

Physics with Secondary Education Bachelor of Science

Total Semester Hours: 104 Hours Per Semester: 18

Major Academic Plan (MAP) for Catalog Year 2022-2023

The catalog is the final authority on CATC and major requirements; this is intended as a tool for planning purposes. Student course sequencing may vary depending on course offerings and other variables.

Fall Semester 1 PHYS 231 Introductory Physics I ^{1, F} MATH 231 Calculus I ^{1*} or MATH 233 Calculus I B (2) ¹ EDUC 101 The Teaching Profession (2) ⁶ <i>CORE 101: First Year Seminar</i> <i>First Year CATC options-</i> <ul style="list-style-type: none"> ▪ AHS 101: Wellness (2) ▪ COMM 101: Oral Comm (2) ▪ ENGW 103: First-Year Writing 	Spring Semester 1 PHYS 232 Introductory Physics II ^{S*} MATH 232 Calculus II* or MATH 234 Calculus II B (2)* PHYS 294 Physics for the Future (2) EDUC 135 School and Society (2) ⁶ EDUC 136 Teaching Diverse Students (2) ⁶ EDUC 136L Cross-cultural Practicum (1) ⁶ <i>First Year CATC Options</i>	Summer 1 <i>Consider study, internship or research options –Wheaton In summer program, WIN (HoneyRock), Wheaton in the Black Hills, non-major internship, summer research or other options that provide work experience, build your resume, or grow you personally.</i>
Fall Semester 2 PHYS 334 Computer Modeling (2) ^{F*} MATH 333 Differential Equations* CHEM 231 General Chemistry I ^F <i>Language Core Competency</i> <i>BITH 211/ARCH 211: Old Testament</i>	Spring Semester 2 PHYS 331 Spacetime and Quanta ^{S*} MATH 245 Linear Algebra* MATH 331 Vector Calculus (2)* EDUC 225 Learning and Development ¹ EDUC 225L Teaching Aiding Practicum (1) <i>Language Core Competency</i>	Summer 2 <i>Consider Wheaton in the Black Hills course: PHYS 305 Dakota Skies^{Su, 1,2, 4}</i> <i>Consider summer study.</i>
Fall Semester 3 PHYS 345 Data Analysis and Presentation (2) PHYS 351 Analog Electronics (2) ^{F*} EDUC 306 Classroom Communication and Curriculum Integration ^{F*} EDUC 305 Learning Differences (2) <i>Language Core Competency</i> <i>BITH 213/ARCH 213: New Testament</i>	Spring Semester 3 PHYS 341 Analytical Mechanics ^{S#*} LING 326 English Language Methods for Content Area Teachers (2) ^S EDUC 305L Learning Differences Practicum (1) ⁵ EDUC 324L Methods Practicum (1) ⁵ SCI 321 Science for Middle and High School Teachers (2) ^{S*} SCI 325 Methods of Teaching Middle Grade Science (2) ^{S*} <i>Visual and Performing Arts (2)</i>	Summer 3 <i>Consider Wheaton in the Black Hills course: PHYS 305 Dakota Skies^{Su, 1,2, 4}</i> <i>Consider summer study.</i>

Fall Semester 4 BIOL 201 Topics in Life Science ^F or BIOL 241 Organization of Life ^F Upper Division PHYS requirement ³ ASTR 305 Astronomy ^{1, 4} , if not complete <i>BITH 315: Christian Thought</i> <i>Thematic Core Course</i>	Spring Semester 4 PHYS 494 Senior Seminar (2) ^{S*} <i>Thematic Core (4-8)</i> <i>Advanced Integrative Seminar*</i> <i>Complete Christ the Core Curriculum</i>	Summer 4 <i>Consider summer study.</i>
Fall Semester 5 EDUC 494 Senior Seminar (2) EDUC 496 Student Teaching (9) EDUC 497 Philosophical Foundations of Education (3) ¹	Spring Semester 5	Summer 5

Notes or Special Guidance for Majors:

*Course has prerequisite

^F Fall only course

^S Spring only course

^{Su} Summer only course

Offered every other year

¹ Classes that meet CATC Thematic Core tags: PHYS 231 (SP), MATH 231 or MATH 233 (AAQR). Education classes that meet CATC Thematic Core tags: EDUC 225 (SI) and EDUC 497 (with EDUC 135 taken at Wheaton) meets the PI theme. Also see footnote 2 for how to meet the SP or SIP tag with choices in the major. A maximum of 3 themes may be met with courses also counting for the major.

² Select one from PHYS 305 (SP) or ASTR 305 (SIP)

³ Select one from the following set of three upper level physics courses: PHYS 342 Electromagnetic Theory ^{F##}, PHYS 344 Quantum Mechanics ^{F##}, or PHYS 359 Thermodynamics ^{S##}.

⁴ Students have a choice between ASTR 305 (SIP) and PHYS 305 (SP). PHYS 305 is taken at the Black Hills Science Station during the summer.

⁵ EDUC 305L and 324L must be taken in the semester prior to student teaching.

⁶ While EDUC 135, 136 and 136L must be taken together, EDUC 101 can be taken separately. All of these courses are offered in the fall and the spring and should be completed in the first year.

- All PHYS courses are offered Fall only or Spring only in the semester indicated. SCI 321 and SCI 325 are Spring only. EDUC 306 is Fall only.