

# Diploma in Land Surveying/BSc (Hons) Geomatics – (4 Years - Part-Time) E352P

## 1. Context and Objectives

The aim of this programme is to provide an in-depth knowledge of the theory and methods in land surveying, mapping, cartography, photogrammetry, geographical information systems, and remote sensing, in order to prepare a skilled workforce in the field of Geomatics to meet regional, national, and international needs.

This BSc programme equips students with the knowledge and competencies required in order to excel in the fields of land administration and management, acquisition of spatial data, spatial data management, planning, legal matters, disaster management, and social and environmental issues. Students will also be exposed to the latest tools and technologies such as global navigation satellite systems, smart sensors, web-based GIS, and mobile technologies. This programme will also serve as a pathway for advance studies in the fields of Geomatics, Geo-Informatics, Land Surveying, Spatial Planning, Disaster Management, Hydrographic Survey, Marine Spatial Planning and Environmental Management.

The programme consists of four (4) years or levels.

Levels 1 modules are foundation modules for the more advanced modules to be offered in levels 2, 3 and 4. In addition, in level 1 strong emphasis is placed on communication skills with regards to reporting, oral presentation and data presentation during field work.

Level 2 modules build on level 1 to strengthen the mathematical analytical skills of the students. In this year, students get to learn more about legislation and regulations pertaining to land development and land valuation. The module GIS and RS is a foundation module introduced in Level 2 with the purpose of linking field survey to information systems. In addition, this module provides the basis for the more advanced related modules in Levels 3 & 4. The first two years of the programme provides training at technician level in the field of land surveying.

Level 3 modules are specialist modules and include the Hydrographic Surveying module which is about survey of the submerged structures in the sea and the seabed. As from this level, students get to learn about the various areas in which field surveys on land and at sea are integrated with information systems. A mini project is included in this level, to train students in conducting research studies.

### Level 4 modules

In this level, the module Physical Planning and Planning Tools, addressed planning tools for the marine environment, Marine Spatial Planning. The module Project and Real Estate Management supports understanding on the importance of sound survey techniques in land development. In this level, students undertake a final year research project where they are expected to illustrate sound survey skills and use of technologies for improving understanding of a particular research problem.

## Objectives

The objectives of the programme are to:

- Provide students with both foundation skills and practical skills that will train them for the Surveying profession,
- Engage students in practical sessions, field work and different activities which involve problem based learning skills.

- Provides students with the skills required for effective communication and lifelong learning skills.
- Enables students to appreciate the applicability of surveying techniques coupled with technology, such as remote sensing and geographical information systems to build database of spatial nature.
- Enables students to look into the possibility of creating their own enterprise

### **Competencies**

After successful completion of this programme, students should be equipped with the following competencies:

- analytical, problem solving skills
- effective communication skills, adaptability and flexibility
- project management and entrepreneurial skills
- technical skills required for a surveyor
- technical skills required for a spatial data analysis expert

### **2. Learning Outcomes**

At the end of this programme, the student should be able to:

- Conduct field surveys with high levels of accuracy
- Prepare both digital and hard copy maps from field survey data
- Undertake spatial data analysis using digital spatial database
- Prepare land cover maps to monitor long term changes in land development using satellite imageries
- Use spatial information systems to improve decision making.
- Evaluate prices of land based on current and upcoming development
- Undertake Hydrographic survey
- Work in teams and use effective communication skills, verbal, technical and written.

### **3. Teaching and Learning Methods**

Modules shall be taught over a period of 10 weeks. Each module shall include 3hours of contact per week, 6 hours of self study and 9 hours of other learning activities per week over the whole semester/year. The 30 hours of contact over a semester shall include, class hours, blended learning, tutorials and practicals (where applicable).

The teaching methods include:

- Face-to-face delivery
- Online delivery/ blended mode
- Practical sessions
- Tutorial sessions
- Class activities
- Field activities

Learning methods include the following among others:

- research and group work;
- Attending Workshops/Conferences recommended by the Department/Faculty;

- Site Visits/Trips;
- Field work
- Class Presentation/ Viva/ Demo;
- Experiential Learning;
- Placements/Internships;
- Guest lectures;
- Dissertation/ Project

#### 4. Entry Requirements

##### General

As per General Entry Requirements for admission to the University for Undergraduate Degrees.

##### Programme (Specific)

Credits in 5 GCE 'O' Level subjects including Mathematics and Physics and 2 GCE 'A' Level passes including Mathematics and a science subject.

#### 5. Programme Duration

	Normal (Years)	Maximum (Years)
<b>Degree:</b>	4	6
<b>Diploma:</b>	2	4

#### 6. Minimum LCCS Credits Required:

##### For Degree Award

Modules	Credits
Minimum LCCS Credits for Core Modules	186
Dissertation	18
<b>TOTAL</b>	<b>204</b>

##### For Diploma award

After successfully completing all levels 1 & 2 modules, a Diploma in Land Surveying will be awarded to the student.

Modules	Credits
Minimum LCCS Credits for Core Modules	96
Mini Project	6
<b>TOTAL</b>	<b>102</b>

## **7. Assessment and Deadlines**

The assessment for each module may be based on one or a combination of the following:

- Examination
- Continuous Assessment (class tests, assignments, activities, practicals and oral presentations)
- Report Assessment (Final Year Project)

Assessment will be based on written examination (except for specific modules indicated) and continuous assessment (CA).

The weight of the CA will be at least 40%, while examination may carry up to 60% of the total marks. The specific details and/or formula for the calculation of the final mark are provided in the Module Specification Sheet (MSS) for each module.

