Physics, Computational

College of Science, Engineering and Mathematics
Department of Physics
(907) 474-7339
www.uaf.edu/physics/
Degree: M.S.
Minimum Requirements for Degree: 30 or 33 Credits

Computational modeling and simulation have become central tools in many science disciplines. Computational physics includes numerical modeling and computer simulation of processes in the earth's environment.

Computational physics requires expertise in advanced computing environments, in the mathematical background, and in the specific physics discipline. This computational physics master's degree is directed toward students with undergraduate academic backgrounds in physics or other closely associated fields such as engineering that have appropriate physics coursework. This degree is appropriate for students seeking careers in industry, government and research that require expertise in modeling and simulation of physical systems.

GRADUATE PROGRAM
Computational Physics—M.S. Degree
1. Complete the following admissions requirements:
a. Complete a B.S. degree in physics.
b. Complete MATH 421 and 422.
2. Complete the general university requirements (page 43).
3. Complete the master's degree requirements (page 46).
4. Complete the thesis or non-thesis requirements.

Thesis Option
a. Complete the following
   PHYS 611—Mathematical Physics I 3
   PHYS 612—Mathematical Physics II 3
   PHYS 629—Methods of Numerical Simulation in Fluids and Plasma . 3
   PHYS 699—Thesis.. 6-12
b. Complete approved PHYS 600-level courses 6
c. Complete at least 3 credits from the following:
   Approved MATH 600-level courses (excluding MATH/PHYS 611 and
      612) 3
   Approved CS 600-level courses 3
d. Minimum credits required* 30

   * At least 24 credits must be from regular coursework for thesis option.

Non-Thesis Option
a. Complete the following
   PHYS 611—Mathematical Physics I 3
   PHYS 612—Mathematical Physics II 3
   PHYS 629—Methods of Numerical Simulation in Fluids and Plasma . 3
   PHYS 698—Research 3-6
b. Complete approved PHYS 600-level courses 9
c. Complete at least 3 credits from the following:
   Approved MATH 600-level courses (excluding MATH/PHYS 611 and
      612) 3
   Approved CS 600-level courses 3
d. Minimum credits required* 33

   * At least 30 credits must be from regular coursework for non-thesis option.

See Physics.
See Space Physics.

University of Alaska Fairbanks