SMECC2E
Cross Regional
Intra-Africa
Mobility Project

Funded by the
European Union

GUIDELINES FOR APPLICANTS OF THE 1st COHORT

Sustainable Energy & Materials, Energy Policy, Climate Change, Energy Economics and Environment (SMECC2E) Intra-Africa Academic Mobility Scheme

29th May 2026

Implemented by:

https://smecc2e.unn.edu.ng/

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DISCLAIMERS & DATA PROTECTION STATEMENTS

EU Disclaimer Statements

SMECC2E is Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Scholarship Scam Warning

There is not application fee. Applicants will not be charged at any stage of the application or selection process. Please be cautious when receiving any publicity inviting you to apply for an Intra-Africa scholarship or a message to pay a fee to be selected as a scholarship holder. Before giving out any personal data, please always verify that the information comes from a trustworthy source.

Data Protection Notice

Personal data submitted through this application will be processed in accordance with EACEA's data protection policy and the EU Data Protection Regulation (GDPR).

1. INTRODUCTION

Sustainable Energy & Materials, Energy Policy, Climate Change, Energy Economics and Environment (SMECC2E) Intra-Africa Mobility Project, is an ambitious cross-regional initiative which would be delivered by a consortium of seven (7) Higher Educational Institutes (HEIs) and coordinated by the University of Nigeria (UNN), has been selected for the award of a MOBAF Grant. The other members of the consortium are University of Cape Coast (UCC), Ghana, University of Rwanda (UR), Moi University (MOIU) Kenya, University of Sierra Leone (USL), Lupane State University (LSU) in Zimbabwe and the University of West Attica (UNIWA), Greece.

SMECC2E seeks to enhance Africa's economic, social, and human development by improving the skills and competencies of Masters and PhD students, trainees, and university staff (academic, technical, and administrative) in Clean Energy Transition and Climate Change–related areas.

The six thematic areas covered in the project are: Sustainable Energy, Sustainable Materials, Energy Policy, Climate Change (Mitigation and Adaptation), Energy Economics & Financing and Environment.

The project runs different mobility schemes, covering student mobilities (credit and degree-seeking), traineeships, and staff exchanges. Spanning over 48 months from January 2026, and with a total budget of €1,447,580, SMECC2E will deliver:

- 74 completed mobilities spread across the African Partner Institutions, and the thematic areas of the project, in the following categories:
  - 35 Masters mobilities (30% women, 30% credit-seeking).
  - 10 PhD mobilities (30% women, 30% credit-seeking).
  - 15 trainee mobilities.
  - 14 staff mobilities.
- 45 completed student internships
- 10 completed applied industry-linked research studies.
- 10+ co-published peer-reviewed research papers.

SMECC2E is strategically aligned with the EU Global Gateway Flagship Projects in Africa, particularly in climate, energy, digital, and transport sectors. Our consortium intends to leverage these synergies through industrial linkages, quality traineeships, and field engagements with companies implementing EU flagship projects in participating countries.

2. SCHOLARSHIPS INFORMATION

2.1. General Eligibility Requirements

(i) **For students** (masters and doctorate):

a. **Target Group 1**: Be registered/admitted in or have obtained a degree (or equivalent) from one of the six African partner HEIs on the SMECC2E project.

b. **Target Group 2**: Be from another HEI, which is not participating as a partner but established in one of the eligible countries in Africa.

c. Applicants who already have a masters degree are not eligible to apply for another masters degree. Similarly, applicants who already have a PhD degree are not eligible to apply for another PhD degree.

(ii) **For Trainees**: be a student enrolled in a bachelor/master/PhD programme in one of the African partners HEIs.

(iii) **For Staff:** be working for one of the partners HEIs.

Note:

(i) All applicants should not have already benefitted from another MOBAF 2022 - 2027 scholarship.

(ii) Applications must be to an institution in an eligible country other than:

- The applicant's country of origin.
- The applicant's country of residence.
- The country where the applicant has previously completed a degree programme.

The eligible countries in target groups 1 and 2 are shown on Table 1:

Table 1 - Eligible Countries in target Groups 1 and 2

Target Group	Region	List of Target Countries
Target Group 1	Consortium Members	Applicants from the six African partner HEIs namely: University of Nigeria (UNN), University of Cape Coast (UCC), Ghana, University of Rwanda (UR), Moi University (MOIU) Kenya, University of Sierra Leone (USL), Lupane State University (LSU) in Zimbabwe.
Target Group 2	Western African Countries	Nigeria, Ghana, Sierra Leone, Benin, Gambia, Togo, Liberia, Gambia
	Southern Africa & Indian Ocean Countries	Botswana, Angola, Lesotho, ESwatini, Zimbabwe, Mozambique, Zambia, Namibia, Mauritania, Madagascar, Malawi, South Africa
	East & Central African Countries	Kenya, Rwanda, Ethiopia, Burundi, Central Africa Republic, Cameroon, Congo, Eritea, Tanzania, Uganda, South Sudan
	Northern Africa Countries	Morocco, Libya, Egypt, Algeria

Note: For Masters and PhD programmes (either degree seeking or credit seeking), with a total mobility period lasting for 9 months and above only, eligible and well performing applicants who apply to be hosted in institutions that are within the same African region as theirs would stand a better chance of being selected than those who apply outside their region. For instance, applicants from West Africa should choose a host Institution (Table 2) that is located in West Africa, same thing applies to applicants from East and Southern Africa. However, applicants from Northern Africa are welcome to apply to be hosted in any of the six partner HEIs implementing the SMECC2E project. For avoidance of doubt, applicants who are seeking a three- or six-month mobility stay, are welcome to apply to any of the partner institution.

Table 2 - Preferred hosting locations for Masters and PhD Mobilities lasting 9 months and above

Preferred host for applicants from West African Countries	Preferred host for applicants from East & Central African Countries	Preferred host for applicants from Southern Africa & Indian Ocean Countries
University of Nigeria University of Cape Coast University of Sierra Leone	University of Rwanda Moi University	Lupane State University

2.2. Types Of Mobility

There are different types of mobility within SMECC2E:

1. **Masters or PhD credit seeking mobility scheme**: The SMECC2E Master/PhD mobility will allow students who are currently enrolled in full-degree studies at their home institution, to apply to spend a study period (6 months for Masters, 6 or 9 months for PhD) at one of the consortium's partner institutions and return home after the exchange period to finish their degree programmes there. The period could be used to take some coursework, conduct academic research in a laboratory, as well as writing the thesis and journal papers. Successful applicants would be required to participate in a one-month internship/field trip scheme at a partner facility to acquire hands on skills/experience on one or more related thematic field(s). The home higher education institution of the SMECC2E scholarship recipient shall ensure that the study/research period spent at the SMECC2E Consortium partner is fully academically recognized.

2. **Masters or PhD degree seeking mobility scheme**: This programme is for masters or PhD degree seeking African students who are not yet registered in any programme. Eligible applicants would be expected to leave their home country and complete a master's or PhD program at a partner university in the consortium. The Masters and PhD study duration is for 24 and 36 months respectively. Successful applicants would be required to participate in a one-month internship/field trip scheme at a partner facility to acquire hands on skills/experience on one or more related thematic field(s).

3. **Staff mobility scheme**: Partner African Higher Education Institution's:

    a. academic staff members are eligible to apply for short-term mobility opportunities, including benchmarking, research, guest lecturing, curriculum development, and knowledge sharing trips. This should usually be for 1 month stay.
    b. non – academic Staff member can apply for short-term mobility opportunities in African private businesses that are operating in the clean energy transition or climate change sector or partner HEIs to develop capacity for international mobility. The mobility would typically last for one month. This mobility is intended to promote collaboration between African HEIs and the private sector.

4. **Traineeship mobility scheme**: Masters or PhD students can spend a part of their studies in one of the African HEIs under this programme or a private business associated with one of the EU Flagship projects. This scheme would enhance the skills of the participants in the thematic areas of SMECC2E and increase their professional networks beyond their home countries. This is mobility is expected to last for 3

months.

2.3. Mobility Inflow Distribution For 1st Cohort

An indicative distribution of mobility across target groups is given on Table 3. This may be increased to optimize project implementation.

Table 3 - Opportunities available in the 1st Cohort

	Masters degree seeking	Masters Credit Seeking Masters	Degree seeking PhD	Research Credit Seeking PhD	Credit Seeking PhDs (Benchwork)	Trainees	Non - Academic Staff	Academic Staff	sub-total
Duration in Months	**24**	**6**	**36**	**9**	**6**	**3**	**1**	**1**	
UNN	1	1	1	-	1	4	-	-	**8**
UCC	1	1	1	-	1	-	1	1	**6**
MOIU	2	1	1	-	-	-	-	-	**4**
UR	1	-	-	-	1	4	-	-	**6**
LSU	1	1	-	-	-	-	1	1	**4**
USL	1	1	-	1	-	-	-	-	**3**
Total	**7**	**5**	**3**	**1**	**3**	**8**	**2**	**2**	**31**

Table 4 shows the distribution of the scholarships across the target groups.

