

# Physics: Applied Physics, Bachelor of Science

## Major Academic Plan (MAP) for Catalog Year 2023-2024

Total Major hours: 60  
Suggested hours per semester: 14-16

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.

<b>Fall Semester 1</b>  <b>PHYS 231 Introductory Physics I<sup>1</sup></b> <b>MATH 235 Calculus I<sup>1*</sup></b>  <i>CORE 101: First Year Seminar</i> <i>First Year CATC options-</i> <ul style="list-style-type: none"> <li>▪ <i>COMM 101: Oral Comm (2)</i></li> <li>▪ <i>ENGW 103: First-Year Writing</i></li> <li>▪ <i>Language Core Competency</i></li> </ul>	<b>Spring Semester 1</b>  <b>PHYS 232 Introductory Physics II<sup>S*</sup></b> <b>PHYS 294 Physics for the Future (2)<sup>S</sup></b> <b>MATH 236 Calculus II<sup>*</sup></b>  <i>First Year CATC options</i> <i>Language Competency</i>	<b>Summer 1</b>  <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>
<b>Fall Semester 2</b>  <b>PHYS 334 Computer Modeling of Physical Systems (2)<sup>F*</sup></b> <b>ENGR 201<sup>2, 4, *</sup></b> <b>MATH 333 Differential Equations<sup>*</sup></b>  <i>BITH 211/ARCH 211: Old Testament Thematic Core Course</i>	<b>Spring Semester 2</b>  <b>PHYS 341 Analytical Mechanics<sup>S**</sup> or ENGR 202 Dynamics<sup>2*</sup></b> <b>PHYS 331 Spacetime and Quanta<sup>S*</sup></b> <b>Math 237 Calculus III<sup>*</sup></b>  <i>Visual and Performing Arts (2)</i>	<b>Summer 2</b>  <i>Consider summer coursework</i>
<b>Fall Semester 3</b>  <b>PHYS 351 Analog Electronics (2)<sup>F**</sup></b> <b>CHEM 231 General Chemistry I</b> <b>Math 245 Linear Algebra<sup>*</sup></b>  Consider semester abroad – GPS  <i>BITH 213/ARCH 213: New Testament Thematic Core Course</i>	<b>Spring Semester 3</b>  <b>PHYS 343 Experimental Physics (2)<sup>S3*</sup></b> <b>ENGR Elective<sup>2</sup></b>  Consider semester abroad – GPS  <i>BITH 315: Christian Thought*</i> <i>Advanced Integrative Seminar*</i> <i>Visual and Performing Arts (2)</i>	<b>Summer 3</b>  <i>Consider summer coursework</i>
<b>Fall Semester 4</b>  <b>PHYS 345 Data Analysis and Presentation (2) <sup>*F#</sup></b>  <i>Thematic Core Course</i>	<b>Spring Semester 4</b>  <b>PHYS 494 Senior Capstone (2)<sup>*</sup> or ENGR 494 Engineering Ethics Capstone (2)</b>  <i>Complete CATC Coursework</i>	<b>Summer 4</b>

### Notes or Special Guidance for Majors:

\*Course has prerequisite

<sup>F</sup> Fall only course

<sup>s</sup> Spring only course

<sup>#</sup>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 at 200 level or above. 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 345 is offered Fall only, in even years. PHYS 351 is offered Fall only, in odd years. PHYS 341 is offered Spring only, in odd years. PHYS 343 Experimental Physics is offered Spring every year. 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.