NJALA UNIVERSITY

School of Environmental Sciences

UNDERGRADUATE STUDENT HANDBOOK · 2025

Dean	Dr. Morrison Kenie Lahai
School	School of Environmental Sciences
University	Njala University, Sierra Leone
Programmes Offered	9 Undergraduate Programmes
Academic Year	2025 / 2026

Empowering Environmental Professionals for a Sustainable Future

MESSAGE FROM THE DEAN

Name	Dr. Morrison Kenie Lahai
Title	Dean of School
Qualifications	PhD Development Studies | MSc Rural Development Studies | Postgraduate Diploma in Quality Assurance in HEIs | BSc Edu. (Geog/Biology)

On behalf of the School of Environmental Sciences, Njala University, I greet you all. The School of Environmental Sciences is the main hub for training environmentalists and development practitioners in Sierra Leone. The School has enriched programmes that have been developed to meet the needs of sustainable development for the 21st century.

Programmes ranging from Geography and Geographic Information Systems, Environmental Management and Quality Control, Climate Change and Disaster Management, Environment and Sustainable Development, Occupational Health and Safety, Development and Rural Development Studies, and Land Resources Management have been developed to give a wider range of choices to candidates who wish to enrol in the Environmental Sciences at Njala University.

This handbook is designed to guide undergraduate students through their academic journey at the School of Environmental Sciences. It outlines the nine undergraduate programmes offered, the academic requirements, assessment policies, and the resources available to support student success. We encourage every student to read this handbook carefully and to refer to it throughout their studies.

We wish all our students a rewarding and enriching academic experience.

Dr. Morrison Kenie Lahai
Dean, School of Environmental Sciences Njala University, Sierra Leone

SCHOOL OFFICERS AND ACADEMIC STAFF

Officers of the School

No.	Name	Credentials	Designation
1	Dr. Morrison Kenie Lahai	PhD	Dean
2	Ms. Fatmata Conteh	BSc	Administrative Assistant

Academic Staff — Institute of Geography and Development Studies (IGDS)

No.	Name	Qualifications	Designation
1	Mrs. Victoria Nancy Blango	M.A. Population Studies, USL; PG Diploma Population Studies, USL; BSc (Hons) Environmental Sciences, USL	Director
2	Prof. Victor Tamba Simbay Kabba	PhD Land Resources Management, China; MSc Geography, NU; BSc Ed. Geog/Biology, NU	Associate Professor
3	Dr. Morrison Kenie Lahai	PhD Development Studies, NU; MSc Rural Development Studies, NU; PG Diploma Quality Assurance in HEIs, UNIMAK; BSc Edu. (Geog/Biology), NU	Senior Lecturer
4	Dr. Lamin Rahman Mansaray	PhD Agricultural Remote Sensing and Information Technology, China; MSc Cartography and GIS, China; BSc Edu. (Geog/Biology), NU	Lecturer I
5	Mr. Mohamed Jalloh	MSc Rural Development Studies, NU; BSc Edu. (Geog/Biology), NU	Lecturer I
6	Mr. Alpha Sesay	MSc Development Studies, NU; BSc (Hons) Development Studies, NU	Lecturer I
7	Mr. Saffa Lansana	MSc Geographic Information System, NU; BSc (Hons) Geography, NU	Lecturer II

Academic Staff — Institute of Environmental Management and Quality Control (IEMQC)

No.	Name	Qualifications	Designation
1	Dr. Prince Togor Mabey	PhD Environmental Sciences, China; MSc Environmental Conservation, NU; PG Diploma in Education, NU; BSc (Hons) Biological Sciences	Director
2	Mr. Joe Beah	MSc EMQC, NU; BSc EMQC, NU	Lecturer I
3	Mrs. Mariatu Barrie Sam	MSc EMQC, NU; BSc ENQC, NU	Lecturer I
4	Mr. Hadji Kallon	MSc EMQC, NU; BSc ENQC, NU	Lecturer I
5	Mr. Foday Bainda	MSc EMQC, NU; BSc ENQC, NU	Lecturer II

SUMMARY OF UNDERGRADUATE PROGRAMMES

No.	Department / Institute	Programme(s)
1	Institute of Environmental Management and Quality Control (IEMQC)	BSc Hons Environmental Management and Quality Control (EMQC)
		BSc Hons Disaster Management and Climate Change Adaptation
		BSc Hons Environment and Occupational Health

No.	Department / Institute	Programme(s)
2	Institute of Geography and Development Studies (IGDS)	BSc Hons Development Studies
		BSc Hons Rural Development Studies
		BSc Hons Environment and Sustainable Development
		BSc Geography and Information System
3	Department of Land Management	BSc Hons Land Resources Management
4	Institute of Surveying and Geo-informatics	BSc Hons Surveying and Geo-informatics

PROGRAMME 1 — BSc Honours in Disaster Management and Climate Change Adaptation

Department / Institute	Institute of Environmental Management and Quality Control (IEMQC)
Degree Designation	B.Sc. (Hons.) Disaster Management and Climate Change Adaptation
Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction

Disaster risk management (DRM) and climate change adaptation (CCA) are both sets of actions that help reduce the risk of disasters and their impact on people and the environment. Disaster risk management involves preparing for and responding to potential disasters in a timely and effective manner, with the goal of creating an environment that reduces the negative effects of hazards. Climate change adaptation involves taking long-term actions to help people adjust to the impacts of climate change, such as extreme weather events, sea level rise, and food insecurity.

This programme aims to teach students how to use interdisciplinary methods and tools to help build resilient societies. Students develop skills in risk assessment, risk communication, capacity assessment, and preparedness and contingency planning. They also learn how to work on projects and develop capacity for disaster risk management and climate change adaptation in local, national, and international organisations.

Rationale

The rationale for this programme is to help build the skills needed to create more resilient and sustainable societies. By applying interdisciplinary concepts, students learn to use a variety of methods and tools from different disciplines, develop skills in risk assessment, risk communication, and capacity assessment, and contribute to research in the field. This programme strives to cultivate a new generation of leaders dedicated to creating more resilient and sustainable societies.

Aims, Goals and Objectives

- Building resilience: Students learn to build resilience in communities and societies using interdisciplinary methods and tools.
- Understanding risks: Students learn to understand the risks and threats associated with climate change and disasters.

- Developing adaptation strategies: Students learn to develop effective and just climate adaptation strategies.
- Improving coping capacity: Students learn to improve the coping capacity of affected social-ecological systems.
- Engaging all of society: Students learn to engage all of society in climate and disaster risk management.

Target Group

This programme is open to high school graduates in the basic and applied sciences, including mathematics, physics, chemistry, biology, geography, agriculture, and engineering science. It is intended for those wishing to pursue careers in development planning, environmental management, environmental assessment, spatial data analytics, health and safety, meteorology, and quality management.

