

# Physics, Space

College of Natural Science and Mathematics  
Department of Physics  
907-474-7339  
[www.uaf.edu/physics/](http://www.uaf.edu/physics/)

## M.S., Ph.D. Degrees

Minimum Requirements for Degrees: M.S.: 30 – 33 credits; Ph.D.: 18 thesis credits

Space physics focuses on the physics of upper atmospheres, ionospheres, magnetospheres and the interplanetary medium. It includes core physics courses and specialty courses in space physics, aeronomy, magnetospheric and auroral physics, and advanced plasma physics. The specialty courses support graduate research with faculty members at UAF's Geophysical Institute, and include areas such as numerical simulations and time-series analysis. Additional courses such as radiative transfer and physics of fluids provide added breadth.

### Graduate Program — M.S. Degree

1. Complete the general university requirements (page 201).
2. Complete the master's degree requirements (page 205).
3. Complete four of the following:  
PHYS F626—Fundamentals of Plasma Physics.....3  
PHYS F627—Advanced Plasma Physics.....3  
PHYS F629—Methods of Numerical Simulation in Fluids  
and Plasma.....3  
PHYS F672—Magnetospheric Physics .....3  
PHYS F673—Space Physics.....3

4. Complete the thesis or non-thesis requirements:

#### Thesis

- a. Complete the following:  
PHYS F699—Thesis.....6 – 12  
Approved PHYS electives.....12
- b. Minimum credits required .....30 – 33

#### Non-Thesis

- a. Complete the following:  
Approved PHYS electives.....18  
PHYS F698—Research.....3 – 6
- b. Minimum credits required .....30 – 33

### Graduate Program — Ph.D. Degree

1. Complete the general university requirements (page 201).
2. Complete the Ph.D. degree requirements (page 206).\*
3. Complete and pass a written and oral comprehensive examination.
4. Minimum credits required .....18

\* Complete in accordance with the physics department's policies and procedures manual for graduate students.  
See Physics.