

## Entry Requirements

### Bachelors of Science in Surveying & Geographic Information Sciences (BSc . SGIS)

#### Level 1 Requirements

5 CSEC/GCE O-Level passes including English Language, Maths and 3 other approved subjects. Preferred subjects are : Physics, Geography, Technical Drawing, Information Technology, Computer Science, Elementary Surveying (offered by some secondary schools as a CSEC equivalent), Additional Mathematics, and Engineering Science.

#### PLUS

#### Level 2 Requirements

**Four (4)** CAPE units or **Two (2)** A Level in subjects from : Mathematics (pure), Mathematics (applied), Physics, Geography, Information Technology, Computer Science, Technical Drawing / GMED. Other subjects may be considered.

#### OR

Successful completion of UTech's Prerequisite Course of Study ( PCS) with a minimum GPA of 2.30. Entry to the PCS requires the five (5) CSEC or GCE subjects indicated above. Interview may be required

#### OR

An Associate Degree in Surveying and Geographic Information Technology (SGIT) with a minimum GPA of 2.70. Successful application using this route, will be advanced placed to level 2 in the BSc SGIS course.

#### Job Opportunities

- Surveying and Mapping Division of the National Land Agency
- National Environment and Planning Agency
- National Works Agency
- Professional Surveying Firms
- Geographic Information Systems Firms
- Urban Development Corporation
- Jamaica Bauxite Institute
- Bauxite Mining Companies
- Civil Engineering Firms
- Research & Teaching
- Positions in other territories in related Surveying, GIS and related fields
- Etc.

#### Affiliate Organisations

- International Federation of Surveyors (FIG)
- Land Surveyors Association of Jamaica (LSAJ)
- Royal Institute of Chartered surveyors (RICS)
- Commonwealth Association of Surveyors & Land Economists



University of Technology, Jamaica  
Faculty of the Built Environment  
School of Building & Land Management



#### FOR FURTHER INFORMATION CONTACT

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Division of Land Surveying & Geographic Information  
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# SGIS

**Bachelor of Science (BSc.) in  
Surveying (Land) and Geographic  
Information Sciences**

## Bachelor of Science Degree in Surveying & Geographic Information Sciences (BSc SGIS)

The Bachelor of Science Degree in Surveying & Geographic Information Sciences (SGIS), is a comprehensive course of study that incorporates several branches of land surveying with newer sub-disciplinary areas within the geospatial spectrum. The branches of land surveying covered in the course, include: Cadastral, Topographical, Engineering, Hydrographic and Geodetic Surveying. Sub-disciplinary areas include Global Navigation Satellite Systems (GNSS), Geographic Information Sciences/Systems (GIS), Photogrammetry, Remote Sensing and Cartography among others. The course is accredited by the University Council of Jamaica (UCJ) and recognised by professional organisations such as the International Federation of Surveyors, The Land Surveyors Association of Jamaica, Jamaica's Land Information Council, etc.

The course has for many years successfully produced graduates possessing a wide spectrum of knowledge, skills and competences in Land Surveying, GIS and related fields. Graduates will have developed sufficiently to make valuable contributions to the development of professions in spatial sciences industries. They will have capabilities to work, for example, as practitioners, consultants, managers, educators and researchers.



The disciplines of Land Surveying and GIS are primarily concerned with data gathering regarding the measurement of land forms and features, the recording of relevant data and

the manipulation of the data for the production of information relevant to the use and management of this important resource. Since land is at the base of all human activities, the measurement, representation and management of this vital resource is extremely important. Critical decision making for land management such as land titling, conveyancing, appropriate designs and setting-out of the built environment, rely heavily on the activities of Land Surveyors and GIS specialists.

Our programme strives to keep abreast of the research and technologies that are involved in the development of the field. Hence 'Geomatics' is the emerging term that describes the make-up of our courses of study. **Geomatics** is an umbrella term for spatial information sciences and related technologies. Thus, Land Surveyors and GIS specialists are referred to in some contexts as Geomaticians or Geomatics Engineers. Come join us in this exciting field of study with excellent prospects for work in multiple professional spheres.

## Course Duration & Programme Content

In the full-time mode, the course is offered over four years. Students desirous of taking less than the full workload may extend their study period for an additional three years. Some of the core subjects areas are Plane Surveying, Geodetic Surveying, Cadastral Surveying, Engineering Surveying, Hydrographic Surveying, Geographic Information Systems, Cartography, Remote Sensing, GNSS, Project Management, Land Management, Land Law and Computer Applications. A high degree of participation in field and computer lab practical activities and on-site visits is required of SGIS students. Students are also required to engage in a structured professional practice and relevant internship best practices in order to develop work-based competences.

## Sub-disciplines in the BSc SGIS Course of Study

### Cadastral Surveying

Cadastral surveying is concerned with the legal determination of boundaries and areas of land properties. Under land titles laws, any conveyance or other instrument in writing, effecting a division of land and delivered for registration, must be accompanied by a land boundary plan. The sub-division design and layout of land are also aspects of this branch of surveying. Professional qualification is required in Jamaica and other jurisdictions to carryout legitimate cadastral work.

### Engineering Surveying

This type of surveying is an integral part of civil engineering projects. The preparation of initial survey plans for detailed design, setting out of critical points for construction and the measurement and monitoring of civil structures are types of works under this branch of surveying. Civil Engineering Surveying is a very active area of work, particularly where large civil projects such as highways, roads, railways, bridges, multi-complex commercial and residential developments, etc, are conducted.



### Geodetic Surveying

Geodetic Surveying focuses on high precision national and international control networks of points marked and measured for mapping as well as for tectonic studies and determination of the earth's shape.

## Global Navigation Satellite Surveying

The Global Navigation Satellite Surveying (GNSS) utilises the modern technology of navigation and positioning using systems such as GPS. These systems provide autonomous geo-spatial positioning of points using equipment capable of receiving signals from satellites and processing data using computer software.

## Hydrographic Surveying

Safe navigation, sub-aqueous construction and near shore civil works require knowledge of the depth and topography of the water bodies such as seabed. Hydrographic Surveying is the field of study and practice that deals with these activities. Other applications include:- measurement of water current, location of rocks, bars, lights and buoys, determination of channel depth and preparation of charts, etc.



## Geographic Information Science



Geographic Information Science (GIS) integrates the logic of the relationship between spatial data with sophisticated software and hardware to create realistic simulation of the real world, to support a wide range of

analytical applications. GIS can be found at work in many sectors including utilities, land management, physical and economic planning, natural resource management, public safety, defence, etc. Students will cover the concepts, sciences and application involved in this exciting emerging discipline.



*SGIS - Higher education for the spatially intelligent!*