Entry Requirements

General University Requirements

Five credits at G.C.E. 'O' Level or at W.A.S.S.C.E., including English Language, in not more than two (2) sittings. Candidates without English Language will be required to take the University Matriculation English examination.

Departmental Requirements

At least a grade six (6) or better in five subjects at G.C.E. 'O' Level or W.A.S.S.C.E., including at least two subjects from the following: mathematics, physics, chemistry, biology, agriculture, geography, and engineering science.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above

Class of Honours	FGPA Range
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- Capacity to understand and manage the different types of disasters, considering their specificities.
- Capacity to integrate knowledge and to analyse, evaluate, and manage the different public health aspects of disaster events and climate change at local and global levels.
- Capacity to describe, analyse, and evaluate the environmental, social, cultural, economic, legal, and organisational aspects influencing vulnerabilities and capacities to face climate change and disasters.
- Capacity to work theoretically and practically in the processes of disaster management — disaster risk reduction, response, and recovery — and to understand their interconnections.
- Capacity to analyse and evaluate research work in the field of emergencies and disasters while demonstrating insight into the potential and limitations of science.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
BIOL 111	Cell Biology, Genetics, Physiology and Microbiology	3
CHEM 111	General Chemistry I	3
MATHS 121	Pre-calculus	3
PHYS 111	Forces, Motion and Thermal Physics	3
GEOG 111	Introduction to Physical Geography	3
GEST 111	English Language	2
ICT 111	Information and Communication Technology I	3
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
BIOL 122	Introduction to Botany and Zoology	3
CHEM 122	General Chemistry II	3

COURSE CODE	COURSE TITLE	CR. HRS.
MATHS 122	Introduction to Calculus, Applied Maths and Statistics	3
PHYS 112	Radiation and Optics	3
GEOG 123	Introduction to Human Geography and Geography of Sierra Leone	3
GEST 112	English Language	2
ICT 122	Information and Communication Technology II	3
	SEMESTER TOTAL	**20**

SECOND YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 211	Introduction to Environmental Science	3
EOH 212	Introduction to Emergency and Crisis Management	3
EOH 213	Applied Meteorology	3
EOH 214	Basic Principles of Disaster Planning and Management	3
EOH 215	Introduction to Climate Breakdown	3
EOH 216	Principles of Environmental Management	3
ENG 201	English Language	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 217	Environmental Monitoring Techniques	3
EOH 218	Epidemiology	3
EOH 219	Human Anatomy and Physiology	3
EOH 2110	First Aid	3
EOH 2111	Introduction to Environment and Ecosystem	3
EOH 2112	Climate Change Adaptation and Disasters	3
ENG 202	English Language	2
	SEMESTER TOTAL	**20**

THIRD YEAR · 42 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 3113	Disasters and Sustainable Development	3
EOH 3114	Research Approaches in Disaster Management	3
EOH 3115	Community-Based Disaster Risk Management	3
EOH 3116	Disaster Risk Management	3
EOH 3117	Climate Change and Natural Hazards	3
EOH 3118	Introduction to Toxicology	3
EOH 3119	Climate Change Impacts, Mitigation and Adaptation	3
	SEMESTER TOTAL	21

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 3220	Environmental Impact Assessment	3
EOH 3221	Emergency and Disaster Management	3
EOH 3222	Environmental Pollution	3
EOH 3223	GIS and Remote Sensing in Disaster Management	3
EOH 3224	Vulnerability and Risk Assessment	3
EOH 3225	Climate-Smart Risk Reduction	3
EOH 3226	Group Seminar and Scientific Writing	3
	SEMESTER TOTAL	21

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 4127	Environmental Law and Policies	3
EOH 4128	Climatic Risk Modelling and Adaptation	3
EOH 4129	Climatic Hazards and Climate Change	3
EOH 4130	Environment and Hazards Management	3
EOH 4131	Natural Resources and Disasters	3
	SEMESTER TOTAL	15

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—

COURSE CODE	COURSE TITLE	CR. HRS.
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 2 — BSc Honours in Environment and Occupational Health

Department / Institute	Institute of Environmental Management and Quality Control (IEMQC)
Degree Designation	B.Sc. (Hons.) Environment and Occupational Health
Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction

Environmental and occupational health are intertwined disciplines focused on protecting human health from hazards in the environment and the workplace. The Bachelor of Science with Honours in Environment and Occupational Health aims to provide students with a comprehensive understanding of both disciplines. Environmental health focuses on how air, water, food, and the physical environment affect human health, while occupational health concentrates on maintaining the health of workers across different occupations.

Rationale

This programme offers a robust education in protecting human health and safety by managing environmental and workplace hazards. It provides a foundation for diverse careers in environmental consulting, industrial hygiene, safety management, and public health. The programme integrates knowledge from environmental science, public health, occupational health, and safety management. Students gain hands-on experience through laboratory work, site visits, and internships, preparing them for real-world challenges in government agencies, private sector organisations, and research institutions.

Aims, Goals and Objectives

1. Provide students with a comprehensive understanding of environmental science principles.
2. Equip students with practical skills in environment and occupational health.
3. Enhance students' ability to conduct scientific research and communicate findings effectively.
4. Encourage students to pursue further studies and research in environment and occupational health.
5. Foster responsible attitudes and ethical practices towards environmental stewardship and sustainability.

Target Group

This programme is open to high school graduates in the basic and applied sciences, including mathematics, physics, chemistry, biology, geography, agriculture, and engineering science. It is intended for those wishing to pursue careers in development planning, environmental management, environmental assessment, health and safety, meteorology, and quality management.

Entry Requirements

The same general university and departmental requirements apply as described under Programme 1.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- Ability to identify, assess, and manage environmental and occupational hazards to protect human health and the environment.
- Understanding of the principles of toxicology, epidemiology, and public health as they relate to environmental and occupational hazards.
- Competence in designing and implementing effective control measures to mitigate identified hazard risks.
- Strong communication skills to convey health and safety information to diverse audiences.
- Proficiency in environmental impact assessment, legal frameworks, and risk management strategies.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
BIOL 101	Cell Biology, Genetics, Physiology and Microbiology	3
CHEM 101	General Chemistry I	3
MATHS 121	Pre-calculus	3
PHYS 101	Forces, Motion and Thermal Physics	3
GEOG 101	Introduction to Physical Geography	3
GEST 111	English Language	2
ICT	Information and Communication Technology	3
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
BIOL 102	Introduction to Botany and Zoology	3
CHEM 102	General Chemistry II	3
MATHS 122	Introduction to Calculus, Applied Maths and Statistics	3
PHYS 102	Radiation and Optics	3
GEOG 102	Introduction to Human Geography and Geography of Sierra Leone	3
GEST 112	English Language	2
ICT 122	Information and Communication Technology II	3
	SEMESTER TOTAL	**20**

