UNIVERSITY OF NOTRE DAME | PHYSICS AND ASTRONOMY

## Bachelor of Science with a Major in Physics in Medicine

Students following the physics in medicine major program will gain a basic broad understanding of the concepts of physics, as well as a foundation for medical school. The program requires completion of 77 science credits total.

Students following the **Physics in Medicine** major are not allowed to add concentrations; the major program is already designed to accommodate the special interests of those students intending careers in medicine.

### **Requirements for the Core Physics in Medicine Major** (32.5 Credits)

| Course Title | Course Number | Credits | Semester Offered | Check (year) | Alternate** |
|---|---|---|---|---|---|
| Physics A Lab: Mechanics | 10411/11411 (10310/11310) | 4 | Fall | FY | |
| Physics B Lab: Electricity & Mag | 10422/11422 (10320/11320) | 4 | Spring | FY | |
| Physics C: Thermo & Relativity | 20433 | 3 | Fall | Soph | |
| Intro Circuitry and Electronics* | 20430 | 1.5 | Fall | Soph | |
| Math Methods in Phys I/Tutorial | 20451/22451 | 3.5 | Fall | Soph | Jr |
| Sophomore Seminar | 23411 | 1 | Fall | Soph | |
| Math Methods in Phys II/Tutorial | 20452/22452 | 3.5 | Spring | Soph | Jr |
| Intermediate Mechanics | 20454 | 3 | Spring | Soph | Jr |
| Physics D: Modern | 20444 | 3 | Spring | Soph | |
| Electricity & Magnetism | 30471 | 3 | Fall | Jr | Jr |
| Quantum Mechanics I | 40453 (30465, 50602, 50501 or 50701) | 3 | Fall | Sr | |

**Intro Circuitry and Electronics is considered a co-requisite of General Physics C-M. General Physics C-M and Modern Physics I are a continuous 1-year sequence and have to be started fall of sophomore year.*

***Alternate possibility - less recommended*

### **Non-Physics Courses** (35.5 Credits)

| Course Title | Course Number | Credits | Semester Offered | Check (year) | |
|---|---|---|---|---|---|
| Intro Chemical Principles/Lab | CHEM 10171/11171 (CHEM 10117 or 10181) | 4 | Fall | FY | ☐ |
| Calculus I/Tutorial | MATH 10550/12550 (MATH 10850) | 4 | Both | FY | ☐ |
| Organic Struct & Mechanisms | CHEM 10172/11172 (CHEM 10118 or 10182) | 4 | Spring | FY | ☐ |
| Calculus II/Tutorial | MATH 10560/12560 (MATH 10860) | 4 | Both | FY | ☐ |
| Biology I: Big Questions/Lab | BIOS 10171/11173 | 4 | Fall | Soph | ☐ |
| Biology II: Molec to Ecos/Lab | BIOS 10172/11174 | 4 | Spring | Soph | ☐ |
| Organic Reactions & Apps | CHEM 20273/21273 (CHEM 20223 or 20283) | 4 | Fall | Soph | ☐ |
| Calculus III/Tutorial | MATH 20550/22550 (MATH 20850 & 20860) | 3.5 | Fall | Soph | ☐ |
| Advanced General Chemistry | CHEM 20274/21274 (CHEM 20224 or 20284) | 4 | Both | Soph | ☐ |

**Courses in parenthesis may substitute as indicated, though students are encouraged not to mix and match (for example, if you start with the math sequence you should stay with it if possible).*

In addition, PHIM majors must complete 9 credits of Science Electives to be chosen from the following list:

| Course Title | Course Number | Credits | Semester Offered | Check |
|---|---|---|---|---|
| Medical Physics* | PHYS 40371 | 3 | Fall | ☐ |
| Physics of Cells | PHYS 50401 | 3 | Fall | ☐ |
| Fundamentals of Genetics | BIOS 20303 | 3 | Spring | ☐ |
| Vertebrate Physiology | BIOS 30344 | 3 | Both | ☐ |
| Cellular Biology | BIOS 30341 | 3 | Both | ☐ |
| Principles of Biochemistry | CHEM 40420 | 3 | Both | ☐ |

** Additional options available*

Other college and university requirements to be completed, one of which must be a University seminar:

| Requirement | Check |
|---|---|
| Foreign Language (Intermediate level) | ☐ |
| First-Year Composition | ☐ |
| Philosophy Requirement (2 classes) | ☐ |
| Theology Requirement (2 classes) | ☐ |
| History Requirement | ☐ |
| Social Sciences Requirement | ☐ |
| Literature/Fine Arts Requirement | ☐ |

**Science Requirements**

Not all science courses will count toward degree credit or science elective credit for science majors. The survey science courses offered as option for non-science majors for their University science requirement will not count as a science elective or toward the minimum science credit hour requirement.

All College of Science courses offered by a major program must be taken at the University of Notre Dame. If a student wants to take a course outside Notre Dame for credit toward the Notre Dame degree, prior approval of the dean's office must be obtained. This does not apply to the courses taken by a transfer student prior to attending Notre Dame.

**Language Requirements**

The College of Science requires language proficiency through intermediate level in one of the following languages: Arabic, Chinese, French, German, Greek, Irish, Italian, Japanese, Korean, Latin, Portuguese, Russian, and Spanish. Students may complete the language requirement by either completing a course taught at intermediate level or by demonstrating proficiency through placement examination.

**Study Abroad**

The spring semester of the Junior year is the preferred time for a semester abroad or for taking Literature and Fine Arts electives.

***Ask about the Physics honors track!**