Table 4 – Distribution of Scholarships across target groups

Type of mobility	Target Group 1	Target Group 2	TOTAL
Masters	7	5	**12**
Doctorates	4	3	**7**
Staff	4	0	**4**
Trainee	8	0	**8**
TOTAL	**23**	**8**	**31**

IMPORTANT: Types of mobility and their distribution might change to meet the project's need. Please refer to the SMECC2E website (Mobility and Opportunities - Sustainable Energy & Materials, Energy policy, Climate Change, Energy Economics and Environment) for the most updated list of opportunities.

2.4. Maximum Scholarship Award

The maximum contribution to each successful applicant/ scholarship holder is presented on Table 5.

Table 5 – Total Contribution to scholarship holders

Mobility type	Duration (Months)	Monthly rate	Maximum amount to be awarded to the student for the entire scholarship duration
Master Mobility – Degree Seeking	24	€ 890	€ 21,360
Master Mobility - Credit Seeking	6	€ 890	€ 5,340
PhD Mobility – Degree seeking	36	€ 1,230	€ 44,280
PhD Mobility - Credit Seeking - Research	9	€ 1,230	€ 11,070
PhD Mobility - Credit Seeking – Benchwork	6	€ 1,230	€ 7,380
Traineeship Mobility	3	€ 1,230	€ 3,690
Staff Mobility	1 – 1.5	€ 2,370	varies

The total contribution to scholarship holder covers the awardee's:

- Monthly subsistence/allowance for students & Trainees for the full mobility periods. For staff a daily allowance/subsistence is calculated and pro-rated.
- Settling - in allowance (for stays above10 months)
- Extra Allowance per academic session for female students (for stays beyond 10 month)
- Travel Costs - Cost of single return flights for students staying less than 12 months, while students staying more than 12 months are entitled to two round trip tickets.
- Visa Cost and/or Residency Permit Cost
- Student support during the one-month internship/field trip period.

In addition to the above mentioned, the Institutional contribution of partner HEIs would be used to cover the following costs on behalf of the awardee's:

- Consolidated Fees /Participation fees for the academic/trainee program.
- Insurance cost
- Basic research cost where applicable.

3. STUDENT MOBILITY

3.1. Study Programmes on Offer

For the 1st cohort of applications, the partner institutions offer opportunities for Masters / PhD credit and Degree seeking in the following area of studies:

Table 6 – List of Academic Programmes on Offer

S/No	Beneficiary name	Country	Type of programme	Name of the programme	Thematic Areas Linked
1	University of Nigeria	Nigeria	Master	Renewable and New Energy Systems (RNES)	Sustainable Energy
2	University of Nigeria	Nigeria	Doctorate	Renewable and New Energy Systems (RNES)	Sustainable Energy
3	University of Nigeria	Nigeria	Master	Energy Policy, Regulation and Management (EPRM)	Energy Policy & Regulation
4	University of Nigeria	Nigeria	Doctorate	Energy Policy, Regulation and Management (EPRM)	Energy Policy & Regulation
5	University of Nigeria	Nigeria	Master	Sustainable Energy Materials Engineering (SEM)	Sustainable Materials Development
6	University of Nigeria	Nigeria	Doctorate	Sustainable Energy Materials Engineering (SEM)	Sustainable Materials Development
7	University of Nigeria	Nigeria	Master	Climate Change Studies, Energy and Environment	Climate Change Studies & Environment
8	University of Nigeria	Nigeria	Doctorate	Climate Change Studies, Energy and Environment	Climate Change Studies & Environment
9	University of Sierra Leone	Sierra Leone	Master	Energy Studies	Sustainable Energy
10	University of Sierra Leone	Sierra Leone	Doctorate[1]	Engineering	Sustainable Energy
11	Moi University	Kenya	Master	Sustainable Energy and Energy Access	Sustainable Energy
12	Moi University	Kenya	Doctorate	Energy Studies	Sustainable Energy
13	Moi University	Kenya	Master	Electrical Engineering (Instrumentation)	Sustainable Energy
14	University of Rwanda	Rwanda	Master	Renewable Energy	Sustainable Energy

[1] Only credit seeking is available for the PhD Programme at the University of Serria Leone.

15	University of Rwanda	Rwanda	Master	Energy Economics	Energy Economics/Energy Finance
16	University of Rwanda	Rwanda	Doctorate[2]	Renewable Energy	Sustainable Energy
17	University of Rwanda	Rwanda	Doctorate[3]	Energy Economics	Energy Economics/Energy Finance
18	University of Rwanda	Rwanda	Master	Electrical power systems	Sustainable Energy
19	University of Rwanda	Rwanda	Doctorate[4]	Electrical power systems	Sustainable Energy
20	Lupane State University	Zimbabwe	Master	Climate change & Sustainable Development	Climate Change Adaptation & Mitigation
21	Lupane State University	Zimbabwe	Master	Environmental Geography and Sustainability (M.Phil)	Environmental Studies
22	Lupane State University	Zimbabwe	Doctorate	Environmental Geography and Sustainability (D.Phil)	Environmental Studies
23	Lupane State University	Zimbabwe	Master	Geoinformatics and Remote Sensing (M.Phil)	Environmental Studies
24	Lupane State University	Zimbabwe	Doctorate	Geoinformatics and Remote Sensing (D.Phil)	Environmental Studies
25	University of Cape Coast	Ghana	Master	Environmental Science	Environmental Studies, Sustainable Energy
26	University of Cape Coast	Ghana	Doctorate	Land Use Planning and Environmental Sciences	Environmental Studies, Sustainable Energy
27	University of Cape Coast	Ghana	Master	Clean Energy and Environment (M.Sc.)	Environmental Studies, Sustainable Energy
28	University of Cape Coast	Ghana	Master	Clean Energy and Environment (M.Phil)	Environmental Studies, Sustainable Energy
29	University of Cape Coast	Ghana	Doctorate	Clean Energy and Environment (Ph.D.)	Environmental Studies, Sustainable Energy

Detailed Information on the above-mentioned programmes can be found on the ANNEXES attached to this guideline

[2] Only ccredit seeking is available for the PhD Programmes at the University of Rwanda.

[3] Only ccredit seeking is available for the PhD Programme at the University of Rwanda.

[4] Only ccredit seeking is available for the PhD Programme at the University of Rwanda.

3.2 Credit Recognition System

Information on the courses and associated credits offered by partner institutions may be found on the ANNEXES attached to this guideline. The applicant must discuss the proposed study plan with the head of department and/or programme leader at their home institution and receive a written endorsement and statement indicating which home credit exemptions will be granted for the mobility. This statement must accompany confirmation of degree enrolment and be uploaded to the application website.

Credit – seeking mobility will only be considered and awarded if such an endorsement has been obtained. Credit – seeking students will receive a transcript from the host institution stating the completed courses, and the home institution will grant recognition from courses taken during the mobility and exemption from home courses as per the statement from the home head of department and/or programme leader.

3.3 Traineeship Opportunities for the 1st Cohort

The traineeship opportunities for the 1st Cohort would be hosted in Nigeria and Rwanda. The core training programmes to be covered are listed below.

3.3.1 Nigeria

Training Module	Description	Thematic Area
Solar PV & Mini-grid Design & Installation	Practical system sizing, installation, and commissioning of solar and mini-grid systems	Sustainable Energy / Clean Energy Transition
HOMER & LEAP Modelling	Energy system simulation and policy scenario modelling using HOMER and LEAP tools	Energy Policy
Sustainable Materials Characterization	Hands-on training using SEM, FTIR, and XRF for material analysis	Sustainable Materials / Circular Economy
3D Printing	Design and fabrication using 3D printing technologies	Advanced Manufacturing /
MATLAB for Energy & Climate Studies	Data analysis, modelling, and simulation using MATLAB for climate and energy systems	Energy Analytics / Climate Science

3.3.2 Rwanda

Training Module	Description	Thematic Area
Climate Financing	Accessing and managing climate funds and green investments	Climate Finance
Renewable Energy Business Case Development	Feasibility studies and investment case preparation for RE projects	Energy Economics
HOMER & LEAP Modelling	Advanced modelling for energy planning and decision-making	Energy Systems Modelling
Solar PV & Mini-grid Design & Installation	Practical deployment of solar systems and mini-grids	Clean Energy Deployment

Note: For this call, Applicants should only select either University of Rwanda or University of Nigeria as a possible host HEI for their Traineeship programmes.

4. BEFORE YOU APPLY - APPLICATION PROCESS

4.1. Preparation

The applicant should:

(a) Verify the eligibility criteria (if a candidate does not fulfil all of the eligibility criteria, S/he should not submit an application, as the application will be considered ineligible and not be evaluated).
(b) Identify the Target Group to which s/he belongs and the available scholarships.
(c) Select one host institution. It is highly recommended that applicants select one host institution from the available options but always with consideration to the language and background requirements defined by the host institution and programme.
(d) Visit the SMECC2E application portal and read the guidelines for applicants.
(e) Collect all necessary information and documents to complete the Application Form: Several documents are mandatory and the online system will not allow the application to be submitted without them. In case of unreadable documents, the application will be considered ineligible and will not be evaluated.
(f) Select the host institution with consideration to the following:
    i. The language requirements of the host institution.
    ii. The required academic background for the field of study.
    iii. **The available courses for the 1st cohort as listed on Table 6** of this document.
    iv. The need to adapt to different cultural realities at the host institution and also to different climate conditions, in case of selection.
(g) Student applicants should prepare a mobility project proposal describing the aims, activities and foreseen study/work plan and taking into consideration the objectives and goals of the host programme and of the SMECC2E project. The proposal must be clear in its methodology, impact and benefit, as well as its feasibility within the timeframe established by the duration of the scholarship.
(h) Staff should liaise with the home and prospective host universities on the programme of activities, e.g., lectures or administrative work to be delivered; research activities to be carried out; type of training to be followed; etc. This text will be included in the online application.
(i) Prepare a motivation letter to be submitted to the prospective host institution with regard to the benefits and expected outcomes of the mobility. This text will be included in the online application.

