

MINOR IN ASTROBIOLOGY

The goal of this interdisciplinary undergraduate minor degree program, which spans courses in eight schools, is to give students an overview of the field astrobiology. Students will be introduced to the breadth of topics in astrobiology by taking the required course EAS 1601 Habitable Planet (4 credits). Students will then obtain a greater depth in subfields of astrobiology by taking upper-level electives (at least 11 credits) selected from three divisions: (1) Earth, Space, and Other Worlds, (2) Foundations of Life, and (3) Astrobiology in a Wider World. Students will take courses taught by Georgia Tech faculty who are leaders in the astrobiology field.

There are no prerequisites for entering the Astrobiology minor program. Students in any major at Georgia Tech are eligible to complete the Astrobiology minor. All courses counting toward the minor must be taken on a letter-grade basis and be completed with a grade of C or higher. Students may petition for eligibility for elective courses on a case-by-case basis. Courses used to satisfy general education (Core) IMPACTS areas in a student's major degree program cannot also be used to satisfy the course requirements for a minor. Courses in Field of Study courses may be counted as coursework in a minor.

Learning Outcomes

Upon completion of the minor, students will be able to:

1. Understand the physical and chemical conditions for development of a habitable planet;
2. Obtain in-depth knowledge related to Earth, space, and planetary science;
3. Obtain in-depth knowledge related the origin and evolution of life on Earth;
4. Critically evaluate scientific issues related to Astrobiology in media and popular culture.

More information: Georgia Tech Astrobiology Program

| Code | Title | Credit Hours |
|---|---|--------------|
| Required Course | | |
| EAS 1601 | Habitable Planet | 4 |
| Electives¹ | | 11 |
| Division 1: Earth, Space, and Other Worlds | | |
| AE 4361 | Space Flight Operations | |
| AE 4451 | Jet and Rocket Propulsion | |
| AE/EAS 4803 | Special Topics (Planetary Spacecraft Development) | |
| AE/EAS 4803 | Special Topics (Space Instrumentation for Life Detection) | |
| EAS 4220 | Environmental Geochemistry | |
| EAS 4224 | Mineral Surface Geochemistry | |
| EAS 4300 | Introduction to Physical and Chemical Oceanography | |
| EAS 4305 | Physical and Chemical Oceanography | |
| EAS 4350 | Paleoclimatology and Paleooceanography | |
| EAS 4360 | Space Physics and Space Instrumentation | |
| EAS 4370 | Physics of Planets | |
| EAS 4375 | Earth and Planetary Materials | |
| EAS 4602 | Biogeochemical Cycles | |

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| EAS 4610 | Earth System Modeling |
| EAS 4801 | Special Topics (Planetary Science and Astrobiology Seminar) |
| CHEM 3216 & 3216L | Analytical Chemistry Lecture and Analytical Chemistry Laboratory |
| PHYS 3022 | Stars and Planets |
| PHYS 4247 | Cosmology and Galaxies |
| PHYS 4347 | Theoretical Astrophysics |
| Division 2: Foundations of Life | |
| BIOS 3380 & BIOS 3381 | Microbiology and Microbiology Lab |
| BIOS 3450 & BIOS 3451 | Cell and Molecular Biology and Cell and Molecular Biology Lab |
| BIOS 3600 | Evolutionary Biology |
| BIOS 4012 | Protein Biology |
| BIOS 4225 | Molecular Evolution |
| BIOS 4560 | RNA Biology and Biotechnology |
| BIOS 4410 | Microbial Ecology |
| BIOS 4550 | Origin of complex life: from cells to societies |
| BIOS 4607 | Molecular Biology of Microbes: Disease, Nature, and Biotechnology |
| BIOS 4418 | Microbial Physiology |
| CHEM 3521 | Biochemistry I |
| CHEM 3522 | Biochemistry II |
| CHEM 3511 | Survey of Biochemistry |
| CHEM 4803 | Special Topics (Origins of Life) |
| PHYS 4251 | Biophysics |
| Division 3: Astrobiology in a Wider World | |
| EAS 4420 | Environmental Field Methods |
| EAS 4802 | Special Topics (Seminal Papers in Astrobiology) |
| HTS 3021 | Women in Science and Engineering |
| HTS 3082 | Sociology of Science |
| INTA 3043 | Space Policy |
| LMC 3104 | The Age of Scientific Discovery |
| LMC 3106 | The Age of Scientific Revolution |
| LMC 3112 | Evolution and the Industrial Age |
| LMC 3214 | Science Fiction |
| LMC 3215 | Science Fiction Film and Television |
| LMC 3302 | Science, Technology, and Ideology |
| LMC 3304 | Science, Technology, and Gender |
| LMC 3306 | Science, Technology, and Race |
| LMC 3310 | The Rhetoric of Scientific Inquiry |
| LMC 3316 | Science, Technology, and Postcolonialism |
| Total Credit Hours | |

¹ At least 3 credits must be completed from each of the divisions.