SECOND YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 211	Introduction to Environmental Science	3
EOH 212	Ecology and Population Development	3
EOH 213	Principles of Environmental Management	3
EOH 214	Applied Meteorology	3
EOH 215	Environmental Health and Toxicology	3
EOH 216	Food Safety and Sanitation	3
ENG 201	English Language	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 217	Environmental Resources and Pollution	3
EOH 218	Environmental Waste Management	3
EOH 219	Human Anatomy and Physiology	3
EOH 2110	Environmental Monitoring Techniques	3
EOH 2111	Introduction to Environment and Ecosystem	3
EOH 2112	Environmental and Occupational Epidemiology	3
ENG 202	English Language	2
	SEMESTER TOTAL	**20**

THIRD YEAR · 42 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 3113	Sustainable and Green Initiatives for Environmental Professionals	3
EOH 3114	Research in Environmental and Occupational Health	3
EOH 3115	Accident Management and Investigation	3
EOH 3116	Occupational Rehabilitation and Compensation	3
EOH 3117	Environmental Microbiology	3
EOH 3118	Introduction to Occupational Health Safety and Hygiene	3
EOH 3119	Introduction to Human Resource Management	3
	SEMESTER TOTAL	**21**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 3220	Environmental Impact Assessment	3
EOH 3221	Emergency and Disaster Management	3
EOH 3222	First Aid	3
EOH 3223	GIS and Remote Sensing in Occupational Health	3
EOH 3224	Vulnerability and Risk Assessment	3
EOH 3225	Ergonomics for Occupational Health and Safety	3
EOH 3226	Group Seminar and Scientific Writing	3
	SEMESTER TOTAL	**21**

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EOH 4127	Environmental Law and Policies	3
EOH 4128	Issues in Global Environmental Health	3
EOH 4129	Principles and Practice of Occupational Health	3
EOH 4130	Environment, Hazards and Risk Management	3
EOH 4131	Natural Resource Issues and Environmental Health	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 3 — BSc Honours in Environmental Management and Quality Control (EMQC)

Department / Institute	Institute of Environmental Management and Quality Control (IEMQC)
Degree Designation	B.Sc. (Hons.) Environmental Management and Sustainability
Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction

Environmental management and sustainability are critical components in the pursuit of sustainable development and environmental health. As global challenges such as climate change, pollution, resource depletion, and biodiversity loss continue to escalate, there is an urgent need for professionals equipped with the knowledge and skills to effectively manage and mitigate these issues. This programme aims to provide students with a comprehensive understanding of environmental systems, regulatory frameworks, and quality assurance practices.

Rationale

As industrialisation and urbanisation continue to rise, the pressures on our environment are becoming more pronounced. This programme emphasises the importance of understanding the impact of environmental factors on health, equips graduates to navigate environmental regulations, and aligns with the United Nations' Sustainable Development Goals by equipping students with the tools to promote sustainable resource management. The demand for environmental professionals continues to grow across government agencies, NGOs, private industries, and consulting firms.

Aims, Goals and Objectives

6. Provide students with a comprehensive understanding of environmental science principles.

7. Equip students with practical skills in environmental monitoring and analysis.
8. Enhance students' ability to conduct scientific research and communicate findings effectively.
9. Encourage students to pursue further studies and research in environmental management.
10. Foster responsible attitudes and ethical practices towards environmental stewardship and sustainability.

Target Group and Entry Requirements

This programme is open to high school graduates in the basic and applied sciences, including mathematics, physics, chemistry, biology, geography, agriculture, and engineering science. The same general university and departmental entry requirements apply as described under Programme 1.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- A comprehensive understanding of environmental science principles including biogeochemical cycles, environmental policies, and the impact of human activities on natural systems.
- Practical skills in environmental monitoring, data collection, and analysis using GIS, remote sensing, and laboratory methods.
- Ability to conduct scientific research and effectively communicate findings through written reports and presentations.
- Knowledge and skills to develop and implement sustainable environmental management practices.
- Proficiency in conducting environmental impact assessments and managing environmental risks.
- Understanding of environmental laws and policies, ecosystem dynamics, and resource economics.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
BIOL 101	Cell Biology, Genetics, Physiology and Microbiology	3
CHEM 101	General Chemistry I	3
MATHS 121	Pre-calculus	3
PHYS 101	Forces, Motion and Thermal Physics	3
GEOG 101	Introduction to Physical Geography	3
GEST 111	English Language	2
ICT	Information and Communication Technology	3
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
BIOL 102	Introduction to Botany and Zoology	3
CHEM 102	General Chemistry II	3
MATHS 122	Introduction to Calculus, Applied Maths and Statistics	3
PHYS 102	Radiation and Optics	3
GEOG 102	Introduction to Human Geography and Geography of Sierra Leone	3
GEST 112	English Language	2
ICT 122	Information and Communication Technology II	3
	SEMESTER TOTAL	**20**

SECOND YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EM 212	Introduction to Environmental Science	3
EM 213	Principles of Environmental Management	3
EM 214	Applied Meteorology	3
EM 215	Environmental Health and Toxicology	3
EM 216	Analytical Chemistry	3
BIOL 2113	Plant Taxonomy and Morphology	3
ENG 101	English Language	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
EM 217	Environmental Resources and Pollution	3
EM 218	Environmental Waste Management	3
EM 219	Soil and Water Chemistry	3
EM 2110	Environmental Monitoring Techniques	3
EM 2111	Contemporary Issues in the Environment	3
EM 2112	Environmental Sampling and Analysis	3
ENG 102	English Language	2
	SEMESTER TOTAL	**20**

THIRD YEAR — CORE COURSES · 15 Credit Hours

First Semester — Core

COURSE CODE	COURSE TITLE	CR. HRS.
EM 3113	Sustainable and Green Initiatives for Environmental Professionals	3
EM 3114	Research Methods	3
EM 3115	Climate Change and Environmental Sustainability	3
EM 3116	Aquatic and Wetland Ecology	3
EM 3117	Environmental Health and Safety	3
	SEMESTER TOTAL	**15**

Second Semester — Core

COURSE CODE	COURSE TITLE	CR. HRS.
EM 3220	Environmental Impact Assessment	3
EM 3221	Environmental Risk Management	3
EM 3222	Environmental GIS	3
EM 3223	Terrestrial Ecology and Wildlife Management	3
EM 3224	Soil and Water Conservation	3
	SEMESTER TOTAL	**15**

Specialist Tracks — Students choose ONE of the following three specialist tracks:

Track A: BSc Honours in Environmental Health and Sanitation

Semester 1 — Specialist Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EMEH 3118	Epidemiology and Environmental Health	3
EMEH 3119	Circular Economy and Waste Reduction	3
	SEMESTER TOTAL	**6**

Semester 2 — Specialist Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EMEH 3225	Water and Sanitation Management, Vector Control and Public Health	3
EMEH 3226	Environmental Impact of Waste Disposal	3
	SEMESTER TOTAL	**6**