4.2. Online Submission Procedure

The Application Form is completed through the following steps:

(a) All applications would be done via the SMECC2E application portal.
(b) In order to access the form, the applicants should have a valid e-mail address and an internet connection. Communication of results will be done exclusively to the applicants e-mail via the portal.
(c) Applicants should then complete the online Application Form. The system will save a draft of the application every time the "Save" button is pressed, allowing it to be revised, edited and completed. The applicants should carefully prepare and revise the application before pressing the "Submit" button.
(d) After pressing "Submit" button, it is not possible to make any additional changes to the application.
(e) The Application Form must be completed in English.
(f) The deadline for the submission of online application is provided on the SMECC2E website. The Coordinating Office will do everything possible to avoid system failures, but cannot assume any responsibility should applicants encounter technical difficulties preventing submission just before the deadline. Applicants must therefore avoid last minute applications. **Applications sent by any other means, e.g. mail, fax or e-mail, will NOT be accepted.**
(g) Once the "Submit" button has been pressed, the application is closed and sent to the Coordinating Office. A digital notice of submission is sent to the applicant by email as well as a full copy of the application. This notice does not constitute a confirmation of eligibility nor of selection; it only confirms submission of the application.
(h) All applicants for student mobility are advised to prepare a work plan and research proposal in consultation with their own institution supervisor and supervisor from the prospective host institution.

4.3. Documents To Be Submitted

Digital copies of several documents are required and must be uploaded to the SMECC2E Portal. If the candidate fails to submit all required documents the application will be excluded without any possibility of appeal.

Supporting Document Types	Scholarship Category						
	Masters Degree Seeking	Masters Credit Seeking - Research Work	Masters Credit Seeking - Coursework	PhD Credit Seeking	PhD Degree Seeking	Traineeship	Staff
International Passport (West African and Southern African Applicants) / National ID Document for other regions)	Yes	Yes	Yes	Yes	Yes	yes	yes
Valid proof of employment at partner institution							yes
Valid proof of registration/enrolment in a Master's Programme (for Masters Applicants) / PhD Programme (for PhD applicants) at the home institution		yes	yes	yes		yes	
Valid proof of application for admission to relevant graduate Programme at SMECC2E partner institution outside your country	Yes				yes		
Bachelor's degree certificate	Yes	Yes	Yes	Yes	Yes	yes	yes
Bachelor's degree transcript – duly dated, signed and stamped by the awarding institution	Yes	Yes	Yes	Yes	Yes	yes	
Master's degree certificate				Yes	Yes		
Master's degree transcript - duly dated, signed and stamped by the awarding institution				Yes	Yes		
Curriculum Vitae (maximum four pages)	Yes	Yes	Yes	Yes	Yes	yes	yes
Motivation letter	Yes	Yes	Yes	Yes	Yes	yes	yes
Two reference letters. One from current and/or previous academic supervisor.	Yes	Yes	Yes	Yes	Yes	yes	

Supporting Document Types	Scholarship Category						
	Masters Degree Seeking	Masters Credit Seeking - Research Work	Masters Credit Seeking - Coursework	PhD Credit Seeking	PhD Degree Seeking	Traineeship	Staff
SMECC2E research project proposal or work plan.	Yes	Yes	Yes	Yes	Yes		
Mobility work plan or teaching/training proposal/training plan.						yes	Yes
Previous Intra-Africa/ACP mobility award declaration. This is a declaration whose template is provided by SMECC2E consortium. You can find the template to be used in the "Download" section, at the top right of the SMECC2E webpage.	Yes	Yes	Yes	Yes	Yes	yes	yes
Letter of support from host institution (if available)		yes		yes		yes	yes
Evidence of publication (Maximum of three merged as one PDF)				Yes	Yes		
Documents confirming disadvantaged group status (if applicable)	yes	yes	yes	Yes	Yes	Yes	
Transcript of Masters/PhD coursework completed at the home institution		yes		Yes			
Language proficiency certificates / proof of previous study (if required by the host university)	Yes	Yes	Yes	Yes	Yes	yes	yes
Declaration of Medical Fitness	Yes	Yes	Yes	Yes	Yes	yes	yes

All documents must be attached to the online Application Form. Applicants that are incomplete or have blank or unreadable documents will be considered ineligible. If an applicant wishes to attach more than one document in the same field (e.g. support letters from the home institution), one file should be attached that includes all documents, up to a maximum of 2MB.

5. ELIGIBILITY CHECKS, EVALUATION AND SELECTION PROCESS

A Call for application for the 1st Cohort is launched on 1st June 2026 on the SMECC2E website, portal and other social media handles of the project. **The call will end on 16th July 2026.**

Note: All applicants should not have already benefitted from another MOBAF 2022 - 2027 scholarship.

5.1. Administrative/Eligibility Checks.

Applications will pass through a preliminary screening whose goal will be to check the formal eligibility of the candidatures:

- **Completeness**: all the mandatory documents have been uploaded by the candidate in her/his official SMECC2E application form.
- **Eligibility requirements:** all the eligibility requirements have been met by the candidate:
  - nationality;
  - not benefitting from former another MOBAF 2022 - 2027 scholarship;
  - other general requirement that the partnership would like to set.
- **Disadvantaged Group**: in the case the candidate has declared to belong to a disadvantaged group supporting documents shall have been provided and will be checked by the Selection Committee.

The administrative check will be assessed upon the following application documents:

- Information provided in the application form
- Documents uploaded in the application

5.2 Evaluation Phases & Criteria

The evaluation of applicants would be done in two phases:

1. **Document Evaluation:** The desktop evaluation would be done by assessing the documentation submitted by the applicant. The evaluation criteria for this phase is presented on Table 7. The total score from this phase would be weighted by 70%.

2. **Online Interview:** At the end of the document evaluation phase, the top ranked applicants in each scholarship category would be invited for an online interview with the selection committee. The total score from this phase would be weighted by 30%.

Table 7 – Evaluation Criteria for Document Evaluation Phase

Evaluation Criteria		Maximum Points Available						
Criteria	**Description**	**Master's Degree Seeking**	**Masters Research Credit**	**Masters Course - Credit Seeking**	**PhD Credit Seeking**	**PhD Degree Seeking**	**Traineeship**	**Staff**
A. Academic Performance for student Applicants / Academic Profile for Staff Applicants	The applicant's previous academic performance will be evaluated based on Bachelor's and/or Master's degree results.	**25%**	**25%**	**25%**	**15%**	**15%**	**25%**	**15%**
	Evaluation components include:							
	Relevant Bachelors and Master's degree academic performance for PhD applicants Only							
	Relevant Bachelor's degree academic performance (for others)							
	Assessors will consider:							
	Grade Point Average (GPA).							
	Academic honours or distinctions.							
	Performance in relevant courses.							
B. Academic Publications	Degree-Seeking/credit seeking programme will receive additional consideration based on evidence of:	**0%**	**0%**	**0%**	**15%**	**15%**	**0%**	**0%**
	Scientific publications related to SMECC2E thematic areas							
	Participation in research projects							
	Conference presentations							
	Patents or innovative research outputs.							

Evaluation Criteria		Maximum Points Available						
Criteria	**Description**	**Master's Degree Seeking**	**Masters Research Credit**	**Masters Course - Credit Seeking**	**PhD Credit Seeking**	**PhD Degree Seeking**	**Traineeship**	**Staff**
	These achievements demonstrate research maturity and academic potential.							
C. Relevance to SMECC2E objectives	Applicants will be evaluated based on the alignment of their academic background and research interests with the objectives of the SMECC2E project. Evaluation considerations include: Relevance of the applicant's academic discipline to SMECC2E thematic areas Complementarity between the candidate's expertise and host university research strengths Potential contribution to the consortium's research priorities.	**25%**	**25%**	**25%**	**20%**	**20%**	**25%**	**25%**
D. Research Proposal (for Masters & PhD Applicants) / Work-Plan / Study Plan / Learning Agreement (for coursework credit)/ Mobility Work Plan (For	Applicants must submit a research proposal or work plan or academic plan as applicable outlining their intended research during mobility. Evaluation will focus on: Scientific quality and originality/feasibility of the proposal / proposed study or mobility plan Feasibility of the research plan Alignment with SMECC2E project themes Expected academic and societal impact, outcome and skills development. Integration with the applicant's home institution academic programme (for credit mobility).	**20%**	**20%**	**20%**	**20%**	**20%**	**20%**	**10%**

Evaluation Criteria		Maximum Points Available						
Criteria	**Description**	**Master's Degree Seeking**	**Masters Research Credit**	**Masters Course - Credit Seeking**	**PhD Credit Seeking**	**PhD Degree Seeking**	**Traineeship**	**Staff**
Staff Mobility)/ Traineeship Plan	Potential contribution to sustainable development in Africa.							
	For credit mobility applicants, the research plan should clearly demonstrate how the mobility period contributes to the applicant's doctoral research.							
E. Motivation of Candidates	The motivation letter will be evaluated based on:	**10%**	**10%**	**10%**	**10%**	**10%**	**10%**	**10%**
	Clarity of academic and research objectives							
	Relevance of mobility to the applicant's career development							
	Commitment to contributing to knowledge development and innovation in Africa							
	Understanding of the SMECC2E project objectives.							
F. Recommendation Letter / Commitment letter from proposed host institution	Two reference letters will be assessed to verify the candidate's:	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**20%**
	Research capability							
	Academic integrity							
	Potential for graduate-level research							
	Professional conduct.							
	Preference will be given to references from academic supervisors or senior researchers familiar with the applicant's research work.							

