Physics Core and Major Requirements (Bachelor of Science) – Catalog Year 2010

Major Requirements for Physics:

- Mathematics Requirements:
  - MATH 2554 Calculus I (MATH 1203 & MATH 1213 or MATH 1285)
  - MATH 2564 Calculus II (MATH 2554)
  - MATH 2574 Calculus III (MATH 2564)
- MATH 3404 Differential Equations and Laplace Transform (MATH 2574)
- MATH 3423 Advanced Applied Mathematics (MATH 3404)

- Science Requirements:
  - CHEM 1103 University Chemistry I (MATH 1203) AND CHEM 1123 University Chemistry II (MATH 1203 & CHEM 1103)
  - OR
  - An advisor approved 8 hour laboratory-based course sequence selected from the following:

- A minimum of forty hours in Physics including:
  - PHYS 2054/2050L University Physics I (Pre or Co-ref: MATH 2554)
  - PHYS 2064/2060L University Physics II (Pre or Co-ref: MATH 2564)
  - PHYS 3614 Modern Physics (PHYS 2074)
  - PHYS 4991 Physics Senior Seminar
  - PHYS 2074/2070L University Physics II (PHYS 2054, Pre or Co-ref: MATH 2564)
  - PHYS 3414 Electromagnetic Theory (PHYS 2074, Pre or Co-ref MATH 3404)
  - PHYS 4073 Introduction to Quantum Mechanics (PHYS 3614, MATH 3404)

Students must also complete one of the following concentrations:

**CONCENTRATION 1: Professional**

- PHYS 3113 Analytical Mechanics (PHYS 2074, Pre or Co-ref: MATH 3404)
- PHYS 3433 Thermal Physics (PHYS 3614)

Ten semester hours numbered 3000 or above in Physics or Astronomy

**CONCENTRATION 2: Optics**

- PHYS 3544 Optics (PHYS 2074 or MATH 2564)
- PHYS 4734 Introduction to Laser Physics (PHYS 3414, PHYS 3544)
- PHYS 4774 Introduction to Optical Properties of Materials (PHYS 3414, PHYS 3544)

Eight semester hours numbered 3000 or above in Physics or Astronomy

**CONCENTRATION 3: Electronics**

- Up to two hours PHYS 220V Introduction to Electronics I (Pre or Co-ref: MATH 1203 or MATH 1285)
- Two or more hours PHYS 320V Introduction to Electronics II (PHYS 220V and MATH 2564)
- PHYS 4333 Thermal Physics (PHYS 3614)

Six semester hours numbered 3000 or above in Physics or Astronomy

- For more information on Physics, contact the Department of Physics: Physics Building 226 / (479)-575-2506 / www.uark.edu/depts/physics/

***This form is NOT a substitute for the Catalog of Studies. Students should verify this information with their advisor, their degree audit, and the Catalog of Studies.***

Requirements for Departmental Honors in Physics: The Departmental Honors Program in Physics provides upper-division undergraduate students with an opportunity to formally participate in scholarly physics activities. Honors candidates carry out independent study and research under the guidance of the physics faculty and participate in special honors classes, seminars, and colloquia. Outstanding student achievement will be recognized by awarding the distinction “Physics Scholar Cum Laude” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies. To be considered as a candidate for higher distinctions, however, a student must achieve at least a 3.50 cumulative grade-point average in physics and mathematics. In addition to satisfying the general college requirements for the bachelor’s degree with honors, an honors candidate in physics must:

1. become a candidate no later than the first semester of the junior year of study,
2. enroll in honors sections of physics courses when available,
3. enroll in six hours of honors research PHYS 399VH,
4. enroll in at least one physics honors colloquium PHYS 3923H,
5. complete and orally defend an honors thesis based upon the project carried out in PHYS 399VH, and
6. achieve a cumulative grade-point average of 3.125 in physics.

40-Hour Rule

Students must complete at least 40 hours of work in courses numbered 3000 and above. Included in this 40 hours can be courses numbered 2000 if each has a specific course designated as a prerequisite, with the exception of MILS 2001 and 2011, AERO 2001 and 2011, and foreign language courses numbered 2003 and 2013.

24-Hour Rule

A student graduating from Fulbright College must complete at least 24 hour of work in courses numbered 3000 and above from departments within the Fulbright College of Arts and Sciences.