Track B: BSc Honours in Air Quality Management

Semester 1 — Specialist Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EMAQ 3117	Air Pollution Monitoring and Measurement	3
EMAQ 3119	Emission Control Technologies	3
	SEMESTER TOTAL	**6**

Semester 2 — Specialist Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EMAQ 3222	Air Quality Standards and Regulations	3
EMAQ 3225	Indoor Air Quality Management	3
	SEMESTER TOTAL	**6**

Track C: BSc Honours in Water Quality Management

Semester 1 — Specialist Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EMWQ 3117	Introduction to Environmental Water Management	3
EMWQ 3119	Hydrology and Water Resource Assessment	3
	SEMESTER TOTAL	**6**

Semester 2 — Specialist Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EMWQ 3222	Climate Change and Water Resources	3
EMWQ 3225	Water Pollution and Treatment Technologies	3
	SEMESTER TOTAL	**6**

FOURTH YEAR · 15 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
EM 4127	Environmental Law and Policy	3
EM 4128	Integrated Environmental Management	3
EM 4129	Environmental Biotechnology and Remediation	3
EM 4130	Natural Resource Economics and Management	3
	SEMESTER TOTAL	**12**

Specialist Seminar (select one based on track):

COURSE CODE	COURSE TITLE	CR. HRS.
EMEH 4131	Environmental Health Policy and Regulation (Track A)	3
EMEH 4132	Occupational Health and Safety in Environmental Management (Track A)	3
EMAQ 4131	Climate Change and Air Quality Interactions (Track B)	3
EMAQ 4132	Air Quality and Public Health (Track B)	3
EMWQ 4131	Integrated Water Resources Management (Track C)	3
EMWQ 4132	Water Policy, Law and Economics (Track C)	3
	SEMESTER TOTAL	**18**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 4 — BSc Honours in Development Studies

Department / Institute	Institute of Geography and Development Studies (IGDS)
Degree Designation	B.Sc. (Hons.) Development Studies
Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction and Rationale

This programme introduces secondary school graduates to the world of development thinking, ideas, concepts, and theories, and their application in development landscapes. It examines how development has been viewed by governments, agencies, communities, and individuals. The programme will enable Sierra Leone to have graduates who can lead its development by translating theories and models from the classroom into real-world practice.

Aims, Goals and Objectives

- Develop a deeper understanding of the theoretical concepts and methods of physical, social, and life sciences.
- Provide training that enables students to search for and process scientific information efficiently.
- Develop students' ability to communicate ideas and research findings effectively.
- Prepare graduates for further study and postgraduate work in the various fields of science.
- Help students become responsible members of society through proficiency in the applied sciences.

Target Group

These programmes are especially suitable for high school graduates in related disciplines — Mathematics, Biology, Chemistry, Geography, and Economics — who desire a focused, development-oriented undergraduate degree and wish to build a career in that direction. They also target workers in government, NGOs, and community-based organisations seeking to improve their professional status.

Entry Requirements

Five credits at G.C.E. 'O' Level or W.A.S.S.C.E., including English Language, in not more than two (2) sittings. Departmental requirement: at least a grade six (6) or better in five subjects, including at least two or three from: Chemistry, Agricultural Sciences, Economics, Geography, Mathematics, and Statistics.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Note: Students who fail to score a minimum FGPA of 3.6 after the second year shall continue with the B.Sc. General programme in Development Studies.

Programme Learning Outcomes

- Explain the concepts and ideologies of development, taking into account macro- and micro-economic policies and gender dimensions from the Industrial Revolution to the present.
- Design project proposals, and manage and monitor projects for any organisation.
- Use tools and frameworks for project design, management, monitoring, and evaluation, and undertake environmental impact assessments.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 111	English Grammar	3
MATH 111	Pre-calculus	3
ENVS 111	Introduction to Environmental Sciences	3
GEOG 111	Fundamentals of Physical Geography	3
GEOG 112	Introduction to Cartography and Elementary Surveying	3
CHEM 111	General Chemistry	3
ICT 111	Information and Communication Technology I	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 122	Writing Skills	3
MATH 122	Calculus and Statistics	3
SENVS 122	Introduction to Environmental Management	3
GEOG 123	Introduction to Human and Regional Geography	3
GIS 121	Principles of Geographic Information Systems	3
DEV 121	Introduction to Development Studies	3
ICT 122	Information and Communication Technology II	2
	SEMESTER TOTAL	**20**

SECOND YEAR · 40 – 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 212	Micro-Economics of Development I	3
DEV 213	Macro-Economics of Development	3
DEV 214	Development Economics	3
DEV 215	Introduction to Population and Development	3
GIS 213	Introduction to Geoinformatics Software	3
GEST 213	General English Studies III	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 216	Culture, Society and Development	3
R.DEV 213	Rural Social Structure and Development	3

COURSE CODE	COURSE TITLE	CR. HRS.
	SEMESTER TOTAL	6

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 227	Micro-Economics II	3
DEV 228	Human Settlement Systems	3
DEV 229	Social Change and Development	3
DEV 2210	Globalisation and Development	3
SENVS 223	Social Science Research Methods I	3
GEST 224	General English Studies IV	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 227	Sociology of Rural Development	3
R.DEV 228	Rural Development in West Africa	3
GIS 215	Introduction to Cadastral Mapping	3
	SEMESTER TOTAL	9

THIRD YEAR · 40 – 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 3111	Development Policy, Planning and Design	3
DEV 3112	Livelihoods and Food Security	3
DEV 3113	Natural Resources for Development	3
DEV 3114	Governance and Development	3
SENVS 314	Research Methods II	3
EED 301	Entrepreneurship Education I	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
GIS 315	Remote Sensing Image Processing	3
DEV 3115	Development Management Techniques	3
	SEMESTER TOTAL	6

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 3216	Introduction to Development Practice	3
DEV 3217	Migration and Urbanisation	3
DEV 3218	Development Project Design, Implementation, Monitoring and Evaluation	3
DEV 3219	Development Control	3
EED 302	Entrepreneurship Education II	3
SENVS 315	Environmental Impact Assessment	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 3220	Project Risk Management	3
GEOG 322	Remote Sensing Information Modelling	3
	SEMESTER TOTAL	**6**

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 4121	Seminar in Development Thoughts and Theories	3
DEV 4122	Seminar in Sustainable Development	3
DEV 4123	Seminar in Gender and Development	3
DEV 4124	Seminar in Organisation for Community Development	3
SENVS 416	Seminar in Social Science Research Methods	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 5 — BSc Honours in Rural Development Studies

Department / Institute	Institute of Geography and Development Studies (IGDS)
Degree Designation	B.Sc. (Hons.) Rural Development Studies
Minimum Credit Hours	120 Credit Hours

Duration	4 Years (Eight Semesters)

Introduction and Rationale

This programme was developed to help address issues in rural development, especially in the aftermath of the civil war in Sierra Leone. Before and after the civil war, development was heavily centralised, and it became necessary to train graduates to address the backward nature of rural areas and help minimise rural poverty and underdevelopment. The programme introduces secondary school graduates to the world of rural development thinking, ideas, concepts, and theories, and their application in rural development landscapes for sustainability.

