

## Diploma in Land Surveying: - E202

### 1. Aims and Objectives

The objective behind this course is to provide training at technician level to students in the field of Land Surveying. The course content has been structured to give the student a good understanding of the various aspects of the profession.

### 2. General Entry Requirements

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

### 3. Programme Requirements

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

### 4. Credits per Semester: Minimum 3 credits.

### 5. Programme Duration

	Normal (Years)	Maximum (Years)
Diploma	3	5

### 6. Minimum Requirements for the award of the Diploma

Minimum number of credits for the award of Diploma is 64.

#### Note 1: Core Modules

Students should satisfy **all core modules** to be eligible for the award of the Diploma.

#### Note 2: Industrial Training

The student will be required to undertake vacation training over a period of 8 weeks, after the Year 1, Semester 2. Industrial training must be completed satisfactorily for the award of the project.

#### Note 3: Diploma project

Dissertation/Project work to be carried out in level 2 will have a load equivalent of 6 hours per week.

#### Note 4: Field Work

Students will be required to carry out two weeks of field work at the end of Level 1.

#### Note 5: Land law I & II

The Land Law I & II examination papers will be of 3 hours duration and will be taken at end of Levels 1 & 2.

### 7. Assessment

All modules will carry 100 marks and will be assessed as follows (unless otherwise specified):

Assessment will be based on written examinations of 2-hours duration except where otherwise specified. Continuous assessment carrying up to 40% of total marks will be based on fieldwork, assignments and class tests.

For a student to pass a module, a minimum of 30% should be attained in both Continuous Assessment and Written Examination separately, with an overall total of a minimum of 40% in that module.

There is no level weightage to modules; i.e. each module carries its credit value.

Dissertation will carry a weightage of 6 credits.

## 8. Lists of Modules

### CORE MODULES

Code	Module Name	Hrs/wk L+P	Credit
CIVE 1122D(1)	Introduction to IT	3+0	3
CIVE 1123D(1)	Plane Surveying	3+1	3.5
CIVE 1125D(1)	Environmental Management	3+0	3
CIVE 1202D(1)	Mapping	3+0	3
CIVE 1225D(1)	Data Acquisition	3+0	3
CIVE 2122D(3)	Engineering Surveying	3+0	3
CIVE 2123D(3)	Physical Planning	3+0	3
CIVE 2221D(3)	Land Information Management	3+0	3
CIVE 2222D(3)	Geodetic Surveying	3+0	3
CIVE 2225D(3)	Land Development	3+0	3
CIVE 2030D(3)	Diploma Project	-	6
CIVE 1220D(1)	Industrial Training	-	-
ELEC 1203(1)	Measurement Science	3+1	3.5
LAW 1124D(1)	Land Law I	6+0	6
LAW 2224D(3)	Land Law II	6+0	6
MATH 1102D(1)	Mathematics I	3+0	3
MATH 1203D(1)	Mathematics II	3+0	3
MATH 2101D(3)	Survey Mathematics	3+0	3
MGT 1111(1)	Organisation and Management	3+0	3
PHY 1121(1)	Waves and Optics	3+0	3

## 9. Programme Plan

### Level 1

#### Semester 1

MATH	1102D(1)	Mathematics 1
CIVE	1122D(1)	Introduction to IT
CIVE	1123D(1)	Plane Surveying
LAW	1124D(1)	Land Law 1

#### Semester 2

MATH	1203D(1)	Mathematics 2
CIVE	1202D(1)	Mapping
ELEC	1203(1)	Measurement Science
LAW	1124D(1)	Land Law 1 (Ctd)
CIVE	1220D(1)	Industrial Training

### Level 2

**Semester 1**

		Survey
MATH	2101D(3)	Mathematics
CIVE	1225D(1)	Data Acquisition
CIVE	1125D(1)	Environmental Management
CIVE	2224D(3)	Land Law 2

**Semester 2**

CIVE	2122D(3)	Engineering Surveying
PHY	1121(1)	Wave & Optics
CIVE	2123D(3)	Physical Planning
CIVE	2224D(3)	Land Law 2 (Ctd)

**Level 3****Semester 1**

CIVE	2030D(3)	Project Land Information
CIVE	2221D(3)	Management Geodetic
CIVE	2222D(3)	Surveying

**Semester 2**

CIVE	2030D(3)	Project
CIVE	2225D(3)	Land Development Organisation &
MGT	1111(1)	Management

**10 Outline Syllabus****CIVE 1122D(1) - INTRODUCTION TO IT**

Computers. Familiarisation with the terminology of information technology, networks, operating systems. Word processing. Spreadsheets. Processing of land survey data. Computer aided design.