Evaluation Criteria		Maximum Points Available						
Criteria	**Description**	**Master's Degree Seeking**	**Masters Research Credit**	**Masters Course - Credit Seeking**	**PhD Credit Seeking**	**PhD Degree Seeking**	**Traineeship**	**Staff**
G. Language Proficiency (5%)	Applicants must demonstrate adequate language proficiency in the language of instruction at the host institution. Evidence may include: Standardized language test certificates Previous academic instruction in the relevant language. The requirement will follow the admission regulations of the host university.	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**0%**
H. Institutional Impact	Potential contribution to institutional capacity building, curriculum development, or research collaboration	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**15%**
I. Cross-cutting Considerations	Additional points will be awarded to support equity and diversity goals of the programme. These include: Gender balance (encouraging female participation) Inclusion of applicants from disadvantaged groups Representation from underrepresented countries or regions Applicants from conflict-affected or economically disadvantaged areas.	**10%**	**10%**	**10%**	**10%**	**10%**	**10%**	**5%**
		100%	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

5.3. Academic Eligibility & Quality.

Admission office and/or Academic supervisors at the Host universities coordinated by the SMECC2E Local Management Unit at each institution would perform an academic eligibility check. Checking whether the candidate meets the admission requirements (including language requirements) of the programme s/he applied for:

5.4. Appeal Procedure for Unsuccessful Applicants

5.4.1. Purpose of the Appeal Procedure

The SMECC2E Intra-Africa Mobility Project is committed to ensuring a **fair, transparent, objective, and merit-based selection process** for all scholarship applicants. While selection decisions are based on clearly defined eligibility requirements, evaluation criteria, and available mobility slots, unsuccessful applicants shall have the right to request a review of the outcome through a formal appeal mechanism.
The appeal procedure is intended to:

- Ensure transparency and fairness in scholarship selection
- Allow applicants to raise concerns regarding procedural irregularities
- Promote accountability in the evaluation process
- Strengthen trust in the integrity of the SMECC2E scholarship programme
- Provide an avenue for correcting genuine administrative or procedural errors

The appeal mechanism is **not intended to re-evaluate academic merit or substitute evaluator judgement**, but rather to determine whether the selection process was conducted fairly and in accordance with approved procedures.

5.4.2. Grounds for Appeal

Applicants may submit an appeal only on one or more of the grounds on Table 8.

Table 8 - Applicants may submit an appeal only on one or more of the following grounds:

Grounds for Appeal	Example
Administrative Error	• Incorrect recording of applicant information • Omission of submitted documents during evaluation • Calculation errors in scoring • Wrong applicant categorization
Procedural Irregularity	• Failure to follow published selection criteria • Non-compliance with stated evaluation procedures • Inconsistency in application assessment
Technical/System Error	• Portal malfunction affecting submission • Missing uploaded documents due to system failure • Incorrect application status generated by the system
Conflict of Interest or Ethical Concern	• Evidence of evaluator bias • Undisclosed conflict of interest • Unethical conduct during selection

5.4.3. Non-Appealable Matters

The following shall not constitute valid grounds for appeal**:**

- Disagreement with evaluators' academic judgement
- Low ranking due to competition from stronger candidates
- Failure to meet eligibility requirements
- Submission of incomplete documents by the applicant
- Late submission of application materials
- Lack of available scholarship slots.

An appeal shall not be used as an opportunity to submit new documents or substantially revise the original application after the deadline.
Unsuccessful applicants wishing to appeal must submit their appeal within 7 calendar days of receiving the official notification of non-selection. Appeals submitted after the deadline shall not be considered.

5.4.4. Appeal Submission Process

Applicants shall submit appeals through the SMECC2E Online Portal. Applicant must clearly indicate the ground(s) for appeal:

- Administrative Error
- Procedural Irregularity
- Technical/System Error
- Ethical Concern/Conflict of Interest

Applicants must clearly explain:

- the issue identified
- evidence supporting the appeal
- how the issue may have affected the outcome

5.4.5. Appeal Review Committee

Appeals shall be reviewed by an Independent Appeals Review Committee (IARC) appointed by the SMECC2E Project Coordination Team.
The committee should consist of:

1. Representative of the Coordinating Institution (UNN)
2. Quality Assurance Officer
3. Independent Academic Reviewer not involved in original evaluation
4. Representative from another partner institution *(where necessary)*

To avoid bias Individuals involved in the initial evaluation of the applicant shall not participate in the appeal review.

5.4.6. Possible Appeal Outcomes

The committee may determine:

Table 9 – Possible Appeal Outcomes.

Category	Description	Outcome
Appeal not upheld	No evidence of procedural or administrative error	Original decision stands.
Appeal Partially Upheld	Minor procedural issue identified, but outcome unaffected.	Recommendation issued for process improvement.
Appeal upheld	Evidence confirms material procedural or administrative error.	• re-scoring of application • re-evaluation by independent reviewers • interview reconsideration • movement to reserve list • scholarship offer (where justified)

5.4.7. Communication & Finality of Appeal Decision

Applicants shall receive a Formal Appeal Decision Letter containing:

- outcome of appeal
- summary of review findings
- reasons for decision
- any corrective actions taken

The decision of the Independent Appeals Review Committee shall be final and binding.

6. CONTACTS AND SUPPORT

Project website: https://smecc2e.unn.edu.ng/

Coordinating Institution: University of Nigeria.

Project Coordinator: Engr. Dr. Patrick Udeme-obong AKPAN

Project Desk Officer: Engr. Ifeanyi A. CHINEDU

Email address for general enquiries: smecc2e@unn.edu.ng

For enquiries related to specific partner institution, please kindly contact the underlisted:

Name of Main Contacts	Partnering HEIs	Role	Email
Dr. Patrick U. AKPAN	**University of Nigeria, Nigeria** Automotive Engineering / Mechanical Engineering Department & Africa Centre of Excellence for Sustainable Power & Energy Development (ACE-SPED).	SMECC2E Intra-Africa Project Coordinator.	Patrick.akpan@unn.edu.ng
Prof. Ioannis SARRIS	**Panepistimio Dytikis Attikis (University of West Attica), Greece** Mechanical Engineering Department.	EU – Technical Partner	sarris@uniwa.gr
Dr. Isaac Bryant MBIR	**University of Cape Coast, Ghana** Environmental Science Department, School of Biological Science.	UCC Coordinator	ibryant@ucc.edu.gh
Prof. Augustine MAKOKHA	**Moi University, Kenya**. Department of Mechanical Engineering.	MOI Coordinator	amakokha@mu.ac.ke
Dr. Emmanuel UFITEYEZU	**University of Rwanda, Rwanda** Africa Centre of Excellence in Energy for Sustainable Development (ACE-ESD)	UR Coordinator	eufiteyezu@ur.ac.rw
Ms. Precious NGWENYA	**Lupane State University, Zimbabwe** Department of Community Studies	LSU Coordinator	pngwenya@lsu.ac.zw
Dr. Michael CONTEH	**University of Sierra Leone, Sierra Leone** College of Engineering, Mechanical Engineering Department.	USL Coordinator	michael.conteh@usl.edu.sl

7. ANNEXES

Annex 1 - Academic Programmes hosted at the University of Nigeria, Nigeria

Annex 2 - Academic Programmes hosted at the University of Serria Leone, Serria Leone

Annex 3 - Academic Programmes hosted at Moi University, Kenya

Annex 4 - Academic Programmes hosted at the University of Rwanda, Rwanda

Annex 5 - Academic Programmes hosted at the Lupane State University, Zimbabwe

Annex 6 - Academic Programmes hosted at the University of Cape Coast, Ghana

Annex 1 - Academic Programmes hosted at the University of Nigeria

For admission enquiries: Contact Dr. Patrick U. Akpan (Patrick.akpan@unn.edu.ng)

Table of Contents

1. Master in Renewable and New Energy Systems

Duration (in semesters):
3

Study credits
43

Entry Requirements:

Applicants for Masters programmes must possess B.Eng. or B.Sc. degree with at least Second-Class Honours (Lower Division) with minimum CGPA of 2.75 on a 5-point scale (or 2.4 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Master of Engineering in Renewable and New Energy Systems programme is designed to develop highly skilled professionals with advanced knowledge in sustainable and emerging energy technologies. The programme equips students with competencies in renewable energy system design, energy conversion and storage, energy policy, financing, and systems analysis. It provides practical and research-oriented training in solar, wind, bioenergy, hydropower, geothermal, nuclear, and electrochemical technologies to address global and regional energy challenges. The programme also promotes innovation, industrial application, entrepreneurship, and interdisciplinary problem-solving, preparing graduates for careers in industry, academia, research, policy development, and sustainable energy project management.

