

**Physics Honors Major Courses (66- 68 credits)**

**Required Major Courses (51 - 52 credits)**

- \_\_\_\_\_ (4) PHYS 17200 Modern Mechanics - (*also satisfies Science Selective for core and CoS teambuilding experience requirement*)<sup>CC</sup>
- \_\_\_\_\_ (4) PHYS 27200 Electric and Magnetic Interactions (*also satisfies Science Selective for core*)<sup>CC</sup>
- \_\_\_\_\_ (4-5) Calculus III Option – Select from MA 26100, MA 27101 (*satisfies Quantitative Reasoning for core*)
- \_\_\_\_\_ (3) PHYS 30600 (fall) Math Methods I
- \_\_\_\_\_ (3) PHYS 30700 (spring) Math Methods II
- \_\_\_\_\_ (1) PHYS 34000 - Modern Physics Lab
- \_\_\_\_\_ (4) PHYS 34400 (fall) Modern Physics
- \_\_\_\_\_ (3) PHYS 41000 (fall)- Physical Mechanics I Honors
- \_\_\_\_\_ (2) PHYS 41100 (spring) Physical Mechanics II Honors
- \_\_\_\_\_ (4) PHYS 41600 (fall) Thermal & Statistical Physics Honors
- \_\_\_\_\_ (3) PHYS 42200 (spring) Waves & Oscillations
- \_\_\_\_\_ (3) PHYS 43000 (spring) Electricity & Magnetism I Honors
- \_\_\_\_\_ (2) PHYS 43100 (fall) Electricity & Magnetism II Honors
- \_\_\_\_\_ (2) PHYS 45000 Intermediate Laboratory
- \_\_\_\_\_ (3) PHYS 46000 (fall) Quantum Mechanics I Honors
- \_\_\_\_\_ (3) PHYS 46100 (spring) Quantum Mechanics II Honors
- \_\_\_\_\_ (3) PHYS 59300 Independent Research

**Major Selective\* - (15-16 credits)**

- \_\_\_\_\_ (3) PHYS/ASTR Selective ≥500 level
- \_\_\_\_\_ (3) PHYS/ASTR Selective ≥500 level
- \_\_\_\_\_ (3-4) Adv Lab Option: Select From PHYS 53600 or **PHYS 57000-Computational Biomolecular Phys** (spring) or PHYS 58000 (fall)
- \_\_\_\_\_ (3) Science/Engineering Selective ≥300 level ( could be met by CoS statistics requirement)
- \_\_\_\_\_ (3) Science/Engineering Selective ≥300 level (could be met by CoS Great Issues requirement)

**Other Departmental /Program Course Requirements (37-66 credits)**

- \_\_\_\_\_ (3-4) First Year Composition Option (*satisfies Written Communication and Information Literacy for core*)
- \_\_\_\_\_ (0-3) Technical Writing Option (*Select courses COULD satisfy Oral Communication for core*)
- \_\_\_\_\_ (0-3) Technical Presenting Option (*Select courses COULD satisfy Oral Communication for core*)
- \_\_\_\_\_ (0-4) Teambuilding and Collaboration Experience
- \_\_\_\_\_ (0-4) Language I Option
- \_\_\_\_\_ (0-4) Language II Option
- \_\_\_\_\_ (0-4) Language III/Culture/Diversity Option (*Select courses COULD satisfy Human Cultures Humanities for core*)
- \_\_\_\_\_ (3) Great Issues Option (*satisfies one of the Science/Engineering requirements for Physics Selective*)
- \_\_\_\_\_ (0-3) Multidisciplinary Experience (*Select courses could satisfy Science, Technology & Society Selective for core*)
- \_\_\_\_\_ (4) CHM 11500 - General Chemistry I - (*satisfies Science Selective for core*)
- \_\_\_\_\_ (4) CHM 11600 - General Chemistry II (*satisfies Science Selective for core*)
- \_\_\_\_\_ (4-5) Calculus I Option – Select from MA 16100, MA 16500 (*satisfies Quantitative Reasoning for core*)
- \_\_\_\_\_ (4-5) Calculus II Option – Select from MA 16200, MA 16600 (*satisfies Quantitative Reasoning for core*)
- \_\_\_\_\_ (3) Statistics Option
- \_\_\_\_\_ (3-4) Computing Option
- \_\_\_\_\_ (3) General Education I Option (*Select courses could satisfy Human Cultures Humanities for core*)
- \_\_\_\_\_ (3) General Education II Option (*Select courses could satisfy Human Cultures Humanities for core*)
- \_\_\_\_\_ (3) General Education III Option (*Select courses could satisfy Humanities Behavioral/Social Science for core*)

**Free Electives (1 – 17 credits)**

\_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_ ( ) \_\_\_\_\_

**University Core Requirements**

|  |                          |       |   |                          |       |
|--|--------------------------|-------|---|--------------------------|-------|
| Human Cultures Humanities                | <input type="checkbox"/> | _____ | Science, Technology & Society Selective | <input type="checkbox"/> | _____ |
| Human Cultures Behavioral/Social Science | <input type="checkbox"/> | _____ | Written Communication                   | <input type="checkbox"/> | _____ |
| Information Literacy                     | <input type="checkbox"/> | _____ | Oral Communication                      | <input type="checkbox"/> | _____ |
| Science Selective                        | <input type="checkbox"/> | _____ | Quantitative Reasoning                  | <input type="checkbox"/> | _____ |
| Science Selective                        | <input type="checkbox"/> | _____ |   |                          |       |

