

Applied Physics - Astrophysics Concentration

The courses listed below fall into two categories. Those which are very strongly recommended are given in capital letters. The remaining courses are recommended to broaden the student's background and understanding of physics in general and the student's chosen concentration.

| Department | Course Number | Course Name | Credits Required | Term Taken |
|------------------|---------------|---|------------------------------|------------|
| | | | §T | |
| Physics | 3000 | MICROCOMPUTER METHODS IN PHYSICS (S) | 2 | |
| | 3010 | CLASSICAL MECHANICS (F) | 3 | |
| | 3020 | ELECTROMAGNETIC FIELDS AND WAVES (S) | 3 | |
| | 3520 | INSTRUCTIONAL ASSISTANCE | 1 | |
| | 353X-354X | Mathematical Methods in Physics | 3 | |
| | 3630 | DIGITAL ELECTRONICS (F) | 3 | |
| | 4620 | OPTICS (S) | 4 | |
| | 4640 | Quantum Mechanics (S) | 3 | |
| | 4735 | Microprocessors (S) | 3 | |
| | Astronomy | 1001 | INTRODUCTORY ASTRONOMY I (F) | 4 |
| 1002 | | INTRODUCTORY ASTRONOMY II (S) | 4 | |
| 2001 | | OBSERVATIONAL ASTRONOMY I (F) | 3 | |
| 2002 | | OBSERVATIONAL ASTRONOMY II (S) | 3 | |
| 3100 | | ASTROPHYSICS (S) Even # Years | 3 | |
| 3200 | | ASTROMECHANICS (S) Odd # Years | 3 | |
| Mathematics | 2240 | Introduction to Linear Algebra | 3 | |
| | 3130 | DIFFERENTIAL EQUATIONS | 3 | |
| | 4310 | Numerical Methods (S) | 3 | |
| Statistics | 2810 | Intro. to Data Analysis & Statistical Inference | 3 | |
| Computer Science | 1400 | Fortran Programming | 3 | |
| | 1440 | Computer Science I | 3 | |
| | 2440 | Computer Science II | 4 | |

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APPLIED PHYSICS - ASTROPHYSICS CONCENTRATION

Suggested Course Schedule

The following schedule of courses is suggested for the astrophysics concentration physics major. It assumes that the student's background is such that they can start the math sequence with calculus.

| | | | |
|----------------------|----------|---|---------|
| First Year - Fall | AST 1001 | Introductory Astronomy I | 4 hours |
| | PHY 1150 | Analytical Physics I | 5 hours |
| | MAT 1110 | Calculus I | 4 hours |
| First Year - Spring | AST 1002 | Introductory Astronomy II | 4 hours |
| | PHY 1151 | Analytical Physics II | 5 hours |
| | MAT 1120 | Calculus II | 4 hours |
| Second Year - Fall | PHY 2020 | Intermediate Physics I | 4 hours |
| | MAT 3130 | Calculus III | 4 hours |
| | AST 2001 | Observational Astronomy I | 3 hours |
| Second Year - Spring | PHY 2020 | Intermediate Physics II | 4 hours |
| | MAT 3130 | Differential Equations | 3 hours |
| | AST 2002 | Observational Astronomy II | 3 hours |
| Third Year - Fall | PHY 3210 | Modern Physics | 3 hours |
| | PHY 3630 | Digital Electronics | 3 hours |
| Third Year - Spring | PHY 2210 | Physics Lab. Techniques & Data Analysis | 2 hours |
| | AST 3100 | Astrophysics (Even Years) | 3 hours |
| | AST 3200 | Astromechanics (Odd Years) | 3 hours |
| Fourth Year - Fall | PHY 4210 | Methods of Experimental Physics | 3 hours |
| Fourth Year - Spring | AST 3100 | Astrophysics (Even Years) | 3 hours |
| | AST 3200 | Astromechanics (Odd Years) | 3 hours |
| | PHY 4620 | Optics | 4 hours |

The above schedule includes all the physics and math courses required for any physics major as well as courses selected for the astrophysics concentration. Depending on the student's own level of preparation, it may be necessary to take additional preparatory courses in math or physics. It is important that the student begins the sequence of astronomy courses as soon as possible. Note that AST 3100 and AST 3200 are offered every other year. Additional math, physics and computer science courses will improve the student's preparation for post-graduate studies or immediate employment.