Structure and content:

The programme consists of a total of 43 credit units distributed across three semesters and includes ancillary, compulsory core, elective, internship, and research project courses. The first semester focuses on foundational and advanced concepts in renewable and new energy technologies. Students undertake ancillary courses such as Research Methodology and ICT in Engineering, Engineering Design and Systems Analysis, and Masters Seminar to strengthen research, analytical, and communication skills. Core technical courses cover Principles of Renewable and New Energy Technologies, Solar Thermal Engineering, Energy Conversion and Storage Processes, and Renewable Energy Financing and Portfolio Standards. Students are also required to select one elective course in either Nuclear Energy Technology or Principles of Sustainable Energy. The second semester emphasizes practical applications, industrial training, and specialized renewable energy systems. Students study Solar Photovoltaics and Wind Technologies, Bioenergy Engineering, Hydropower and Geothermal Energy Technologies, Electrochemical Systems, and Electrochemical Processing of Materials. The programme also includes an Industrial Internship designed to provide hands-on industry experience and professional exposure. A major component of the programme is the Masters Project, which enables students to conduct independent research addressing contemporary energy challenges. The curriculum integrates engineering design, innovation, sustainability, energy economics, and applied

research to prepare graduates for leadership roles in academia, industry, government, and the renewable energy sector. Student performance is assessed through progress made in her/his coursework and as well as the research work progress report and presentations. The Masters must result in at least one publication in reputable peer reviewed international journal before completion.

Learning outcomes:

Upon completion of the programme, graduates will be able to demonstrate advanced knowledge of renewable and new energy technologies, energy conversion systems, and sustainable energy solutions. They will possess skills in the design, analysis, modelling, optimization, and management of renewable energy systems including solar, wind, bioenergy, hydropower, geothermal, and electrochemical technologies. Graduates will be able to apply engineering principles, research methods, and modern computational tools to solve complex energy challenges. They will also demonstrate competencies in energy policy, financing, entrepreneurship, teamwork, communication, and professional ethics, enabling them to contribute effectively to industry, research, academia, and sustainable national development.

List of Courses:

First Semester Courses

Ancillary Courses		**Credit Load**
PGC 601:	Research Methodology and ICT in Engineering	3
ACE 601:	Methods of Engineering Design and Systems Analysis	3
ACE 603:	Masters Seminar	3
Compulsory Core Courses		
ACE 611:	Principles of Renewable and New Energy Technologies	3
ACE 613:	Solar Thermal Engineering	3
ACE 615:	Energy Conversion and Storage Processes	3
ACE 619:	Renewable Energy Financing and Portfolio Standards	2
Elective Core Courses (Candidates to Choose One)		
ACE 617:	Nuclear Energy Technology	2
ACE 637:	Principles of Sustainable Energy	2
Sub-Total		**22**

Second Semester Courses

Ancillary Courses		**Credit Load**
ACE 602:	Industrial Internship	1
ACE 692:	Masters Project	6

Compulsory Core Courses

ACE 612:	Solar Photovoltaics and Wind Technologies		3
ACE 614:	Bioenergy Engineering		3
ACE 616:	Hydropower and Geothermal Energy Technologies		3
ACE 618:	Electrochemical Systems		3
ACE 638	Electrochemical Processing of Materials	2	
Sub-Total			**21**
Grand Total			**43**

2. Masters in Energy Policy, Regulation and Management

Duration (in semesters):
3

Study credits:
45

Entry Requirements:
Applicants for Masters programmes must possess B.Eng. or B.Sc. degree with at least Second-Class Honours (Lower Division) with minimum CGPA of 2.75 on a 5-point scale (or 2.4 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Masters of Engineering in Energy Policy, Regulation and Management is designed to develop highly skilled professionals with advanced knowledge in energy governance, policy formulation, regulation, planning, and sustainable energy management. The programme equips students with competencies in energy economics, utility regulation, market reforms, renewable energy development, and industrial energy management systems. It provides interdisciplinary training that integrates technical, legal, economic, and managerial aspects of the energy sector. The programme also promotes analytical thinking, research, innovation, and policy evaluation skills required to address contemporary energy challenges and support sustainable development, energy security, and effective energy sector transformation at national and global levels.

Structure and content:
The Master of Engineering in Energy Policy, Regulation and Management is a comprehensive postgraduate programme structured to provide advanced knowledge, analytical skills, practical exposure, and research competence in energy governance, regulation, planning, and sustainable energy management. The programme consists of 45 credit units distributed across two semesters and includes ancillary, compulsory core, elective, internship, and research project courses. The first semester emphasizes foundational knowledge in renewable energy systems, energy policy, sustainable development, and industrial energy management. Students undertake ancillary courses such as Research Methodology and ICT in Engineering, Advanced Methods of Engineering Design and Analysis, and Masters Seminar to strengthen research and professional communication skills. Core courses include Introduction to Renewable and New Energy Technologies, Energy Resources for Sustainable Development, Introduction to Energy Policy and Analysis, and Energy Management Systems and Policy in Industry. Students are also required to select one elective course in either Principles of Sustainable Energy or Renewable Energy Financing and Portfolio Standards. The second semester focuses on advanced policy implementation, utility regulation, energy market reforms, and renewable energy system development. Core courses include Green Energy Policy and Planning, Market Reforms and Utility Regulation, Development of Renewable Energy Systems (Grid and Non-

Grid), and Case Studies of Energy Incentive Programs. Students also choose an elective course related to infrastructure procurement or incentive regulation of utilities. The programme includes an Industrial Internship for practical industry exposure and a Masters Project that enables students to conduct independent research addressing contemporary energy policy and management challenges.

Learning outcomes:

Upon completion of the programme, graduates will be able to analyze and develop effective energy policies, regulatory frameworks, and management strategies for sustainable energy systems. They will demonstrate competencies in energy planning, utility regulation, market reforms, renewable energy integration, and industrial energy management. Graduates will be able to apply interdisciplinary approaches involving engineering, economics, law, and policy analysis to solve complex energy sector challenges. They will also possess skills in research, data analysis, critical thinking, communication, leadership, and professional ethics. The programme prepares graduates for careers in government agencies, regulatory institutions, energy industries, consultancy, research organizations, and academia.

List of Courses:

First Semester		**Credit Hours**
Ancillary Courses		
PGC 601:	Research Methodology and ICT in Engineering	3
ACE 601:	Advanced Methods of Engineering Design and Analysis	3
ACE 603:	Masters Seminar	3
Compulsory Core Courses		
ACE 611:	Introduction to Renewable and New Energy Technologies	3
ACE 661:	Energy Resources for Sustainable Development	3
ACE 663:	Introduction to Energy Policy and Analysis	3
ACE 665:	Energy Management System and Policy in the Industry	3
Elective Core Courses (Candidates to Choose One)		
ACE 637:	Principles of Sustainable Energy	2
ACE 619	Renewable Energy Financing and Portfolio Standards	2
Sub-Total		**23**

Second Semester

Ancillary Courses		
ACE 602:	Industrial Internship	1
ACE 692:	Masters Project	6
Compulsory Core Courses		

ACE 662:	Green Energy Policy and Planning	3
ACE 664:	Market Reforms and Utility Regulation (Legal and Regulatory Provisions)	3
ACE 666:	Development of Renewable Energy Systems (Grid & Non Grid)	3
ACE 668:	Case Studies of Energy Incentive Programs (Mini Project)	3

Elective Courses (Candidates to Choose One)

ACE 686:	Infrastructure Service Procurement	3
ACE 688:	Fundamentals of Incentive Regulation of Utilities	3
Sub-Total		**22**

Grand Total		**45**

3. Masters in Sustainable Energy Materials

Duration (in semesters):
3

Study credits:
45

Entry Requirements:
Applicants for Masters programmes must possess B.Eng. or B.Sc. degree with at least Second-Class Honours (Lower Division) with minimum CGPA of 2.75 on a 5-point scale (or 2.4 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Master of Science/Engineering in Sustainable Energy Materials is designed to develop highly skilled professionals and researchers with advanced knowledge in the design, characterization, processing, and application of materials for sustainable energy systems. The programme equips students with competencies in energy storage materials, nanotechnology, electrochemical systems, additive manufacturing, conducting polymers, and computational materials science. It provides interdisciplinary training that integrates materials engineering, renewable energy technologies, and advanced analytical techniques to address global energy and environmental challenges. The programme also promotes innovation, research, and industrial application of advanced materials for clean energy generation, conversion, storage, and sustainable technological development.