**CIVE 1123D(1) - PLANE SURVEYING**

Fundamental concepts. Modern survey techniques: handling of modern survey instruments for making linear, angular and elevation measurements. Survey computations and non-rigorous adjustments. Field applications.

**CIVE 1125D(1) - ENVIRONMENTAL MANAGEMENT**

Concept of sustainable development. Environmental management tools including EIA. Environmental Legislation. Environmental problems in Mauritius. Coastal zone management.

**CIVE 1202D(1) - MAPPING**

The concepts of mapping. Data input to mapping (field procedures and practice for detailed survey). Data processing and compilation.

**CIVE 1225D(1) - DATA ACQUISITION**

Digital mapping. Photogrammetry. Remote sensing. Project planning and revision.

**CIVE 2122D(3) - ENGINEERING SURVEYING**

Control surveys for Engineering projects. Earthworks. Setting out. Underground surveying. Laser surveying. Hydrographic surveying.

**CIVE 2123D(3) - PHYSICAL PLANNING**

The nature and objectives of physical planning. National, regional and local planning. The origins of planning in Mauritius; current planning procedures, the preparation of plans for development and development control. Information requirements for planning. Transportation studies.

**CIVE 2221D(3) - LAND INFORMATION MANAGEMENT**

LIS/GIS: data importing/format; data processing/handling, data management, dissemination.

The Registry system: Deed system, title register system

Database design, conceptual models

General boundary/fixed boundaries

**CIVE 2222D(3) - GEODETIC SURVEYING**

Fundamentals of Geodetic Surveying. The ellipsoid and geoid. Satellite geodesy. Heighting.

**CIVE 2225D(3) - LAND DEVELOPMENT**

Land as an economic concept; the operation of the land market. Land use and land values. Principles of valuation. Land reform; its operation and justification. National planning: the cost and implementation.

Land use studies; reconciliation of conflicting interests in land use.

**CIVE 2030D(3) - DIPLOMA PROJECT**

**CIVE 1220D(1) - INDUSTRIAL TRAINING**

**ELEC 1203(1) - MEASUREMENT SCIENCE**

Distance, Height and Angular Measurement Characteristics of Measuring Systems Elements.

Measurement of electrical parameters. Measuring instruments.

**LAW 1124D(1) - LAND LAW I**

An introduction to the laws of Mauritius. Land jurisdiction in Mauritius. Protection of property. Legislation relating to State owned or Controlled property. Land taxation. Restrictions of property development. Agricultural uses of land. Surveying and land acquisition.

**LAW 2224D(3) - LAND LAW II**

The Civil Code and Cognate Legislation: A brief outline of Civil Status, filiation, adoption, 'Puissance Paternelle' and guardianship; The law of property movables and immovables, ownership, usufruct, servitudes; Acquisition of property, succession and wills, donations, contract and 'obligations', prescription, curatelle, Sales by levy and licitation, partition, Compulsory land acquisition (compensation); Sale, exchange, lease and hire, association, loan deposit, agency, surety, pledge; Tort with particular reference to torts relating to land.

Registration and Transaction; Transcription and mortgage, privilege prescription, affidavits of prescription; Registration dues, succession and donation duties, registration of documents, stamp duty, deposit and custody of documents.

**MATH 1102D(1) - MATHEMATICS I**

Operations on rational algebraic expressions. Expanding products and factorisation. Linear and quadratic equations. Indices and logarithms. Functions and graphs. Elementary trigonometric identities. Sine and Cosine rules. Distances from coordinates. Areas and volumes of planar and spatial figures Differential calculus. Spherical trigonometry.

**MATH 1203D(1) - MATHEMATICS II**

Matrix algebra. Vector algebra. Numerical methods, Simpson's rule. Statistics: error analysis, standard deviation, rejection criteria. Probability and frequency distributions. Propagation of random errors.

**MATH 2101D(3) - SURVEY MATHEMATICS**

Numerical methods: Gauss-Siedel and Newton-Rapson methods. Transformation and projections. Geometry: conic sections. Ellipse and ellipsoid, radii and curvature. Orbital motion: Kepler's laws, motion of artificial satellites. Statistical analysis: least square techniques, propagation of errors, network analysis.

**MGT 1111(1) - ORGANISATION AND MANAGEMENT**

Introduction to Management. The Evolution of Management. Managerial Roles and Functions. Planning. Decision -Making. Organising. Motivation. Leadership. Controlling.

**PHY 1121(1) - WAVES & OPTICS**

Simple harmonic motion. Theory of oscillations and waves. General wave properties. Refraction, dispersion, interference, interferometry. Diffraction, resolution. Doppler effect and uses. Polarisation. Attenuation. Geometric optics prisms and lenses. Abberation. Application remote sensing.