Upon completion, graduates will have acquired the skills and expertise needed for employment in development planning, project implementation, environmental management and monitoring, local government operation and devolution, poverty reduction strategies, and community mobilisation and development.

Aims, Goals and Objectives

- Develop a deeper understanding of the theoretical concepts and methods of physical, social, and life sciences.
- Provide training enabling students to search for and process scientific information efficiently.
- Develop students' ability to communicate ideas and research findings effectively.
- Prepare graduates for further study and postgraduate work in development, governance, and management.
- Help students become responsible members of society through proficiency in the applied social and environmental sciences.

Target Group

These programmes are especially suitable for high school graduates in related disciplines — Geography, Government, History, Core Science, Agricultural Science, and Economics — who desire a focused, rural development-oriented undergraduate degree. They also target workers in government, NGOs, and community-based organisations seeking to improve their professional status.

Entry Requirements

Five credits at G.C.E. 'O' Level or W.A.S.S.C.E., including English Language, in not more than two (2) sittings. Departmental requirement: at least a grade six (6) or better in five subjects, including at least two or three from: Geography, Government, History, Core Science, Agricultural Science, and Economics.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- Explain the concepts and ideologies of development, taking into account macro- and micro-economic policies and gender dimensions.
- Design project proposals, and manage and monitor projects for any organisation.
- Use tools and frameworks for project design, management, monitoring, and evaluation, and undertake environmental impact assessments.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 111	English Grammar	3
MATH 110	Pre-calculus	3
ENVS 111	Introduction to Environmental Sciences	3
GEOG 111	Introduction to Physical Environmental Systems	3
GEOG 112	Introduction to Cartography and Elementary Surveying	3
CHEM 110	General Science	3
ICT 111	Information and Communication Technology I	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 122	Writing Skills	3
MATH 112	Calculus and Statistics	3
SENVS 122	Introduction to Environmental Management	3
GEOG 123	Introduction to Human and Regional Geography	3
GIS 121	Principles of Geographic Information Systems	3
R.DEV 121	Introduction to Rural Development	3
ICT 122	Information and Communication Technology II	2
	SEMESTER TOTAL	**20**

SECOND YEAR · 40 – 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 212	Theories and Approaches to Rural Development	3
R.DEV 213	Rural Social Structure and Development	3
R.DEV 215	Rural Landscape Ecology and Biogeography	3
DEV 214	Development Economics	3
GIS 213	Introduction to Geoinformatics Software	3
GEST 213	General English Studies III	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 215	Introduction to Population and Development I	3
DEV 216	Culture, Society and Development	3
	SEMESTER TOTAL	**6**

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 226	Sociology of Rural Development	3
R.DEV 227	Rural Development in West Africa	3
R.DEV 228	Rural Resource Analysis	3
R.DEV 229	Rural Settlement Systems	3
SENVS 223	Social Science Research Methods I	3

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 224	General English Studies IV	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 2210	Rural Marketing and Management	3
SUV 221	Introduction to Cadastral Surveying	3
	SEMESTER TOTAL	**6**

THIRD YEAR · 40 – 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 3111	Rural Development Policy, Planning and Design	3
R.DEV 3112	Rural Livelihoods and Food Security	3
R.DEV 3113	Rural-Urban Interface, Linkages and Transition	3
R.DEV 3114	Rural Conflict Resolution, Transformation and Development	3
SENVS 314	Research Methods II	3
EED 301	Entrepreneurship Education I	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
GIS 315	Remote Sensing Image Processing	3
DEV 3115	Development Management Techniques	3
	SEMESTER TOTAL	**6**

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 3215	Rural Poverty: Perspectives and Challenges	3
R.DEV 3216	Migration and Rural Development Policy	3
R.DEV 3217	Population, Health, Water and Sanitation in Rural Areas	3
R.DEV 3218	Rural Development Project Planning, Implementation, Monitoring and Evaluation	3
EED 302	Entrepreneurship Education II	3
SENVS 315	Environmental Impact Assessment	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 3219	Microfinance and Rural Development	3
DEV 3221	Project Risk Management	3
	SEMESTER TOTAL	**6**

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
R.DEV 4120	Seminar in Rural Development Thoughts and Theories	3
R.DEV 4121	Seminar in Sustainable Rural Development	3
R.DEV 4122	Seminar in Gender and Development	3
R.DEV 4123	Seminar in Organisation for Community Development	3
SENVS 416	Seminar in Social Science Research Methods	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0

Marks (%)	Grade	Grade Point
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 6 — BSc Honours in Environment and Sustainable Development

Department / Institute	Institute of Geography and Development Studies (IGDS)
Degree Designation	B.Sc. (Hons.) Environment and Sustainable Development
Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction and Rationale

This programme was developed to replace the former BSc Environment and Development programme, introduced in 1992. It addresses development in a sustainable way, focusing on the Sustainable Development Goals, issues of climate change and environmental degradation, and the role of gender mainstreaming in promoting sustainable development. Upon completion, graduates will have the skills needed for employment in development planning and practice, environmental management, and sustainability.

Aims, Goals and Objectives

- Develop a deeper understanding of the theoretical concepts and methods of physical, social, and life sciences.
- Provide training enabling students to search for and process scientific information efficiently.
- Develop students' ability to communicate ideas and research findings effectively.
- Prepare graduates for further study and postgraduate work.
- Foster responsible attitudes and ethical practices towards environmental stewardship and sustainability.
- Enable students to understand issues of climate change, disaster management, and other environmental concerns.