Structure and content:
The Master of Science/Engineering in Sustainable Energy Materials is a multidisciplinary postgraduate programme designed to provide advanced theoretical knowledge, laboratory competence, industrial exposure, and research skills in the development and application of materials for sustainable energy systems. The programme consists of 45 credit units distributed across two semesters and includes ancillary, compulsory core, internship, and research project courses. The first semester focuses on foundational and advanced concepts in renewable energy technologies and energy materials. Students undertake ancillary courses such as Research Methodology and ICT in Engineering, Methods of Engineering Design and Systems Analysis, and Masters Seminar to strengthen analytical, communication, and research skills. Core courses include Introduction to Renewable and New Energy Technologies, Materials for Energy Storage and Conversion, Materials for Energy Sources, Computational Materials Science Techniques and Applications, Advanced Materials Characterization Methods, Principles of Sustainable Energy, and Nuclear Energy Materials. These courses provide students with knowledge of material synthesis, computational modelling, materials performance evaluation, and advanced characterization techniques for energy applications. The second semester emphasizes specialized and emerging technologies in sustainable energy materials. Students study

Nanotechnology and Thin Film Technology, Industrial Ceramics for Energy Materials, Electrical, Optical and Magnetic Properties of Materials, Electrochemical Processing of Materials, Additive Manufacturing, and Principles of Conducting Polymers. The programme also includes an Industrial Internship to provide practical industrial experience and a Masters Project that enables students to conduct independent research on contemporary challenges in sustainable energy materials and advanced manufacturing technologies.

Learning outcomes:

Upon completion of the programme, graduates will be able to design, analyze, process, and characterize advanced materials for sustainable energy applications. They will demonstrate competencies in energy storage and conversion materials, nanotechnology, electrochemical systems, conducting polymers, additive manufacturing, and computational materials science. Graduates will be able to apply advanced laboratory, modelling, and analytical techniques to solve complex problems related to clean energy technologies and material performance. They will also possess research, innovation, communication, teamwork, and problem-solving skills required for professional practice in academia, research institutions, manufacturing industries, energy sectors, and advanced technology development related to sustainable energy materials and systems.

List of Courses:

First Semester

Course Code		Title	Credit Hours
Ancillary Courses			
PGC	601	Research Methodology and ICT in Engineering	3
ACE	601	Methods of Engineering Design and Systems Analysis	3
ACE	603	Masters Seminar	3
Compulsory Core Courses			
ACE	611	Introduction to Renewable and New Energy Technologies	3
ACE	631	Materials for Energy Storage and Conversion	3
ACE	633	Materials for Energy Sources	2
ACE	635	Computational Materials Science Techniques and Applications	2
ACE	639	Advanced Materials Characterization Methods	3
ACE	637	Principles of Sustainable Energy	2
ACE	671	Nuclear Energy Materials	2
Sub-Total			**26**

Second Semester

Ancillary Courses			
ACE	602	Industrial Internship	1
ACE	692	Masters Project	6
Compulsory Core Courses			
ACE	632	Nanotechnology and Thin Film Technology	2
ACE	634	Industrial Ceramics for Energy Materials	2
ACE	636	Electrical, Optical, and Magnetic Properties of Materials	2

ACE	638	Electrochemical Processing of Materials		2
ACE	672	Additive Manufacturing		2
ACE	674	Principles of Conducting Polymers	2	
Sub-Total				**19**
Grand Total				**45**

4. Masters in Climate Change Studies, Energy and Environment

Duration (in semesters):
3

Study credits:

Entry Requirements:
Applicants for Masters programmes must possess B.Eng. or B.Sc. degree with at least Second-Class Honours (Lower Division) with minimum CGPA of 2.75 on a 5-point scale (or 2.4 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Master of Science in Climate Change Studies, Energy and Environment is designed to develop professionals with advanced knowledge and analytical skills in climate science, environmental policy, sustainability, and climate risk management. The programme equips students with interdisciplinary competencies in climate change theory, adaptation and mitigation strategies, environmental governance, and the impacts of climate change on health, agriculture, infrastructure, and ecosystems. It also integrates legal, economic, and indigenous knowledge systems to support sustainable development. Graduates are prepared to conduct research, design policies, and implement solutions that address climate variability and promote resilience in communities, ecosystems, and national development systems globally.

Structure and content:
The Master of Science (M.Sc.) in Climate Change Studies is a multidisciplinary postgraduate programme designed to provide advanced theoretical knowledge, practical skills, and research competence in climate science, sustainability, and environmental management. The programme consists of 34 credit units distributed across two semesters and includes compulsory, elective, field-based, and research project components. The first semester focuses on foundational and interdisciplinary knowledge in climate change science and sustainability. Students take compulsory courses such as Research Methodology and Application of ICT in Research, Theory of Science of Climate Change, Role of Physical Science in Climate Change, Conceptual and Policy Issues in Sustainable Studies, and Climate Change, Health and Biosciences. These courses provide a strong grounding in scientific principles, policy frameworks, and the interdisciplinary nature of climate change. Students also select two elective courses from areas such as biodiversity management, infrastructure impacts, environmental policy, legal frameworks, political economy, and energy management to broaden their understanding of climate-related systems. The second semester emphasizes applied learning, field studies, and research execution. Compulsory courses include Climate Change and Agricultural Production, Field Studies and Sustainability Approaches, Climate Change and Engineering Infrastructure, Seminar from the Master's Project Report, and the Master's Project itself. These components integrate theoretical knowledge with practical field-based applications and independent research. Elective courses in the second semester provide additional

specialization in indigenous knowledge systems, environmental justice, instrumentation development, entrepreneurship, and water resource management. The programme culminates in a research project that demonstrates the student's ability to analyze and address real-world climate change challenges.

Learning outcomes:

Upon completion of the programme, graduates will be able to critically analyze climate change processes, impacts, and policy responses using interdisciplinary approaches. They will demonstrate competencies in climate science, environmental policy analysis, sustainability planning, and climate risk assessment across sectors such as agriculture, health, infrastructure, and ecosystems. Graduates will be able to design and implement adaptation and mitigation strategies that enhance resilience and sustainability. They will also possess research, analytical, communication, and policy formulation skills. The programme prepares graduates for careers in environmental agencies, research institutions, NGOs, government ministries, and international organizations working on climate change and sustainable development.

List of Courses :

First Semester Courses

Compulsory Courses

Courses	Title	Unit
PGC 601	Research Methodology and Application of ICT in Research	3
CCS 611	Theory of Science of Climate Change	2
CCS 613	Role of Physical Science in Climate Change	2
CCS 621	Conceptual and Policy Issues in Sustainable Studies	2
CCS 661	Climate Change, Health and Biosciences	2
	Sub-Total	**11**
Elective Courses (any two)		
CCS 665	Climate Change, Biodiversity and Wild life Management	2
CCS 615	Climate Change Effects on Infrastructure (Energy, Transports, Communications, etc.)	2
CCS 675	Legal and Institutional Framework for Climate Change Regulation in Nigeria	2
CCS 653	Environmental Policy Issues on Climate Change	2
CCS 625	Mitigation, Adaptation and Management Issues in Climate Change Sustainability Studies	2
CCS 629	Political Economy of Climate Change	2
CCS 673	Climate Change Law and Policy	2

CCS 631	Energy Management Principles	2
	Sub-Total (Electives)	**4**
	Sub-Total (First Semester, First Year)	**15**

Second Semester Courses

Compulsory Courses

Courses	**Title**	**Unit**
CCS 628	Climate Change and Agricultural Production	2
CCS 642	Field Studies, Theories and Approaches to Sustainability Studies in Climate Change	2
CCS 632	Climate Change and Engineering Infrastructure	2
CCS 682	Seminar from The Master's Project Report	3
CCS 690	Project Reports	6
	Sub-Total	**15**

Elective Courses (any two)

CCS 612	Practical Course on Indigenous Application to Climate Change	2
CCS 614	Indigenous Instrumentation Development for Climate Change Research	2
CCS 672	Interrelationship Between Human Rights Law, Public Health, Environmental Justice and Climate Change	2
CCS 652	Environmental Literacy of Climate Change	2
CCS 616	Indigenous Design Development of Instruments for Climate Change Research	2
CCS 654	Entrepreneurship for Climate Change Adaptation	2
CCS 648	Water Resource Management and Climate Change Adaptation	2

Sub-Total (electives)	**4**
Sub-Total (Second Semester)	**19**
Total	**34**

5. PhD in Renewable and New Energy Systems

Duration (in semesters):
6

Study credits (per semester):
34

Entry Requirements:
Applicants for Ph.D must possess M.Eng or M.Sc with a minimum CGPA of 3.5 on a 5-point scale (or 3.0 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Doctor of Philosophy in Renewable and New Energy Systems is designed to develop high-level researchers and experts capable of advancing knowledge, innovation, and technology in sustainable energy systems. The programme equips candidates with advanced research skills in renewable energy technologies, energy systems modelling, hybrid power systems, and sustainable energy integration. It emphasizes original research in solar, wind, bioenergy, storage systems, and mini-grid development. The programme also strengthens competencies in scientific writing, grant acquisition, engineering systems analysis, and technology innovation. Graduates are prepared to contribute to academia, industry, and policy development by addressing complex energy challenges and driving sustainable energy transformation globally.

