

REGULATIONS AND SYLLABUS FOR THE MASTER OF SCIENCE IN GEOGRAPHIC INFORMATION SYSTEMS

1. INTRODUCTION

The proliferation of numerous applications in Geographic Information Systems (GIS) has generated a great demand for well trained personnel, especially in developing countries like Kenya where the GIS industry is still young but growing fast. In response to this demand, and within the realm of Continuous Professional Development (CPD), the Department of Surveying, University of Nairobi, has been offering short (certificate) courses in GIS for the last three years. Experience gained from this CPD programme indicates that most of the professionals currently working in the local GIS industry lack formal GIS training and the required capacity to effectively manage GIS projects. The above factors provide the impetus for launching the proposed Master of Science in Geographic Information Systems (M.Sc.(GIS)). This programme is designed to accommodate the diverse interests of professionals from different backgrounds currently working or aspiring to work in the GIS industry. This is pertinent especially given the multidisciplinary nature of GIS.

The Objectives of the course are to:

- Equip students with the relevant skills and knowledge to pursue careers in the GIS industry as GIS practitioners and educators.
- Provide students with comprehensive knowledge of the functionality and applications of GIS technology.
- Expose students to the design and implementation of GIS projects.
- Equip students with the relevant skills and knowledge to carry out research in GIS.

2. ENTRY REQUIREMENTS

- 2.1 The common regulations for the Masters degrees in the University of Nairobi shall apply.
- 2.2 The following shall be eligible for admission:
 - 2.2.1 Holders of a Bachelor's degree in any geoinformation related discipline with at least lower second class honours of the University of Nairobi, or equivalent qualifications from other institutions recognized by the Senate.
 - 2.2.2 Holders of a Bachelor's pass degree with a Postgraduate Diploma in Geographic Information Systems (P.G. Dip.(GIS) or equivalent qualifications from other institutions recognized by the Senate.

- 2.2.3 Holders of a Bachelor's pass degree in any geoinformation related discipline and three years experience in GIS.

3. EXEMPTION OF COURSE UNITS

A candidate may be exempted from some course units from Institutions recognized by the Senate, subject to the following conditions:

- 3.1 Must have passed in similar course units at Master's level.
- 3.2 Request of exemption should be made in writing, on a admission, addressed to the Director of Board of Postgraduate Studies and should be accompanied by officially endorsed supporting documents for the relevant course.
- 3.3 Payment of the prescribed exemption fees.
- 3.4 No candidate shall be exempted for more than one third of the total number of units required in the course.
- 3.5 Holders of a Postgraduate Diploma in Geographic Information Systems or its equivalent shall be exempted from any course units undertaken and passed in the Postgraduate Diploma programme. Holders of the Postgraduate Diploma in Geographic Information Systems shall be allowed to join the second year of the M.Sc. (GIS) programme only after successful completion of the prescribed courses in the M.Sc.(GIS) programme.

4. COURSE STRUCTURE AND DURATION

- 4.1 The course shall run over a minimum period of four (4) semesters and a maximum of ten (10) semesters of fifteen (15) weeks each.
- 4.2 The course shall be by course work, examination and research project.
- 4.3 The course mark shall consist of eleven (11) core course units, two (2) electives and research project report.
- 4.4 The first year of study shall be totally devoted to course work, while the second year shall be devoted to course work and the research project.
- 4.5 In each of the two semesters of the first year, students shall be required to take up to five (5) core course units.
- 4.6 During the first semester in the second year of study, students shall be required to take (1) core course units and two (2) electives.
- 4.7 The Department reserves the right to decide the electives to offer in any academic year.
- 4.8 The second semester of the second year shall be completely devoted to the research project.

5. COURSE OUTLINE

CORE COURSES

CODE:	TITLE	HOURS
FGS 601	Geoinformatics	45
FGS 603	Fundamentals of Mapping	45
FGS 605	Research Methodology	45
FGS 607	GIS Software Systems	45
FGS 609	GIS Database Systems	45
FGS 604	GIS Programming	45
FGS 606	Spatial Data Infrastructure	45
FGS 608	Surface Modelling	45
FGS 610	Digital Cartography	45
FGS 701	GIS Project Management	45
FGS 703	GIS in Practice	45
FGS 705	Project Proposal	45
FGS 722	Research Project	180

ELECTIVES

FGS 707	Digital Photogrammetry	45
FGS 709	Remote Sensing	45
FGS 711	Satellite Positioning Systems	45
FGS 713	Land Information Systems	45
FGS 715	Digital Image Analysis	45
FGS 717	Spatial Data Mining	45
FGS 719	Cartographic Animation	45
FGS 721	Web-Based Mapping	45

6. EXAMINATION REGULATIONS

The common regulations governing examinations for the Master's Degree in the University of Nairobi shall apply.

6.1 Written Examination Regulations

- 6.1.1 All course units taken in a given semester shall be examined at the end of that semester.
- 6.1.2 A candidate for the Master of Science in Geographic Information Systems shall be required to complete all course work and assignments.
- 6.1.3 All course units shall be examined by a three (3) hour written examination paper, except the course unit FGS 705.
- 6.1.4 The final written examination shall account for 70% of the marks in each course unit, while course work shall account for 30%.
- 6.1.5 The pass mark for each course unit shall be 50%.
- 6.1.6 A candidate who fails to obtain a pass mark in any course unit shall, on the recommendation of the Board of Examiners and approval by Senate, be allowed to re-sit or re-take the failed units in the next examination semester for a maximum of two times.

- 6.1.7 A pass obtained by re-sitting/re-taking a course unit shall be recorded as 50% in the student's academic record.
- 6.1.8 A candidate who fails a course unit in the second re-sit or re-take, or fails to complete the course in the prescribed time, shall on the recommendation of the Board of Examiners and approval by Senate be discontinued.

6.2 Research Project Report

- 6.2.1 Candidates shall be required to submit a research project report to the Department for examination at least two weeks before the end of the second semester.
- 6.2.2 The project shall be graded out of 100 marks.
- 6.2.3 The final assessment shall be based on the maximum of 70% for the written research project report and 30% for the oral presentation and subsequent defence.
- 6.2.4 The pass mark shall be 50%.
- 6.2.5 A candidate who fails to obtain the pass mark in the research project report shall on the recommendation of the Board of Examiners be allowed to re-submit the project report up to a maximum of two times.
- 6.2.6 A pass obtained after re-submission of the project report shall be recorded as 50%.
- 6.2.7 A candidate who fails to obtain the pass mark in the project report at the second re-submission or fails to complete the course within the prescribed period shall on the recommendation of the Board of Examiners and approval by Senate be discontinued.

7. DEGREE AWARD

Candidates who are successful shall be awarded the degree of a Master of Science in Geographic Information Systems.