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**The student is ultimately responsible for knowing and completing all degree requirements.**

**Degree Works is knowledge source for specific requirements and completion**

## Physics Honors

### Suggested Arrangement of Courses:

| Credits      | Fall 1st Year                               | Prerequisite | Credits      | Spring 1st Year                             | Prerequisite                      |
|--------------|---|--------------|--------------|---|-----------------------------------|
| 4            | PHYS 17200 (Honors sections)* <sup>cc</sup> | ALEKS 85%    | 4            | PHYS 27200 (Honors sections)* <sup>cc</sup> | PHYS 17200 +<br>Coreq:Calculus II |
| 4-5          | Calculus I Option *                         | ALEKS 85%    | 4            | CHM 11600*                                  | CHM 11500                         |
| 4            | CHM 11500*                                  | ALEKS 75%    | 4-5          | Calculus II Option *                        | Calculus I C- or higher           |
| 3-4          | First Year Composition Option               |              | 3-4          | Language I Option                           |                                   |
| 0            | Teambuilding and Collaboration Experience   |              |              |   |                                   |
| <b>15-17</b> |   |              | <b>15-17</b> |   |                                   |

| Credits      | Fall 2nd Year       | Prerequisite                 | Credits      | Spring 2nd Year                          | Prerequisite                     |
|--------------|---------------------|------------------------------|--------------|--|----------------------------------|
| 3            | PHYS 30600          | PHYS 272 +coreq Calculus III | 3            | PHYS 30700                               | PHYS 272 +coreq MA 261           |
| 1            | PHYS 34000          | coreq Phys 344               | 3            | PHYS 42200                               | PHYS 272                         |
| 4            | PHYS 34400          | PHYS 272 + coreq CalculusIII | 3 - 4        | Language III/Culture/Diversity Option    | Language 102/ usually no pre-req |
| 4 - 5        | Calculus III Option | Calculus II C- or higher     | 3            | Statistics Option                        | Prerequisites may vary           |
| 3 - 4        | Language II Option  | Language 101                 | 3            | Science/Engineering Selective $\geq 300$ | Prerequisites may vary           |
|              |                     |                              | 1            | Free Elective (PHYS 23500)               |                                  |
| <b>15-17</b> |                     |                              | <b>16-17</b> |  |                                  |

| Credits        | Fall 3rd Year   | Prerequisite                 | Credits      | Spring 3rd Year                           | Prerequisite  |
|----------------|---|------------------------------|--------------|---|---|
| 3              | PHYS 41000  | PHYS 272 + coreq CalculusIII | 2            | PHYS 41100                                | (PHYS 310 or 410) C- or better                                      |
| 3              | PHYS 46000  | PHYS 344 + coreq PHYS410     | 3            | PHYS 46100                                | (PHYS 460 or 360 or 550) C- or better                               |
| 2              | PHYS 45000  | PHYS 42200                   | 3            | PHYS 43000                                | PHYS 272 + coreq CalculusIII and (PHYS 306 or MA 362)) C- or better |
| 3-6            | Technical Writing Option and Technical Presenting Option (COM 21700*) |                              | 3            | General Education II Option (Humanities)* |   |
| 3              | General Education I Option(Humanities)*                               |                              | 3 - 4        | Computing Option (CS 15800)               | Calculus I coreq  |
| 1              | Free Elective   |                              | 1            | Free Elective                             |   |
| <b>15 - 18</b> |   |                              | <b>15-16</b> |   |   |

| Credits   | Fall 4th Year                            | Prerequisite                                  | Credits      | Spring 4th Year                                       | Prerequisite           |
|-----------|--|---|--------------|---|------------------------|
| 4         | PHYS 41600                               | Coreq (PHYS 410 and 430 and 460) C- or better | 3-4          | Adv Lab Option:                                       | Prerequisites may vary |
| 2         | PHYS 43100                               | PHYS 430 – C- or better                       | 3            | PHYS/ASTR Selective $\geq 500$                        | Prerequisites may vary |
| 3         | PHYS 59300                               |   | 3            | PHYS/ASTR Selective $\geq 500$                        | Prerequisites may vary |
| 3         | Science/Engineering Selective $\geq 300$ | Prerequisites may vary                        | 3            | General Education III Option (Behav./Social Science)* |                        |
| 3         | Great Issues Option                      | Jr/Sr Standing; may require COM or ENGL       | 2            | Multidisciplinary Experience (STS)*                   |                        |
|           |  |   | 1            | Free Elective   |                        |
| <b>15</b> |  |   | <b>15-16</b> |   |                        |

<sup>cc</sup> Identified as a critical course. Student should earn minimum of a B- see advisor for further details.

\* Satisfies a University Core Requirement. Courses in ( ) are recommended.

**120 semester credits required for Bachelor of Science degree.**

**3.0 Graduation GPA required for Bachelor of Science degree.**

**3.0 average in PHYS/ASTR classes required to graduate.**

**No more than one C grade (i.e., C+, C, or C-) is allowed in all physics courses taken**

**No grade of D+ or worse is allowed in any course.**

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