PHYSICS BS—no concentration
Fall 2019 – Spring 2020

CONTACT INFORMATION
- Honors College Advisor: Tahmina Rahman (trahman5@gmu.edu)
- Department Chair: Paul So (paso@gmu.edu)
- Academic Administrative Specialist: Stephanie Kuhta (smonk@gmu.edu)
- Physics Department Undergraduate Advisors:
  Entering First-Year or Transfer
    - Fernando Camelli (fcamelli@gmu.edu)
    - Philip Rubin (prubin@gmu.edu)
    - Joseph Weingartner (jweinga1@gmu.edu)
    - Erhai Zhao (ezhao2@gmu.edu)
- Advanced Majors
  - Fernando Camelli (fcamelli@gmu.edu) [Computational and Applied Physics]
  - Joseph Weingartner (jweinga1@gmu.edu) [Astrophysics]
  - Erhai Zhao (ezhao2@gmu.edu) [No Concentration/Traditional Physics]

Once students begin attending Mason and declare a major they should see both their Honors College and their major department advisor for advising. Students must confirm their major requirements with their department advisor and with PatriotWeb’s Degree Evaluation.

Students may major in Physics with no Concentration or with Concentrations in Applied and Engineering Physics, Astrophysics, or Computational Physics. Consult the catalog and your major advisor for course selection.

ADVISING SHEET
- Honors College Requirement
- Department Requirement

<table>
<thead>
<tr>
<th>1st Year – 1st Semester (Fall)</th>
<th>Credits</th>
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<tbody>
<tr>
<td>o HNRS 110: Principles of Research &amp; Inquiry</td>
<td>4</td>
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<tr>
<td>o HNRS 122: Reading the Arts (or see Physics advisor for another elective)</td>
<td>3</td>
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<tr>
<td>♦ MATH 113: Analytic Geometry and Calculus I (placement exam required)</td>
<td>4</td>
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<tr>
<td>♦ Elective</td>
<td>3</td>
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<tr>
<td>Semester Total</td>
<td>15</td>
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<tr>
<th>1st Year – 2nd Semester (Spring)</th>
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<tr>
<td>♦ MATH 114: Analytic Geometry and Calculus II (prerequisite: C or better in MATH 113) or MATH 1161 (Honors MATH 114)</td>
<td>4</td>
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<tr>
<td>♦ PHYS 160/160H and 161: University Physics I and Lab (co-requisite: MATH 114/116)</td>
<td>4</td>
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<tr>
<td>♦ Elective or HNRS 131: Contemporary Society in Multiple Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>o HNRS 130: Identity, Community, &amp; Difference</td>
<td>3</td>
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<tr>
<td>Semester Total</td>
<td>14</td>
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<th>2nd Year – 1st Semester (Fall)</th>
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<tr>
<td>o HNRS 131: Contemporary Social Issues or HNRS 240: Reading the Past (both are required)</td>
<td>3</td>
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<tr>
<td>♦ MATH 213: Analytic Geometry and Calculus III or MATH 215 (Honors MATH 213)1</td>
<td>3</td>
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</table>
- PHYS 260/260H and 261: University Physics II¹ and Lab (co-requisite: MATH 213/215)  4
- PHYS 251: Intro to Computer Techniques in Physics  3
  - HNRS 260 (Society & Community Engagement) Or HNRS 261 (Community Connection)  3
  Semester Total 3 16

2nd Year – 2nd Semester (Spring)
- HNRS 240: Reading the Past, if needed, or Elective  3
- MATH 214: Differential Equations or MATH 203: Linear Algebra⁴  3
- PHYS 307: Thermal Physics  3
- PHYS 308: Modern Physics with Applications  3
- ASTR 210: Introduction to Astrophysics or see Major Dept. for alternatives  3
  Semester Total 15

3rd Year – 1st Semester (Fall): DECLARE CONCENTRATION
- PHYS 311: Instrumentation  3
- PHYS 301: Analytical Methods of Physics  3
- PHYS 303: Classical Mechanics  3
- PHYS 305: Electromagnetic Theory  3
- MATH 214: Differential Equations or MATH 203: Linear Algebra⁴ (if needed) or Elective  3
  Semester Total 15

3rd Year – 2nd Semester (Spring)
- HNRS 360: Multi-Disciplinary Topics Or HNRS 361: Multi-Disciplinary Practicum  3
- PHYS 306: Wave Motion and Electromagnetic Radiation  3
- PHYS 312: Waves and Optics  3
- PHYS 402: Introduction to Quantum Mechanics and Atomic Physics  3
- Elective  3
  Semester Total³ 15

4th Year – 1st Semester (Fall)
- PHYS 403: Quantum Mechanics II  3
- PHYS 407: Senior Laboratory  4
- PHYS 408 or 409: Senior Research or Physics Internship  3
- PHYS 410: Computational Physics Capstone⁴  3
- PHYS 416: Special Topics in Modern Physics  1
  Semester Total 14

4th Year – 2nd Semester (Spring)
- PHYS 412: Solid State Physics and Applications or see major department for alternatives  3
- PHYS 428: Relativity  3
- Electives  9
  Semester Total 15

Total Hours 120
NOTES

1. While Honors sections are not required to complete the Honors curriculum, students are highly encouraged to take the Honors sections to obtain a more in-depth understanding of the course.
2. MATH 113 fulfills the quantitative reasoning requirement for Honors. MATH 113 requires a placement exam.
3. Total number of credit hours must be greater than or equal to 120.
4. Select 6 credits from the following: PHYS 410, MATH 203, MATH 214.