studies course distribution categories.
- **General Studies.** B.A. students must complete 64 credits of General Studies with the distribution requirement of: 8 GAH, 4 GEN, 4 GIS, 8 GNM, 8 GSS and 32 ASD (At Some Distance). B.S. students must complete 48 credits of General Studies with the distribution requirement of: 8 GAH, 4 GEN, 4 GIS, 8 GNM, 8 GSS and 16 ASD. See 2022-2023 Bulletin for more information.
- **W1/W2- Writing requirement.** Students are required to complete (C or better) four Writing intensive (WI/W2) courses. One W1 is required in the first year and an additional three W1 or W2 with one in the upper-level division (3000-level or higher). W1/W2 courses can be found in General Studies or Program/cognate courses depending on major.
- **Q1/Q2- Quantitative Reasoning.** Students are required to complete (D- or Better) three Q1/Q2 courses. One Q1 in the first year and at least one Q2. Q1/Q2 courses may be found in General Studies or Program/cognate course depending on major.
- **R1/R2- Race and Racism.** Students are required to pass one R1 and another R1/R2 course. R1 (C or better), R2 (D or better). R1/R2 courses may be found in General Studies or Program/cognate courses depending on major.
- **Minor program.** Students may select a Minor program of study, in consultation with their preceptor. Minor courses would replace some of the ASD or Program/cognate courses in the Degree Map.
- **Attributes (AHVI/Q, W and R).** A course may fulfill multiple attributes and/or other requirements. Therefore, many attributes can be fulfilled without taking additional courses. Attributes can be taken in any order except for the first-year requirements. Many course choices are available to fulfill an attribute.
- **Transfer students.** Transfer students must take 25% of their remaining credits in General Studies with a GIS course required (The 25% Rule). Depending on transferred courses, individual attribute requirements may be met (AHVI/Q, W and R) but will be evaluated on transfer. For students transferring 64 credits or more, the General Studies course requirement is lowered to 16 credits (i.e. only four G courses are required, but all students must take 4 credits in the GIS category, the other three G courses can be any combination of the G course categories). Up to two W1 and two Q1 courses can be transferred, all W2 and Q2 courses need to be taken at Stockton. Up to one R1 or R2 can be transferred. Consult with an academic advisor for careful guidance.

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- **Second degree.** Students with an earned degree will be exempt from all general studies course requirements (i.e. G courses, ASD) and AHVI/Q, W and R attributes.