Geomatics

Engineering Building (ENGR), Room 330, (907) 786-5428  
www.uaa.alaska.edu/geomatics (http://www.uaa.alaska.edu/geomatics)

The Department of Geomatics offers a two-year Associate of Applied Science in Geomatics, a four-year Bachelor of Science in Geomatics, a Minor in Geographic Information Systems (GIS) and an Undergraduate Certificate in GIS. Students seeking the baccalaureate degree may graduate in one of three emphasis areas: surveying, geospatial science or geo-developer. Students seeking continuing education for technical or professional enhancement or a concentrated area of study in GIS should consider either the Minor in GIS or the Undergraduate Certificate in GIS. The geomatics program is science-based and includes:

- Land surveying using global positioning systems and conventional techniques
- Automated mapping
- Computational analysis and adjustment
- Geodesy
- Principles of boundary law
- Geographic information systems (GIS)
- Digital photogrammetry
- Remote sensing and image analysis.
- Airborne LiDAR surveying
- High density spatial data analysis

The wide diversity in the profession creates a similar diversity of employment opportunities. The Undergraduate Certificate in GIS educates students with a broad base of concepts and theory, provides them with hands-on training in real world problems that are relevant to Alaska’s environment, and allows them to explore several thematic areas in GIS applications, such as facilities management, transportation, marine environments, and natural resources.

The Minor in GIS is designed for students seeking to enhance their knowledge of GIS and remote sensing to complement a major baccalaureate degree in a variety of disciplines including science, art, business management and engineering. GIS, as a part of geospatial science and information technologies, is widely used in many industries important to Alaska (e.g., oil, gas), governance and administration (municipalities and the state), statewide and federal agencies and departments (transportation, natural resources, land management, parks and recreation, etc.), research (sustainability, biodiversity, ecology, geology, anthropology, socioeconomics, etc.), homeland security, military applications, and non-profit organizations.

The Associate of Applied Science in Geomatics prepares students for technician-level employment as land survey technicians or as automated mapping technicians. Those working as survey technicians frequently work outdoors, travel to various job locations, and enjoy an independent lifestyle. Automated mapping technicians work with the latest cartographic techniques and equipment and easily transfer skills learned in geomatics courses to other disciplines.

The Bachelor of Science prepares students for a wide variety of professional-level opportunities. Since Alaska poses unique geomatics challenges, the curriculum emphasizes northern principles and practices. UAA graduates are highly employable in the Alaska marketplace and worldwide. Employment opportunities are found in private industry, government and municipal agencies. Geomatics graduates working at the professional level enjoy responsibility and a choice of indoor and outdoor employment with many opportunities for advancement and diversification.

The new high-tech fields open employment in GIS, photogrammetry, remote sensing, land surveying, automated mapping, land design and planning, survey engineering, and resource management positions. In Alaska, geomatics professionals work on state and Native land claims, mining claims, fishing leases, petroleum reserves, forest selections, transportation corridors, private developments, and government and military projects. In Alaska and elsewhere, geomatics professionals work in land surveying, land development and design, mapping and tax assessment, the defense industry, environmental engineering assessment and management, public safety and welfare, medicine, transportation, agriculture, business, and natural sciences.

Professional predictors indicate that employment opportunities will be strong for the various geomatics specialties in Alaska and the Pacific Rim well for decades to come. While still in school, many geomatics students find part-time and summer employment with geomatics related employers.

The Department of Geomatics accommodates a wide variety of student objectives from entry level to professional preparation and encourages the nontraditional student to return for training in current practices and principles.

Students seeking professional licensing as registered land surveyors and those who are interested in specializing in surveying should enroll in the Bachelor of Science program (surveying emphasis). Students seeking certification such as a Certified Photogrammetrist (CP) or as a Geographic Information System Professional (GISP) and those who are interested in geospatial science or GIS should enroll in the Bachelor of Science program (geospatial science emphasis). Students seeking a specialization in geospatial science with a concentration in computer programming should enroll in the Bachelor of Science program (geo-developer emphasis). For the most effective planning, bachelor’s degree candidates should declare their intent by the second semester of their geomatics studies.

Mission Statement

The Department of Geomatics’ mission is to contribute to the wider body of knowledge in the geospatial sciences, and to disseminate this to society. By advancing our theoretical, professional, technical and educational capabilities, we will develop and maintain a community dedicated to the highest standards of scholarship. Within a student-centered environment, we are committed to the theoretical, professional and technical advancement of all our students, so that they may contribute to the advancement of their profession, their society, and their world, throughout their lives.
Programs of Study

Undergraduate Certificate

• Certificate in Geographic Information Systems (http://catalog.uaa.alaska.edu/undergraduateprograms/coeng/geomatics/certificate-geographicinformationsystems)

Associate of Applied Science

• AAS in Geomatics (http://catalog.uaa.alaska.edu/undergraduateprograms/coeng/geomatics/aas-geomatics)

Bachelor of Science

• BS in Geomatics (http://catalog.uaa.alaska.edu/undergraduateprograms/coeng/geomatics/bs-geomatics)

Minor

• Minor in Geographic Information Systems (http://catalog.uaa.alaska.edu/undergraduateprograms/coeng/geomatics/minor-geographicinformationsystems)