



# SNOW SCIENCE

## Option

at  
Montana State University

### What is the Snow Science Option in Earth Sciences?

The Snow Science Option is a combination of fields which provide foundations for understanding the distribution of snow (geography), mechanics of snow (physics, engineering), composition of snow (chemistry), variability of snow (statistics), and effects of snow (ecology, hydrology). As such, the snow program is a strong technical undergraduate program for environmental scientists or lawyers. It is also one of the best pre-professional programs in the world for those who will carry their interest in snow into a professional career. There are two emphases in the option. One focuses on biology and geographic information systems. One focuses on snow mechanics. The first emphasis prepares you in the area of geography, ecology, and spatial analysis of factors important to snow distribution, the interaction between snow plants and animals, snow melt, and the spatial analysis of factors which influence the spatial distribution of snow and snow avalanche factors. The second emphasis prepares you to study the mechanics of snow as it relates to transportation, avalanche release, and the impact of snow on buildings due to loading or avalanche impact.

### What courses would I take in the Snow Science curriculum?

You take a broad base of core courses that includes introductory geology and geography, calculus, chemistry, physics, statistics, weather and climate, writing, geomorphology, glacial geology, and





mountain geography. For the biology and GIS emphasis you would take additional courses in biology and geography (geographic information systems). For the snow mechanics emphasis you would take additional courses in math and engineering mechanics.

### **What opportunities for fieldwork are there in Snow Science?**

Opportunities exist for avalanche forecasters, educators, hydrologists, planners, engineers, and ecologists who are collecting data on snow stability, crusts, quantity, distribution, hazards, and winter severity (to name a few opportunities!).

### **How does the Snow Science Option prepare me for more advanced training and employment?**

Because of the great foundation you will receive for understanding the geography, physics, mechanics, chemistry, ecology, and hydrology of snow you will be well prepared more advancement. You will be strongly encouraged to consider a graduate degree in snow science to prepare for professional jobs, but such training is not always required.

*For more information, visit our website!*

[www.montana.edu/wwwes](http://www.montana.edu/wwwes)



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