Target Group and Entry Requirements

Suitable for high school graduates in Mathematics and Statistics, Biology, Chemistry, Physics, Geography, and Economics. Also targets workers in government, NGOs, and community-based organisations. Five credits at G.C.E. 'O' Level or W.A.S.S.C.E., including English Language. Departmental requirement: at least two or three subjects from Mathematics and Statistics, Biology, Chemistry, Physics, Geography, and Economics.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- Explain the concepts and ideologies of development, taking into account macro- and micro-economic policies and gender dimensions.
- Design project proposals, and manage and monitor projects.
- Use tools and frameworks for project design, management, monitoring, and evaluation, and undertake environmental impact assessments.
- Understand issues of climate change, disaster management, and related environmental concerns.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 111	English Grammar	3
MATH 111	Pre-calculus	3
ENVS 111	Introduction to Environmental Sciences	3
GEOG 111	Fundamentals of Physical Geography	3
GEOG 112	Introduction to Cartography and Elementary Surveying	3
CHEM 111	General Chemistry	3
ICT 111	Information and Communication Technology I	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 122	Writing Skills	3
MATH 122	Calculus and Statistics	3
SENVS 122	Introduction to Environmental Management	3
GEOG 123	Introduction to Human and Regional Geography	3
GIS 121	Principles of Geographic Information Systems	3
DEV 121	Introduction to Development Studies	3
ICT 122	Information and Communication Technology II	2
	SEMESTER TOTAL	**20**

SECOND YEAR · 40 – 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 211	Principles of Hydrology and Climatology	3
DEV 212	Micro-Economics of Development I	3
DEV 213	Macro-Economics of Development	3
DEV 214	Development Economics	3
ENSD 212	Introduction to Population and Development I	3
GIS 213	Introduction to Geoinformatics Software	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 216	Culture, Society and Development	3
R.DEV 213	Rural Social Structure and Development	3
	SEMESTER TOTAL	**6**

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 227	Micro-Economics II	3
ENSD 223	Social Change and Development	3
ENSD 224	Human Settlement Systems	3
ENSD 225	Introduction to Population and Development II	3
SENVS 223	Social Science Research Methods I	3
GEST 224	General English Studies IV	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
ENDEV 226	Disaster Management	3
R.DEV 227	Sociology of Rural Development	3
GIS 215	Introduction to Cadastral Mapping	3
	SEMESTER TOTAL	**9**

THIRD YEAR · 40 – 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 317	Sustainable Rural Development Policy, Planning and Design	3

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 318	Landscape Ecology and Biogeography	3
ENSD 319	Population Policy and Development	3
GIS 315	Remote Sensing Image Processing	3
SENVS 314	Research Methods II	3
EED 301	Entrepreneurship Education I	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 3115	Development Management Techniques	3
GIS 311	Spatial Data Organisation and Management	3
	SEMESTER TOTAL	6

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 3211	Organisation for Community Development	3
ENSD 3212	Climate Change and Sustainable Development	3
ENSD 3213	Land Resource Use and Planning	3
ENSD 3214	Development Project Planning, Implementation, Monitoring and Evaluation	3
EED 302	Entrepreneurship Education II	3
SENVS 325	Environmental Impact Assessment	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
DEV 3221	Project Risk Management	3
GEOG 322	Remote Sensing Information Modelling	3
	SEMESTER TOTAL	6

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 4115	Seminar in Development Thoughts and Theories	3
ENSD 4116	Seminar in Sustainable Agriculture, Mining and Development	3
ENSD 4117	Seminar in Gender and Development	3

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 4118	Seminar in Human Ecology	3
SENVS 416	Seminar in Social Science Research Methods	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 7 — BSc in Geography and Information System

Department / Institute	Institute of Geography and Development Studies (IGDS)
Degree Designation	B.Sc. Geography and Information System
Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction and Rationale

This programme was originally offered as BSc in Geography with Honours. In response to growing industry demands for professionals in geospatial information management, it has been restructured and renamed as BSc in Geography and GIS. The programme comprises an equal blend of geography and GIS courses. Upon completion, graduates will have the skills needed for employment in development planning, environmental management, spatial data analytics, mining, meteorology, and forestry.

Aims, Goals and Objectives

11. Provide students with the theoretical foundations in geography and GIS.
12. Expose students to practical skills in spatial information modelling.
13. Enable students' capacity for scientific studies and communication.
14. Promote students' interest in and ability for higher degree education.
15. Promote students' attitudes towards responsible citizenship.

Target Group and Entry Requirements

Open to high school graduates in the basic and applied sciences. Five credits at G.C.E. 'O' Level or W.A.S.S.C.E., including English Language. Departmental requirement: at least two subjects from mathematics, physics, chemistry, biology, agriculture, geography, and engineering science.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40

Year of Study	Range of Credit Hours
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Students with a cumulative grade point average of no less than 3.6 at the end of four semesters will be invited for Honours.

Programme Learning Outcomes

- An understanding of the fundamental principles of geography and GIS and their application in studying biogeochemical patterns and processes in the earth-atmosphere system.
- An appreciation of the human-environment system and the need for sustainable utilisation and management of environmental resources.
- Ability to utilise geographic knowledge and GIS methods in the study of the human-environment system, and in scientific research and the formulation of environmental management policies.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 111	English Grammar	3
MATH 111	Mathematical Science I	3
SENVS 111	Introduction to Ecosystem Science	3
PHYS 110	General Science — Physics	3
GEOG 111	Fundamentals of Physical Geography	3
GEOG 112	Introduction to Cartography and Surveying	3
ICT 111	Introduction to Computers	2
	SEMESTER TOTAL	20

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 122	Writing Skills	3
MATH 122	Mathematical Science II	3
SENVS 122	Introduction to Environmental Management	3
GEOG 123	Introduction to Human and Regional Geography	3
GIS 121	Principles of Geographic Information Systems	3
GIS 122	Basic Photogrammetry and Remote Sensing	3
ICT 122	Introduction to Microsoft Office Packages	2
	SEMESTER TOTAL	20

SECOND YEAR · 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
GEOG 214	Landscape Ecology and Biogeography	3
GEOG 215	Geomorphology and Earth System Science	3
GEOG 216	Principles of Climatology and Hydrology	3
GEOG 217	Economic and Political Geography	3
GIS 213	Introduction to Geoinformatics Software	3
GEST 201	General English Studies I	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 212	Population and Development I	3
DEV 216	Culture, Society and Development	3

COURSE CODE	COURSE TITLE	CR. HRS.
	SEMESTER TOTAL	6

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SENVS 223	Social-Environmental Research Methods I	3
GEOG 228	Introduction to Cadastral Surveying	3
GEOG 229	Concepts in Human Settlement Systems	3
GEOG 2210	Population and Demographic Estimation	3
GIS 224	Optical and Microwave Remote Sensing	3
GEST 202	General English Studies II	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 225	Population and Development II	3
ENSD 226	Natural Disaster Management	3
	SEMESTER TOTAL	6

THIRD YEAR · 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SENVS 314	Social-Environmental Research Methods II	3
GEOG 3111	Agricultural Geography	3
GIS 315	Spatial Data Organisation and Management	3
GIS 316	Remote Sensing Data and Image Processing	3
GIS 317	Fundamentals of Geostatistical Mapping	3
EED 301	Entrepreneurial Skills I	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 318	Rural Landscape Ecology and Biology	3
ENSD 319	Population Policy and Development	3
	SEMESTER TOTAL	6

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SENVS 325	Environmental and Social Impact Assessment	3
GIS 328	Geospatial Data Analysis and Modelling	3
GIS 329	Applied Environmental Remote Sensing	3
GIS 3210	Application and Development of Web GIS	3
GIS 3211	Programming for Spatial Data Management	3
EED 302	Entrepreneurial Skills II	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
ENSD 3211	Community Organisation and Development	3
ENSD 3212	Climate Change and Sustainable Development	3
	SEMESTER TOTAL	**6**

