GEOMATICs

Geomatics is a Science, Technology, Engineering, and Mathematics (STEM) major that addresses spatial data collection, management, and analysis. Traditionally known for surveying and mapping, Geomatics also has some more well-known applications such as Geographic Information Systems (GIS), Global Positioning Systems (GPS), and even Unmanned Aerial Vehicles (UAVs). Spatial data is collected through many techniques such as ground surveying, photogrammetry, remote sensing, satellite positioning, inertial measurements, echo-sounding, and laser scanning. Spatial information collected may then be integrated into a geographic information system or other graphical form and analyzed to support a broad range of applications. For instance, Geomatics uses this technology to detect how and where things are located, and uses this information for a variety of purposes, including establishing property boundaries, locating and documenting historical buildings, analyzing ecological data including habitat types and species migration patterns, designing new roads and other infrastructure, and much more.

About this Program

- **College**: Agricultural and Life Sciences
- **Degree**: Bachelor of Science in Geomatics
- **Credits for Degree**: 120
- **Specializations**: Geospatial Analysis | Surveying and Mapping
- **Additional Information**
- **Related Geomatics Programs**

To graduate with this major, students must complete all university, college, and major requirements.

Geomatics students learn how land, infrastructure, and natural resources are measured, analyzed, and integrated into useable forms and systems. Students gain hands-on experience working with field equipment and in high-tech classrooms. Present land values, rates of urban development, and environmental concerns require a broad set of expertise to develop, manage, and apply geospatial information. Students majoring in Geomatics complete either the Surveying and Mapping specialization or the Geospatial Analysis specialization.

Both specializations within the Geomatics major are offered at the Fort Lauderdale Research and Education Center in Ft. Lauderdale, FL, the Gulf Coast Research and Education Center in Plant City, FL and at the Mid-Florida Research and Education Center in Apopka, FL.

Related Geomatics Programs

- Geomatics certificate
- Mapping with Small Unmanned Aerial Systems certificate

Academic Learning Compact

Geomatics addresses land information development and management through field survey, photogrammetry, remote sensing, satellite positions and other techniques. The program is nationally accredited and graduates often obtain licensure as professional surveyors and mappers.

A nationally accredited ABET program.

Before Graduating Students Must

- Pass the geomatics competency exam, given in five parts. One part will be given in each of these required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>SUR 3103C</td>
<td>Geomatics</td>
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<tr>
<td>SUR 3520</td>
<td>Measurement Science</td>
<td>3</td>
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<tr>
<td>SUR 4430</td>
<td>Surveying and Mapping Practice</td>
<td>3</td>
</tr>
<tr>
<td>SUR 4463</td>
<td>Subdivision Design</td>
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<td>SUR 4912</td>
<td>Senior Project</td>
<td>1</td>
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<tr>
<td>Total Credits</td>
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- Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to

Student Learning Outcomes (SLOs)

Content

1. Knowledge and competency in geometry, statistics, boundary law, surveying and mapping instrument usage and statutes and ordinances pertaining to professional practice.

Critical Thinking

2. Define problems, formulate solutions, assess legal evidence, interpret statistical results, design a system or process, and understand professional and ethical issues.

Communication

3. Create, interpret and analyze written text, oral messages and multimedia presentations.

Curriculum Map

I = Introduced; R = Reinforced; A = Assessed

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
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Assessment Types

- Labs
- Projects
- Papers
- Exams
- Presentations