

# Physics, Bachelor of Science

Total Semester Hours: 52  
Hours Per Semester: 16-18

## 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.

<p><b>Fall Semester 1</b> 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><b>Spring Semester 1</b> PHYS 232 Introductory Physics II<sup>5*</sup> MATH 232 Calculus II* or MATH 234 Calculus II B (2)*</p> <p><i>First Year CATC Options</i></p>	<p><b>Summer 1<sup>3</sup></b></p> <p><i>Consider study, internship or research options –Wheaton 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><b>Fall Semester 2</b> PHYS 334 Computer Modeling (2)<sup>F*</sup> PHYS 351 Analog Electronics (2)<sup>F*</sup> MATH 333 Differential Equations*</p> <p><i>BITH 211/ARCH 211: Old Testament Thematic Core</i></p>	<p><b>Spring Semester 2</b> PHYS 341 Analytical Mechanics<sup>5*</sup> PHYS 331 Spacetime and Quanta<sup>5*</sup> MATH 245 Linear Algebra* MATH 331 Vector Calculus (2)*</p> <p><i>COMM 101: Oral Comm (2)</i> <i>Visual and Performing Arts (2)</i></p>	<p><b>Summer 2<sup>3</sup></b></p> <p><i>Consider study, internship or research options –Wheaton 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><b>Fall Semester 3</b> PHYS 342 Electromagnetic Theory<sup>F#*</sup> or PHYS 344 Quantum Mechanics<sup>F#*</sup> CHEM 231 General Chemistry I</p> <p>Consider semester abroad – GPS</p> <p><i>Advanced Integrative Seminar?</i> <i>Visual and Performing Arts (2)</i></p>	<p><b>Spring Semester 3</b> PHYS Elective (2 or 4)<sup>3</sup> PHYS 343 Experimental Physics (2)<sup>5, 2*</sup></p> <p>Consider semester abroad – GPS</p> <p><i>BITH 213/ARCH 213: New Testament Advanced Integrative Seminar Thematic Core</i> <i>Visual and Performing Arts (2)</i></p>	<p><b>Summer 3<sup>3</sup></b></p> <p><i>Consider study, internship or research option –Wheaton 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><b>Fall Semester 4</b> PHYS 342 Electromagnetic Theory<sup>F#*</sup> or PHYS 344 Quantum Mechanics<sup>F#*</sup> PHYS 345 Data Analysis and Presentation (2)<sup>F#*</sup> Course Elective</p> <p><i>BITH 315: Christian Thought* Thematic Core</i></p>	<p><b>Spring Semester 4</b> PHYS 494 Senior Capstone (2)<sup>5*</sup></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>S</sup> Spring only course

<sup>#</sup> Offered every other year

<sup>1</sup>Classes that meet CATC Thematic Core tags: PHYS 231 (SP), MATH 231 or MATH 233 (AAQR)

<sup>2</sup>PHYS 343<sup>S,3\*</sup> or an approved research or internship experience.

<sup>3</sup>PHYS Elective 2-4 hours. Choose from the following: PHYS 311\*, PHYS 352\*\*, PHYS 354\*\*, PHYS 359\*, PHYS 361\*\*, PHYS 362\*\*, PHYS 366\*, or PHYS 367\*\*. PHYS 359 Thermodynamics\*, internships and research options are strongly recommended for students planning on graduate physics studies.

-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.