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
SENVS 416	Seminar on Social-Environmental Research	3
GEOG 4112	Seminar on Applied Physical Geography	3
GEOG 4113	Seminar on Human and Regional Geography	3
GIS 4112	Seminar on GIS and Development Planning	3
GIS 4113	Seminar on Remote Sensing of Environment	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 8 — BSc Honours in Land Resources Management

Department / Institute	Department of Land Management
Degree Designation	B.Sc. (Hons.) Land Resources Management
Minimum Credit Hours	120 Credit Hours

Duration	4 Years (Eight Semesters)

Introduction and Rationale

This is a four-year degree programme that draws from a combination of disciplines including geography, development, economics, agriculture, environment, surveying, and geo-informatics to meet the needs of industries, universities, government agencies, NGOs, and other sectors seeking the most efficient use of land resources. Upon completion, graduates will be equipped to pursue careers in soil surveying, cadastral mapping, land evaluation and suitability analysis, physical planning, pasture and forage management, environmental impact assessment, ecosystem management, land-use planning, land legislation, land policy formulation, and land administration.

Aims, Goals and Objectives

16. Provide students with the theoretical foundations in land management.
17. Expose students to practical skills in land resources management.
18. Enable students' capacity for scientific studies and communication.
19. Promote students' interest in and ability for higher degree education.
20. Promote students' attitudes towards responsible citizenship.

Target Group and Entry Requirements

Open to high school graduates in the basic and applied sciences, including mathematics, physics, chemistry, biology, geography, agriculture, and economics. Five credits at G.C.E. 'O' Level or W.A.S.S.C.E., including English Language. Departmental requirement: at least two subjects from Mathematics, Physics, Chemistry, Biology, Agriculture, Geography, Economics, and Statistics.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- An understanding of the biogeochemical patterns and processes within the earth-atmosphere system, the impact of anthropogenic activities on land, and the sustainable utilisation of land resources.
- An appreciation of the human-environment system and the growing need for sustainable utilisation and management of land resources.
- Ability to utilise land resources inventory and management tools for scientific research and the formulation of land management policies.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 101	English Grammar	3
MATH 111	Mathematical Science I	3
SUV 111	Introduction to Cartography and Surveying	3
BIOL 111	Introduction to Ecosystem Science	3
PHYS 110	General Science — Physics	3
GEOG 111	Fundamentals of Physical Geography	3
ICT 101	Introduction to Computers	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 102	Writing Skills	3
MATH 122	Mathematical Science II	3
SUV 123	Principles of Cartography and Surveying	3
GEOG 122	Introduction to Environmental Management	3
GIS 121	Principles of Geographic Information Systems	3

COURSE CODE	COURSE TITLE	CR. HRS.
GIS 122	Principles of Environmental Remote Sensing	3
ICT 102	Introduction to Microsoft Office Packages	2
	SEMESTER TOTAL	**20**

SECOND YEAR · 36 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEOG 214	Landscape Ecology and Biogeography	3
GEOG 216	Climatology and Hydrology	3
LRes. 211	Introduction to Land Economics	3
LRes. 212	Introduction to Land Administration	3
GIS 213	Introduction to Geoinformatics Software	3
GEST 201	General English Studies I	3
	SEMESTER TOTAL	**18**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEOG 228	Agricultural Landscape Geography	3
LRes. 223	Land Resource Utilisation and Planning	3
LRes. 224	Introduction to Sustainable Agriculture	3
LRes. 225	Forage and Pasture Management	3
SUV 228	Introduction to Cadastral Surveying	3
GEST 202	General English Studies II	3
	SEMESTER TOTAL	**18**

THIRD YEAR · 36 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
LRes. 316	Land Tenure and Rural Livelihoods	3
LRes. 317	Tropical Ecosystem Management	3
LRes. 318	Land Administration and Land-use Planning	3
LRes. 319	Sustainable Development of Natural Resources	3
GIS 316	Spatial Data Organisation and Management	3

COURSE CODE	COURSE TITLE	CR. HRS.
EED 301	Entrepreneurial Skills I	3
	SEMESTER TOTAL	**18**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
LRes. 3210	Ecosystem Services and Management	3
LRes. 3211	Land Evaluation and Suitability Analysis	3
GIS 329	Geo-statistics and Spatial Data Modelling	3
GIS 3210	Applied Environmental Remote Sensing	3
GEOG 3213	Environmental and Social Impact Assessment	3
EED 302	Entrepreneurial Skills II	3
	SEMESTER TOTAL	**18**

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
LRes. 4112	Seminar on Land Legislation and Policy	3
LRes. 4113	Seminar on Environmental Remediation	3
GEOG 4116	Seminar on Geographical Research Methods	3
GIS 4112	Seminar on GIS and Development Planning	3
GIS 4113	Seminar on Remote Sensing of Environment	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.

PROGRAMME 9 — BSc Honours in Surveying and Geo-informatics

Department / Institute	Institute of Surveying and Geo-informatics
Degree Designation	B.Sc. (Hons.) Surveying and Geo-informatics

Minimum Credit Hours	120 Credit Hours
Duration	4 Years (Eight Semesters)

Introduction and Rationale

The Bachelor of Science with Honours in Surveying and Geo-informatics at Njala University is a four-year programme that builds on Geography, GIS, photogrammetry, and remote sensing. It is designed to meet the growing needs of industries, universities, government agencies, NGOs, and other sectors requiring the synergistic application of surveying, remote sensing, photogrammetry, and GIS tools in decision-making and operations. Upon completion, graduates will be equipped for employment in development planning, environmental management, surveying and spatial data analytics, mining, meteorology, agriculture, and forestry.

Aims, Goals and Objectives

21. Provide students with the theoretical foundations in surveying and GIS.
22. Expose students to practical skills in spatial information modelling.
23. Enable students' capacity for scientific studies and communication.
24. Promote students' interest in and ability for higher degree education.
25. Promote students' attitudes towards responsible citizenship.

Target Group and Entry Requirements

Open to high school graduates in the basic and applied sciences. Five credits at G.C.E. 'O' Level or W.A.S.S.C.E., including English Language. Departmental requirement: at least two subjects from mathematics, physics, chemistry, biology, agriculture, geography, and engineering science.

Programme Duration and Minimum Credit Hours for Graduation

To graduate from this degree programme, a student must have completed a minimum of 120 credit hours, distributed as follows:

Year of Study	Range of Credit Hours
First Year	40
Second Year	40 – 42
Third Year	40 – 42
Fourth Year	15 – 18

In addition, the following criteria are considered:

- There shall be Final Comprehensive Examinations, comprising four papers, at the end of the fourth year, examined by external examiners appointed by Senate.
- The Final Comprehensive Examinations shall cover courses from the 200 to the 400 series, organised in terms of theory, methods, and substance.
- The dissertation shall not be counted among the Comprehensive Examination assessments.
- A candidate who does not score a minimum of 2.50 in the Comprehensive Examinations shall be required to repeat the examinations.
- The final award shall be based on the FGPA: CGPA – 60%; Final Comprehensive Examinations – 30%; Dissertation – 5%; Field Attachment – 5%.