The written examination will be of 2 hour duration for semester modules and 3 hours duration for yearly modules. An overall total of 40% for combined continuous and written examination components will be required to pass the module, without minimum thresholds within the individual continuous assessment and written examination. Written examination for the semester modules will be carried out at the end of the respective semester.

Module CIVE 1130(1) Professional Communication & IT and Module CIVE 2022Y(3) Spatial Info Applications are entirely coursework assessed.

The Mini Project CIVE 3200(5) and the Dissertation CIVE 3000Y(5) (final year project) will be submitted according to UoM rules and regulations.

Information regarding the classification of award and student grading is provided in the university regulations.

## 8. List of Modules

Code	Module Name	<sup>1</sup> L*/T*/P* (Contact Hours)	<sup>2</sup> Self-Study hrs	<sup>3</sup> Other Learning hrs	<sup>4</sup> LCCS Credits
CIVE 1012Y(1)	Geomathematics	60	120	180	12
CIVE 1129(1)	Waves & Optics	30	60	90	6
CIVE 1014Y(1)	Mapping, Cartography and Photogrammetry	60	120	180	12
CIVE 1015Y(1)	Surveying I	60	120	180	12
CIVE 1130(1)	Professional Communication & Information Technology	30	60	90	6
CIVE 2018Y(3)	Surveying II	60	120	180	12
LAW 1124Y(3)	Land Law I & II	60	120	180	12
CIVE 2021Y(3)	Statistics & Numerical Methods	60	120	180	12
CIVE 2019Y(3)	Land Information Systems, Land Development and Valuation	60	120	180	12
CIVE 1016Y(1)	Geographical Information Systems & Remote Sensing	60	120	180	12
CIVE 1017Y(1)	Computing for Geomatics	60	120	180	12
CIVE 2022Y(3)	Spatial Info Applications	60	120	180	12
CIVE 2017Y(3)	Hazards, Mapping & Community Empowerment	60	120	180	12
CIVE 3025Y(5)	Hydrographic Survey	30	60	90	6
CIVE 3200(5)	Mini Project	10	110	60	6
CIVE 3024Y(5)	Project & Real Estate Management	60	120	180	12
CIVE 3026Y(5)	Physical Planning & Planning Tools	60	120	180	12
CIVE 3126(5)	Entrepreneurship & Marketing	30	60	90	6
CIVE 3000Y(5)	Dissertation	10	380	150	18
CIVE 1240	Industrial Training	-	-	-	-

**Note:**

<sup>1</sup>Contact Hours; L\*=Lectures, T\* = Tutorials, P\* = Practicals

<sup>2</sup> and <sup>3</sup> are detailed in the Programme and Module Catalogues.

<sup>4</sup>The LCCS Credits

## 9. Programme Plan

<b>LEVEL 1 – SEMESTERS 1&amp; 2</b>			
<b>Code</b>	<b>Module Name</b>	<b><sup>1</sup>L*/T*/P* (Contact Hours per Week)</b>	<b><sup>4</sup>LCCS Credits**</b>
CIVE 1012Y(1)	Geomathematics	2+2	12
CIVE 1129(1)	Waves & Optics	2+2	6
CIVE 1014Y(1)	Mapping, Cartography and Photogrammetry	2+2	12
CIVE 1015Y(1)	Surveying I	2+2	12
CIVE 1130(1)	Professional Communication & IT	2+2	6
CIVE 1240	Industrial Training	-	-
<b>TOTAL</b>			<b>48</b>

<b>LEVEL 2 – SEMESTERS 1&amp; 2</b>			
<b>Code</b>	<b>Module Name</b>	<b><sup>1</sup>L*/T*/P* (Contact Hours per Week)</b>	<b><sup>4</sup>LCCS Credits**</b>
CIVE 2018Y(3)	Surveying II	2+2	12
LAW 1124Y(3)	Land Law I & II	3+0	12
CIVE 2021Y(3)	Statistics & Numerical Methods	2+2	12
CIVE 2019Y(3)	Land Information Systems, Land Development and Valuation	3+0	12
CIVE 3200(5)	Mini Project	1+0	6
<b>TOTAL</b>			<b>54</b>

<b>LEVEL 3 – SEMESTERS 1&amp; 2</b>			
<b>Code</b>	<b>Module Name</b>	<b><sup>1</sup>L*/T*/P* (Contact Hours per Week)</b>	<b><sup>4</sup>LCCS Credits**</b>
CIVE 1017Y(1)	Computing for Geomatics	2+2	12
CIVE 2022Y(3)	Spatial Info Applications	2+2	12
CIVE 2017Y(3)	Hazards, Mapping & Community Empowerment	2+2	12
CIVE 3025Y(5)	Hydrographic Survey	2+2	6
CIVE 1016Y(1)	Geographical Information Systems & Remote Sensing	2+2	12
<b>TOTAL</b>			<b>54</b>

<b>LEVEL 4 – SEMESTERS 1&amp; 2</b>			
<b>Code</b>	<b>Module Name</b>	<b><sup>1</sup>L*/T*/P* (Contact Hours per Week)</b>	<b><sup>4</sup>LCCS Credits**</b>
CIVE 3024Y(5)	Project & Real Estate Management	3+0	12
CIVE 3026Y(5)	Physical Planning & Planning Tools	3+0	12
CIVE 3126(5)	Entrepreneurship & Marketing	3+0	6
CIVE 3000Y(5)	Dissertation	1+0	18
<b>TOTAL</b>			<b>48</b>
<b>GRAND TOTAL</b>			<b>204</b>

**For the BSc Award, students have to complete ALL core modules.**