

## Space Physics Fact Sheet

Department of Physics  
Embry-Riddle Aeronautical University  
Prescott, AZ 86301

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### What is it?

A student who successfully completes this undergraduate degree program will earn a **B.S. in Space Physics**. Furthermore, this program is accredited by the Southern Association of Colleges and Schools and is the only undergraduate degree program of its kind. The Space Physics program (on the Prescott Campus) is a 120 credit hour program with four areas of concentration:

1. Astrophysics
2. Particle Physics & Cosmology
3. Exotic Propulsion
4. Remote Sensing

### What skills should I have if I choose to major in Space Physics?

1. You should have *good to excellent* math skills and be prepared to take Calculus I and calculus-based physics the first semester at ERAU.
2. If possible, you should have completed an introductory physics course in high school.
3. If you have taken the AP Calculus and/or Physics exam and receive a 4 or 5, you can receive credit for the first semester of Calculus and/or Physics.

### What kind of courses are included in the Space Physics curriculum?

1. This is a B.S. degree in Space Physics, so you can expect many of the same courses as offered in other physics degree programs such as Mechanics, Electricity & Magnetism, Statistical and Thermal Dynamics, Quantum, Mechanics, Atomic & Nuclear Physics. However, many of these courses will have applications relating to space sciences. Furthermore, there will be other courses focused on “space” such as Astrophysics I and II, Particle Physics and Cosmology, Advanced Propulsion Systems, and Remote Sensing to name a few.
2. The core curriculum for the first three semesters is similar for both physics and engineering students (~85% level). The fourth semester course (Modern Physics) is not required for engineers. Furthermore, physics students must take a physics lab every semester for the first three semesters while the engineering students are only required to take on physics lab.
3. In the third year, all physics students are required to take the optics lab, and during their fourth year, they will take a senior lab designed toward their area of concentration.
4. The four-year rollout of the Space Physics courses can be found on the Space Physics website:

[http://physicsx.pr.erau.edu/SpacePhysics/roll\\_out.html](http://physicsx.pr.erau.edu/SpacePhysics/roll_out.html)

### How is this degree different from other degrees at Embry-Riddle?

1. You will be expected to know and understand a lot more math and physics compared to other degree programs. Furthermore, you will be expected to use it to solve everyday problems encountered by physicists.
2. While ERAU offers many professional degrees, this is the first degree program that focuses on a field of science and prepares the students for a career in scientific research.

**After I receive my Space Physics degree, where do I go next?**

1. Because of your hands-on experience in the physics labs, you will be prepared to work in the space industry as an industrial physicist, building experiments and analyzing data and thereby contributing to the body of knowledge in Space Physics and the Space Sciences.
2. Because of your scientific skill and desire to study natural phenomena related to space sciences, you will be prepared to work at a national laboratory such as Kitt Peak, jet Propulsion Lab, NASA research labs, Fermilab, Los Alamos, etc.
3. Students who do well in the Space Physics program will be academically prepared to take the physics Graduate Records Exam (GRE) and move on to a graduate program in physics or astrophysics.

**Our first graduating class:**

We graduated our first senior class in Spring 2007 with 20 students successfully finishing the program. The number of students going to industry, graduate school, and teaching were 9, 9, and 2. The students pursuing jobs in industry or research at national labs are earning salaries ranging up to \$60,000.

**Who should I contact if I have questions?**

Dr. Darrel Smith (Department Chair)  
Department of Physics  
College of Arts & Sciences  
Embry-Riddle Aeronautical University  
3700 Willow Creek Rd.  
Prescott, AZ 86301

Office: 1.928.777.6663

email: [smith@erau.edu](mailto:smith@erau.edu)

home page: <http://physicsx.pr.erau.edu/>

Dr. Phillip Anz-Meador (Assist. Dept. Chair)  
Department of Physics  
College of Arts & Sciences  
Embry-Riddle Aeronautical University  
3700 Willow Creek Rd.  
Prescott, AZ 86301

Office: 1.928.777.3754

email: [anzmfd@erau.edu](mailto:anzmfd@erau.edu)

Please feel free to contact either one of us if you have questions regarding the Space Physics degree program at Embry-Riddle in Prescott, Arizona.