Honours Classification

Class of Honours	FGPA Range
First Class	4.30 and above
Second Class (Upper)	4.00 – 4.29
Second Class (Lower)	3.60 – 3.99
Third Class	3.00 – 3.59

General Degree Classification

Division	FGPA Range
Division One	4.20 and above
Division Two	3.60 – 4.19
Division Three	3.00 – 3.59

Programme Learning Outcomes

- An understanding of the fundamental principles of engineering surveying, remote sensing, and GIS, and their application in the study of earth-atmosphere systems.
- An appreciation of the human-environment system and the need for sustainable utilisation and management of environmental resources.
- Ability to utilise surveying and mapping technologies in the study of the human-environment system, and in scientific research and the formulation of environmental management policies.

Programme Structure

FIRST YEAR · 40 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 111	General English Studies I	3
MATH 111	Mathematical Science I	3
SUV 111	Introduction to Cartography and Surveying	3
SUV 112	Introduction to Engineering Drawing	3
PHYS 111	Forces, Motion and Thermal Physics	3
GEOG 111	Fundamentals of Physical Geography	3
ICT 101	Introduction to Computers	2
	SEMESTER TOTAL	**20**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
GEST 122	General English Studies II	3
MATH 122	Mathematical Science II	3
SUV 123	Principles of Cartography and Surveying	3
PHYS 122	Optics, Electromagnetism and Radiation Physics	3
GIS 121	Principles of Geographic Information Systems	3

COURSE CODE	COURSE TITLE	CR. HRS.
GIS 122	Principles of Environmental Remote Sensing	3
ICT 102	Introduction to Microsoft Office Packages	2
	SEMESTER TOTAL	20

SECOND YEAR · 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SUV 214	Principles of Field Astronomy	3
SUV 215	Principles of Engineering Surveying	3
SUV 216	Computer Applications in Surveying	3
SUV 217	Fundamentals of Photogrammetry	3
GIS 213	Introduction to Geoinformatics Software	3
GEST 201	General English Studies III	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
GEOG 215	Geomorphology and Earth System Science	3
GEOG 216	Principles of Climatology and Hydrology	3
	SEMESTER TOTAL	6

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SUV 228	Introduction to Cadastral Surveying	3
SUV 229	Fundamentals of Geodetic Surveying	3
SUV 2210	Elements of Topographical Surveying	3
GIS 224	Optical and Microwave Remote Sensing	3
SENVS 223	Social-Environmental Research Methods I	3
GEST 202	General English Studies IV	3
	SEMESTER TOTAL	18

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
LRes. 223	Land Resource Utilisation and Planning	3
ENSD 226	Natural Disaster Management	3
	SEMESTER TOTAL	6

THIRD YEAR · 42 Credit Hours

First Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SENVS 314	Social-Environmental Research Methods II	3
SUV 3111	Principles of Hydrographic Surveying	3
GIS 315	Geospatial Data Organisation and Management	3
GIS 316	Remote Sensing Data and Image Processing	3
GIS 317	Fundamentals of Geostatistical Mapping	3
EED 301	Entrepreneurial Skills I	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
GEOG 3111	Concepts in Human Settlement Systems	3
LRes. 318	Land Administration and Land-use Planning	3
	SEMESTER TOTAL	**6**

Second Semester — Core Courses

COURSE CODE	COURSE TITLE	CR. HRS.
SENVS 325	Environmental and Social Impact Assessment	3
SUV 3212	Survey Measurement and Error Analysis	3
SUV 3213	Principles of Quantity Surveying	3
GIS 328	Geospatial Data Analysis and Modelling	3
GIS 329	Applied Environmental Remote Sensing	3
EED 302	Entrepreneurial Skills II	3
	SEMESTER TOTAL	**18**

Elective — select one from the following:

COURSE CODE	COURSE TITLE	CR. HRS.
GIS 3210	Application and Development of Web GIS	3
GIS 3211	Programming for Spatial Data Management	3
	SEMESTER TOTAL	**6**

FOURTH YEAR · 15 Credit Hours

First Semester

COURSE CODE	COURSE TITLE	CR. HRS.
SUV 4114	Seminar on Management and Legal Issues	3
SUV 4115	Seminar on Survey Practice (Field Workshop)	3
SENVS 416	Seminar on Social-Environmental Research	3
GIS 4112	Seminar on GIS and Development Planning	3
GIS 4113	Seminar on Remote Sensing of Environment	3
	SEMESTER TOTAL	**15**

Second Semester

COURSE CODE	COURSE TITLE	CR. HRS.
—	Industrial Attachment	—
—	Research Project	—
—	Directed Readings	—
—	Final Comprehensive Examinations	—

Teaching and Learning Strategies

Teaching and learning are learner-centred, incorporating both theoretical instruction and practical, hands-on exercises to achieve the programme's aims, goals, and objectives.

Assessment Methods

Continuous assessment methods are used to evaluate students' knowledge, attitudes, and skills. These include class attendance and participation, class exercises, assignments, field group projects, presentations, and written examinations.

Grading System and Grade Point Average

A five-point letter grading system is used in assessing student performance, following the Tertiary Education Commission (TEC) guidelines:

Marks (%)	Grade	Grade Point
75 and above	**A**	5.0
65 – 74	**B**	4.0
50 – 64	**C**	3.0
40 – 49	**D**	2.0
30 – 39	**E**	1.0
Below 30	**F**	0.0

Progression Requirement

To advance from one year to the next, students must achieve a Sessional Grade Point Average (SGPA) of 3.0 or higher, with no outstanding course requirements. Students who score between 2.90 and 2.99 will be required to repeat the year. Students who score 2.89 and below will be dropped from the programme.

Resources

Financial resources are sourced primarily from the central government, supplemented by student fees and charges from school and university projects. The programme is staffed by qualified permanent lecturers. Essential resources include classrooms, a GIS laboratory, field survey tools such as GPS devices, and financial resources for field trips and laboratory analysis.

Equal Opportunities

The programme ensures equal learning and practice opportunities for all students, regardless of gender, age, religion, ethnicity, race, or physical ability.

Monitoring and Evaluation

The programme's effectiveness and delivery are continuously monitored and evaluated according to the Quality Assurance guidelines of Njala University and the Tertiary Education Commission (TEC). Measures are implemented to ensure comprehensive delivery of both theoretical and practical lectures, along with ongoing appraisal of faculty and students.

Review of the Programme

The programme will be reviewed every five years to address the evolving needs of academia and industry.