DU Physics and Astronomy BA Degree Requirements (updated February 2013)

1. DU Common Curriculum:
   - First-Year Seminar
   - 8 credits of Writing and Rhetoric
   - 12 credits of a foreign language (or demonstrated proficiency)
   - 16 credits of Ways of Knowing, including
     - 8 credits of Analytical Inquiry: Society and Culture (AI2)
     - 8 credits of Scientific Inquiry: Society and Culture (SI2)
   - Advanced Seminar

2. Calculus I, II, and III (MATH 1951, 1952, 1953) and Introduction to Differential Equations (MATH 2070).

3. University Physics I, II, III, and lab (PHYS 1211, 1212, 1213)

4. At least 35 quarter hours of physics coursework at 2000 level or above. This program must include the following:
   - Modern Physics I and II (PHYS 2251, 2252)
   - Modern Lab (PHYS 2260)
   - Uncertainty and Error Analysis (PHYS 2259)
   - Analytical Mechanics I (PHYS 3510)
   - Quantum Physics I (PHYS 3111)
   - Electromagnetism I (PHYS 3611)
   - Thermal Physics (PHYS 3841)
   - Senior Seminar (PHYS 3100)

   These required courses total 27 credits. Thus the student must complete 8 additional elective credits in physics at the 2000+ level. Independent Study (PHYS 3991) and Independent Research (PHYS 3995) count toward this total, as do graduate-level courses in physics and biophysics (BIOP).

5. One minor.
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<td>Fr</td>
<td>PHYS 1200 Physics Prep (2) MATH 1951 Calculus I (4) FSEM 1111 First Year Seminar (4) Foreign Language (4)</td>
<td>PHYS 1211 Univ. Phys. I (5) MATH 1952 Calculus II (4) WRIT 1122 Acad. Writing (4) Foreign Language (4)</td>
<td>PHYS 1212 Univ. Phys. II (5) MATH 1953 Calculus III (4) WRIT 1133 Acad. Writing (4) Foreign Language (4)</td>
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<td>PHYS 1213 Univ. Phys. III (5) AI2 (4) 1 SI2 (4) 1</td>
<td>PHYS 2251 Mod. Phys. I (4) PHYS 2259 Uncertainty (1) MATH 2070 Diff. Eqns. (4) SI2 (4) 1</td>
<td>PHYS 2252 Mod. Phys. II (3) AI2 (4) 1 Minor requirement/Elective (4)</td>
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<td>ASEM Advanced Seminar (4) Minor requirements as needed This is the best quarter for physics majors to study abroad.</td>
<td>PHYS 3510 Analyt. Mechanics I (4) 2 PHYS 3611 E&amp;M I (4) 3</td>
<td>PHYS Elective (4) 3 Minor requirements/Electives</td>
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<td>PHYS 3100 Senior Seminar (2) Minor requirements as needed</td>
<td>PHYS 3111 Quantum Physics I (4) 3 PHYS Elective (4) 2 Minor requirements as needed</td>
<td>PHYS 3841 Thermal Physics (4) 3 Minor requirements as needed</td>
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1 AI2 and SI2 courses may be taken in any order.

2 PHYS 3510 Analytical Mechanics and PHYS 3611 Electromagnetism I are offered every other year. PHYS 3111 Quantum Physics I and PHYS 3841 Thermal Physics are offered in the alternating years. Either set of courses may be taken first.

3 PHYS 2311 Intermediate Lab I, 3112 Quantum Physics II, PHYS 3520 Analytical Mechanics II, and PHYS 3612 Electricity & Magnetism II are strongly recommended as electives. BA students may enroll in PHYS 3991 Independent Study or PHYS 3995 Independent Research as part of their work toward the 35-hour 2000+ requirement. Credits for these courses are variable. Graduate-level courses in physics and biophysics (BIOP) also count as physics electives.