Structure and content:
The Doctor of Philosophy (PhD) in Renewable and New Energy Systems is a research-intensive doctoral programme designed to produce world-class scholars, innovators, and experts in sustainable energy technologies and systems. The programme spans six semesters with a total of 34 credit units and is structured around advanced coursework, research training, seminars, and dissertation development. The first semester provides foundational doctoral-level training in research methodology, engineering systems design, and advanced renewable energy technologies. Candidates undertake courses such as Synopsis and Research Grant Writing to strengthen academic proposal development and funding acquisition skills. Additional core courses include Advanced Methods of Engineering Design and Systems Analysis, Advanced Principles of Renewable and New Energy Technologies, and Doctoral Seminar I, which collectively enhance analytical, conceptual, and scientific research competencies. The second semester focuses on specialized applications and research immersion. Students undertake Industrial Internship for practical exposure and Doctoral Seminar II for advanced research presentation and peer review. Core technical courses include Solar PV and Wind Mini-grids and Advanced Bioenergy Engineering, which support applied research in decentralized and sustainable energy systems. The programme culminates in a PhD Thesis, which represents an original and significant contribution to knowledge in renewable and new energy systems. Overall, the programme integrates coursework, seminars, industrial engagement, and independent research to prepare graduates for leadership roles in academia, research institutions, energy industries, and policy development organizations..

Learning outcomes:

Upon completion of the programme, graduates will be able to conduct independent, original, and high-impact research in renewable and new energy systems. They will demonstrate advanced expertise in energy systems modelling, renewable energy integration, hybrid systems, mini-grid technologies, bioenergy, and solar and wind power systems. Graduates will be able to develop innovative solutions to complex energy challenges and contribute to scientific knowledge through publications and patents. They will also possess strong competencies in grant writing, academic communication, data analysis, and project leadership. The programme prepares scholars for careers in academia, research institutions, industry innovation, policy development, and global energy transformation leadership.

List of Courses:

First Semester Courses

	Credit Hours
PGC 701: Synopsis and Research Grant Writing	3
ACE 701: Advanced Methods of Engineering Design and Systems Analysis	3
ACE 711: Advanced Principles of Renewable and New Energy Technologies	3
ACE 703: Doctoral Seminar I	3
Sub-Total	**12**

Second Semester Courses

ACE 702: Industrial Internship	1
ACE 706: Doctoral Seminar II	3
ACE 712: Solar PV and Wind Minigrids	3
ACE 714: Advanced Bioenergy Engineering	3
ACE 792: PhD Thesis	12
Sub-Total	**22**
Grand Total	**34**

6. PhD in Energy Policy, Regulation and Management

Duration (in semesters):
6

Study credits (per semester):
34

Entry Requirements:
Applicants for Ph.D must possess M.Eng or M.Sc with a minimum CGPA of 3.5 on a 5-point scale (or 3.0 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Doctor of Philosophy in Energy Policy, Regulation and Management is designed to develop high-level researchers and experts in energy governance, policy analysis, regulatory frameworks, and sustainable energy system management. The programme equips candidates with advanced competencies in energy economics, market reforms, utility regulation, energy planning, and financing of energy systems. It emphasizes original research in energy policy design, institutional reforms, and sustainable energy transitions. Candidates are trained in advanced analytical methods, grant writing, and academic research. Graduates are prepared to contribute to academia, government agencies, regulatory institutions, and international organizations in addressing complex energy governance and sustainability challenges globally.

Structure and content:
The Doctor of Philosophy (PhD) in Energy Policy, Regulation and Management is a structured, research-intensive doctoral programme aimed at producing experts in energy governance, regulation, and sustainable energy systems management. The programme spans four semesters with a total of 34 credit units, combining advanced coursework, seminars, industry exposure, and independent research culminating in a doctoral thesis. The first semester focuses on strengthening research capacity and advanced theoretical foundations in energy systems and policy analysis. Candidates undertake PGC 701: Synopsis and Research Grant Writing to develop skills in research proposal development and funding acquisition. They also study Advanced Methods of Engineering Design and Systems Analysis, Advanced Principles of Renewable and New Energy Technologies, and participate in Doctoral Seminar I to enhance academic writing, analytical thinking, and research presentation skills. The second semester emphasizes advanced application in energy governance, regulation, and management. Students participate in Industrial Internship for practical exposure and Doctoral Seminar II for advanced scholarly engagement. Core courses include Advanced Industry Energy Management, Policy and Financing, and Advanced Market Reforms, Utility Regulation and Procurement, which focus on regulatory systems, energy markets, policy implementation, and institutional frameworks. The programme culminates in a PhD Thesis, which represents an original scholarly contribution to energy policy, regulation, and management. Overall, the programme integrates advanced coursework, industry engagement, and independent research to prepare graduates for leadership roles in academia, government agencies, regulatory bodies, international organizations, and the energy industry..

Learning outcomes:

Upon completion of the programme, graduates will be able to conduct independent, original, and high-impact research in energy policy, regulation, and management. They will demonstrate advanced expertise in energy governance, market reforms, utility regulation, energy economics, and sustainable energy planning. Graduates will be able to develop, analyze, and evaluate complex energy policies and regulatory frameworks. They will possess strong competencies in academic writing, grant acquisition, data analysis, and policy advisory. The programme prepares scholars for leadership roles in academia, government institutions, regulatory agencies, international organizations, and the energy industry, contributing to sustainable energy transitions and global energy governance reform.

List of Courses:

First Semester	
Units	
PGC 701: Synopsis and Research Grant Writing	3
ACE 701: Advanced Methods of Engineering Design and System Analysis	3
ACE 711: Advanced Principles of Renewable and New Energy Technologies	3
ACE703: Doctoral Seminar 1	3
Subtotal	**12**
Second Semester	
ACE 702: Industrial Internship	1
ACE 704: Doctoral Seminar II	3
ACE 766: Advanced Industry Energy Management, Policy & Financing	3
ACE 768: Advanced Market Reforms, Utility Regulation and Procurement	3
ACE 792: PhD Thesis	12
Subtotal	**22**
Grand Total	**34**

7. PhD in Sustainable Energy Materials

Duration (in semesters):
6

Study credits (per semester):
37

Entry Requirements:
Applicants for Ph.D must possess M.Eng or M.Sc with a minimum CGPA of 3.5 on a 5-point scale (or 3.0 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The Doctor of Philosophy in Sustainable Energy Materials is designed to develop advanced researchers and experts in the design, synthesis, characterization, modelling, and application of materials for sustainable energy systems. The programme equips candidates with competencies in energy storage materials, nanomaterials, microelectronics, electromechanical devices, and experimental techniques for energy applications. It emphasizes original research aimed at improving energy conversion, storage efficiency, and device performance. Candidates are trained in advanced modelling, fabrication, and analytical methods, as well as research grant writing and scientific communication. Graduates are prepared for leadership roles in academia, research institutions, and high-technology industries driving sustainable energy innovation.

Structure and content:
The Doctor of Philosophy (PhD) in Sustainable Energy Materials is a research-intensive doctoral programme designed to produce world-class scholars and innovators in advanced materials for energy applications. The programme spans four semesters with a total of 37 credit units and integrates advanced coursework, seminars, industrial exposure, and independent doctoral research culminating in a thesis. The first semester focuses on foundational doctoral training in research methodology, engineering systems design, and advanced materials engineering concepts. Candidates undertake PGC 701: Synopsis and Research Grant Writing to develop skills in research proposal development and funding acquisition. They also study Advanced Methods of Engineering Design and Systems Analysis and participate in Doctoral Seminar I to enhance academic writing, presentation, and research communication skills. Core technical courses include Design and Fabrication of Electromechanical Devices and Experimental Techniques in Sustainable Energy Materials, which provide advanced knowledge in device fabrication, laboratory methods, and experimental characterization of energy materials. The second semester emphasizes advanced modelling, simulation, and applied research. Candidates undertake Industrial Internship for practical exposure and Doctoral Seminar II for research dissemination and peer evaluation. Core courses include Modelling and Simulation of Energy Materials and Integrated Microelectronic Devices, focusing on computational modelling, device integration, and advanced material systems for energy applications. The programme culminates in a PhD Thesis, representing an original and significant contribution to knowledge in sustainable energy materials. Overall, the programme integrates coursework, research training, and industrial exposure

to prepare graduates for leadership roles in academia, advanced research, and high-technology energy industries..

Learning outcomes (max 200 words):

Upon completion of the programme, graduates will be able to conduct independent, original, and high-impact research in sustainable energy materials and related technologies. They will demonstrate advanced expertise in materials synthesis, modelling, simulation, fabrication, and characterization for energy applications. Graduates will be able to design and optimize materials for energy storage, conversion, and device integration. They will possess strong competencies in experimental techniques, microelectronics, electromechanical systems, academic writing, and grant acquisition. The programme prepares scholars for leadership roles in academia, research institutions, and advanced technology industries, contributing to innovation in sustainable energy materials and next-generation energy systems.

List of Courses :

First Semester

Course Code		Title	Credit Hours
Ancillary Courses			
PGC	701	Synopsis and Research Grant Writing	3
ACE	701	Advanced Methods of Engineering Design and Systems Analysis	3
ACE	703	Doctoral Seminar I	3
Compulsory Core Courses			
ACE	731	Design and Fabrication of Electromechanical Devices	3
ACE	733	Experimental Techniques in Sustainable Energy Materials	3
Sub-Total			**15**

Second Semester

Ancillary Courses			
ACE	702	Industrial Internship	1
ACE	706	Doctoral Seminar II	3
ACE	792	PhD Thesis	12
Compulsory Core Courses			
ACE	732	Modelling and Simulation of Energy materials	3
ACE	734	Integrated Microelectronic Devices	3
Sub-Total			**22**
Grand Total			**37**

8. PhD in Climate Change Studies, Energy and Environment

Duration (in semesters):
6

Study credits:
33

Entry Requirements:
Applicants for Ph.D must possess M.Eng or M.Sc with a minimum CGPA of 3.5 on a 5-point scale (or 3.0 on a 4-point scale) from any nationally/internationally recognized university in the relevant disciplines in engineering or physical science.

