

Physics with Secondary Education Bachelor of Science

Total Semester Hours: Hours Per Semester: 16-18
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Major Academic Plan (MAP) for Catalog Year 2020-2021

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	Spring Semester 1	Summer 1
<p>PHYS 231 Introductory Physics I¹ MATH 231 Calculus I^{1*} or MATH 233 Calculus I B (2)¹</p> <p><i>CORE 101: First Year Seminar</i> <i>First Year CATC options-</i></p> <ul style="list-style-type: none"> ▪ <i>AHS 101: Wellness (2)</i> ▪ <i>COMM 101: Oral Comm (2)</i> ▪ <i>ENGW 103: First-Year Writing</i> 	<p>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) EDUC 136 Teaching Diverse Students (2) EDUC 136L Cross-cultural Practicum (1)</p> <p><i>First Year CATC Options</i></p>	<p><i>Consider study, internship or research options –Wheaton</i> <i>In summer program, WIN (HoneyRock), non-major internship, summer research or other options that provide work experience, build your resume, or grow you personally.</i></p>
<p>Fall Semester 2</p> <p>PHYS 334 Computer Modeling (2)^{F*} MATH 333 Differential Equations* CHEM 231 General Chemistry I</p> <p><i>BITH 211/ARCH 211: Old Testament Language Core Competency</i></p>	<p>Spring Semester 2</p> <p>PHYS 331 Spacetime and Quanta^{S*} MATH 245 Linear Algebra* MATH 331 Vector Calculus (2)* EDUC 225 Learning and Development EDUC 225L Teaching Aiding Practicum (1)</p> <p><i>Language Core Competency</i> <i>Visual and Performing Arts (2)</i></p>	<p>Summer 2</p> <p>BIOL 241 Organization of Life^{2, 4} PHYS 305 Dakota Skies^{S, 2, 4}</p>
<p>Fall Semester 3</p> <p>Upper Division PHYS requirement³ PHYS 345 Data Analysis and Presentation (2) PHYS 351 Analog Electronics (2)^{F*} EDUC 306 Classroom Communication and Curriculum Integration</p> <p><i>BITH 213/ARCH 213: New Testament Advanced Integrative Seminar*</i> <i>Visual and Performing Arts (2)</i></p>	<p>Spring Semester 3</p> <p>PHYS 341 Analytical Mechanics^{S*} EDUC 305 Learning Differences (2) 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</p> <p><i>BITH 315: Christian Thought Thematic Core</i> <i>Visual and Performing Arts (2)</i></p>	<p>Summer 3</p> <p><i>Consider study, internship or research options –Wheaton</i> <i>In summer program, WIN (HoneyRock), non-major internship, summer research or other options that provide work experience, build your resume, or grow you personally.</i></p>

Fall Semester 4	Spring Semester 4	Summer 4
EDUC 405 Middle Grade Practicum (1) ⁴ EDUC 494 Senior Seminar (2) EDUC 496 Student Teaching (9) EDUC 497 Philosophical. Foundations of Education (3)	PHYS 494 Senior Seminar (2) ^{S*} PHYS 359 Thermodynamics ^{S#*} <i>Thematic Core (8-12)</i> <i>Complete Christ the Core Curriculum</i>	

Notes or Special Guidance for Majors:

* Course has prerequisite

^F Fall only course

^S Spring only course

[#] Offered every other year

¹ Classes that meet CATC Thematic Core tags: PHYS 231 (SP), MATH 231 or MATH 233 (AAQR). Also see footnote 2 for how to meet the SIP tag with choices in the major.

² Select one from PHYS 305 (SP) or ASTR 305 (SIP) and one from BIOL 201 (SIP, SP) or BIOL 241 (SP).

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 Taken at the Black Hills Science Station

⁵ EDUC 305L and 324L must be taken in the semester prior to student teaching. EDUC 405 is required ONLY if teacher aiding was NOT completed in a middle school and must be completed prior to student teaching but is included in the course registration for the student teaching semester.

- 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.