

# Physics: Applied Physics, Bachelor of Science

Total Major hours: 36  
Suggested hours per semester: 14-16

## 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	Spring Semester 1	Summer 1
<p>PHYS 231 Introductory Physics I<sup>1</sup> MATH 231 Calculus I<sup>1*</sup> or MATH 233 Calculus I B (2)<sup>1*</sup></p> <p><i>CORE 101: First Year Seminar</i> <i>First Year CATC options-</i></p> <ul style="list-style-type: none"> <li>▪ AHS 101: Wellness (2)</li> <li>▪ COMM 101: Oral Comm (2)</li> <li>▪ ENGW 103: First-Year Writing</li> <li>▪ Language Core Competency</li> </ul>	<p>PHYS 232 Introductory Physics II<sup>5*</sup> PHYS 294 Physics for the Future (2)<sup>5</sup> MATH 232 Calculus II* or MATH 234 Calculus II B (2)<sup>1*</sup></p> <p><i>First Year CATC options</i> <i>Language Competency</i></p>	<p><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></p>
<p><b>Fall Semester 2</b></p> <p>PHYS 334 Computer Modeling of Physical Systems (2)<sup>F*</sup> ENGR 201<sup>2, 4, *</sup> MATH 333 Differential Equations*</p> <p><i>BITH 211/ARCH 211: Old Testament Thematic Core Course</i></p>	<p><b>Spring Semester 2</b></p> <p>PHYS 341 Analytical Mechanics<sup>5*</sup> or ENGR 202 Dynamics<sup>2*</sup> PHYS 331 Spacetime and Quanta<sup>5*</sup> Math 245 Linear Algebra* Math 331 Vector Calculus (2)*</p> <p><i>Visual and Performing Arts (2)</i></p>	<p><b>Summer 2</b></p> <p><i>Consider summer coursework</i></p>
<p><b>Fall Semester 3</b></p> <p>PHYS 345 Data Analysis and Presentation (2) *<sup>F</sup> CHEM 231 General Chemistry I</p> <p>Consider semester abroad – GPS</p> <p><i>BITH 213/ARCH 213: New Testament Thematic Core Course</i></p>	<p><b>Spring Semester 3</b></p> <p>PHYS 343 Experimental Physics (2)<sup>3*</sup> ENGR Elective<sup>2</sup></p> <p>Consider semester abroad – GPS</p> <p><i>BITH 315: Christian Thought*</i> <i>Advanced Integrative Seminar*</i> <i>Visual and Performing Arts (2)</i></p>	<p><b>Summer 3</b></p> <p><i>Consider summer coursework</i></p>
<p><b>Fall Semester 4</b></p> <p>PHYS 351 Analog Electronics (2)<sup>F*</sup></p> <p><i>Thematic Core Course</i></p>	<p><b>Spring Semester 4</b></p> <p>PHYS 494 Senior Capstone (2)* or ENGR 394 Engineering Ethics Capstone (2)</p> <p><i>Complete CATC Coursework</i></p>	<p><b>Summer 4</b></p>

### Notes or Special Guidance for Majors:

\*Course has prerequisite

<sup>F</sup> Fall only course

<sup>5</sup> Spring only course

#Offered every other year

<sup>1</sup> Classes that meet CATC tags: PHYS 231 (SP), MATH 231 (AAQR)

<sup>2</sup> Select any two 4-credit courses with the ENGR prefix. ENGR 202 Dynamics may not be one of the 4-credit ENGR courses if it is also substituting for PHYS 341.

<sup>3</sup> PHYS 343 or an approved research or internship experience.

<sup>4</sup>ENGR 201 is strongly recommended.

-PHYS 343 Experimental Physics is offered both Fall and Spring. All other major courses are offered Fall only or Spring only in the semester indicated. Major courses in the 3<sup>rd</sup> and 4<sup>th</sup> years may be taken in any order and in either year.

-Seven CATC Themes are not covered by major requirements or Visual and Performing Arts but some of these satisfy 2 Themes and Advanced Integrative Seminar satisfies at least one Theme. Students are encouraged to take at least 1 double-tagged Thematic Core courses.