Objectives:
The objective of the PhD in Climate Change Studies (Energy and Environment) is to develop highly skilled researchers capable of advancing knowledge and providing innovative solutions to complex climate-related challenges. The programme equips candidates with advanced theoretical understanding of climate systems, interdisciplinary analytical tools, and robust research methodologies for investigating climate change impacts, mitigation, and adaptation strategies. It emphasizes the integration of energy systems and environmental sustainability to address global and regional development needs. Graduates will be trained to conduct independent, high-quality research, contribute to scholarly publications, influence policy formulation, and support sustainable development through evidence-based decision-making in academia, industry, and government sectors.

Structure and content:
The PhD in Climate Change Studies (Energy and Environment) is structured as a research-intensive doctoral programme designed to produce advanced scholars and practitioners capable of addressing complex environmental and energy-related challenges. The programme is organized into two semesters of coursework and structured research training, followed by independent dissertation work. The first semester focuses on foundational research preparation and scholarly development. Candidates undertake courses in synopsis and grant writing, general concepts of climate change across disciplines, seminar presentations on research proposals, and critical review of scholarly literature. This phase builds competence in research formulation, academic writing, and interdisciplinary understanding of climate change issues. The second semester advances students into deeper methodological training and research execution. Courses include advanced concepts in climate change applications, research methods in climate studies, and seminar presentations reporting research progress. The semester culminates in a thesis or dissertation component, which represents the core independent research output of the programme. Overall, the structure integrates coursework (21 units) and research (12 units), emphasizing progressive development from conceptual understanding to advanced analytical and investigative skills. Continuous seminars ensure academic rigor, while research components promote originality, innovation, and policy relevance. The programme is designed to produce graduates who can contribute meaningfully to academia, industry, government, and global climate governance through high-impact research and sustainable solutions.

Learning outcomes:

Upon completion of the PhD in Climate Change Studies (Energy and Environment), graduates will be able to critically analyse complex climate systems and their interactions with energy and environmental processes. They will demonstrate advanced competence in designing and executing independent, original research using appropriate qualitative and quantitative methodologies. Graduates will be able to develop innovative mitigation and adaptation strategies for climate change challenges in diverse contexts. They will effectively communicate research findings through high-quality academic publications, seminars, and policy briefs. Additionally, they will contribute to evidence-based policymaking, interdisciplinary collaboration, and sustainable development initiatives at local, national, and global levels.

List of Courses:

PhD Courses

First Semester

Compulsory Courses

Courses	Title	Units
PGC 701	Synopsis Writing and Grant Writing	3
CCS 703	General Concepts of Climate Change to Various Fields I	3
CCS 781	Seminar 1 Presentation on research Proposal	3
CCS 783	Book and/or Journal Article Review on Climate Change	3
	Sub-Total	**12**

Second Semester

Compulsory Courses

Courses	Title	Units
CCS 702	General Concepts of Climate Change to Various Fields II	3
CCS 704	Advanced Seminar in Research Methods in Climate Change Studies	3
CCS 782	Seminar II Presentation at the end of Research Work	3
CCS 790	Thesis/Project	12
	Total	**33**

Annex 2 - Academic Programmes hosted at the University of Sierra Leone

For admission enquiries: contact Dr. Michael Conteh (michael.conteh@usl.edu.sl)

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1. Masters in Energy Studies

Duration (in semesters):

4

Study credits:

60

Year 1 – Semester 1 = 24; Year 1 – Semester 2 = 24; Year 2 – Thesis = 12

Entry Requirements:

General

To be considered for enrolment in the Master's programme at the University of Sierra Leone, applicants:

- must be a holder of a bachelor's degree, preferably at least a second class, in the specific or related field(s) of study from a recognised university or a post-secondary qualification that is equivalent to a University of Sierra Leone bachelor degree earned from an officially recognized higher education institution (HEI).
- must meet departmental selection criteria which may include but not be limited to entrance examination, relevant work experience for a given period, and any other supplementary information/document as required by a programme.

International applicants

International applicants must meet the minimum standards for English language proficiency of the University. Colleges and faculties within the University of Sierra Leone may set higher minimum standards for English language proficiency as per the programme requirements. All applicants shall be informed of admission decisions.

Objectives:

The MPhil Energy Studies Programme aims to:

- Provide advanced knowledge and technical competence in renewable and conventional energy systems, with particular relevance to Sierra Leone and the sub-region.
- Develop graduates with strong analytical and problem-solving skills for addressing energy challenges in industrial, commercial, and domestic sectors.
- Equip students with the scientific, engineering, economic, environmental, and policy understanding required for sustainable energy planning and management.

- Promote research capacity and innovation in energy systems, renewable energy integration, and sustainable energy development.
- Prepare graduates for leadership roles in academia, government institutions, utilities, energy industries, consultancy, and international development organizations.

Structure and content:

The MPhil Energy Studies Programme is a full-time two-year postgraduate programme consisting of:

- Year One: Taught coursework and practical training
- Year Two: Independent research and thesis writing

The programme combines theoretical instruction, laboratory/practical sessions, seminars, case studies, field visits, and research work.

Learning outcomes:

Upon successful completion of the programme, graduates should be able to:

1. Demonstrate advanced knowledge of energy systems and renewable energy technologies.
2. Explain the principles of sustainable energy development and environmental management.
3. Understand the challenges and opportunities associated with energy access and energy transition in developing countries.
4. Evaluate alternative energy technologies and recommend suitable solutions for specific contexts.
5. Assess environmental impacts associated with energy systems and propose mitigation measures.
6. Use modern analytical, modelling, and simulation tools in energy studies.
7. Prepare professional technical reports, policy briefs, and research publications.
8. Contribute to policy development, planning, and decision-making in the energy industry and related sectors.

List of Courses:

Course Code	Course Title	Credits	Semester
MENG 611	Introduction to Energy Policy and Energy Efficiency	6	1
MENG 612	Energy Poverty and Development	6	1
MENG 613	Local Solutions for Energy Access	6	1
RESM 610	Research Methods and Seminar	6	1

Course Code	Course Title	Credits	Semester
MENG 621	Energy and Climate Change	6	2
MENG 622	Mini-grids: Planning and Design	6	2
MENG 623	Solar Appliances for Off-grid Communities	6	2
MENG 624	Energy Modelling and Energy Economics	6	2
MENG 600	THESIS	12	Year 2

2. PhD in Engineering

Duration (in semesters):
6

Entry Requirements:
The entry requirement is a masters degree and applicants apply with a research proposal.

Objectives:

The Ph.D. in Engineering programme at the University of Sierra Leone (USL) aims to:

1. Equip candidates with advanced theoretical, analytical, and methodological skills necessary to conduct high-quality, original, and independent engineering research.
2. Foster the development of innovative engineering solutions, technologies, and systems that address emerging industrial, environmental, and societal challenges.
3. Enable students to make original and significant contributions to engineering knowledge through rigorous dissertation research and scholarly publications.
4. Develop the ability to formulate, model, analyze, and solve complex engineering problems using advanced scientific and computational approaches.
5. Prepare graduates for careers as university lecturers, researchers, postdoctoral scholars, and leaders in engineering education and research institutions.
6. Equip graduates with advanced competencies for leadership roles in engineering industries, consultancy, infrastructure development, and technology-driven enterprises.
7. Promote interdisciplinary collaboration and the application of engineering research to sustainable development, industrial productivity, and national development priorities.
8. Instil ethical responsibility, professionalism, and effective communication skills necessary for conducting impactful engineering research and practice.

Structure and content:

The Ph.D. in Engineering at the University of Sierra Leone (USL) is a rigorous, research-intensive doctoral programme offered through the Faculty of Engineering and Architecture at Fourah Bay College (FBC). The programme is designed to develop advanced expertise in engineering theory, applied research, technological innovation, and problem-solving through specialized, supervised dissertation research. It prepares candidates for leadership roles in

academia, industry, research institutions, consultancy, and policy development by equipping them with advanced analytical, technical, and research competencies to address complex engineering and technological challenges. The programme emphasizes original contribution to knowledge, interdisciplinary inquiry, and the application of engineering solutions to contemporary societal and industrial needs.

Learning outcomes:

Upon successful completion of the Ph.D. in Engineering programme, graduates should be able to:

1. Demonstrate advanced and specialized knowledge in a chosen field of engineering, including contemporary theories, methods, and technological developments.
2. Critically evaluate and synthesize engineering literature, theories, and emerging trends to identify research gaps and generate new knowledge.
3. Develop original contributions to engineering knowledge through independent and rigorous doctoral research.
4. Design and conduct advanced engineering research using appropriate qualitative, quantitative, experimental, computational, or simulation-based methodologies.
5. Formulate, model, analyze, and solve complex engineering problems using advanced scientific, mathematical, and engineering principles.
6. Apply advanced analytical, computational, and technological tools to investigate engineering systems and optimize engineering performance.
7. Generate innovative and evidence-based engineering solutions to industrial, environmental, infrastructure, and societal challenges.
8. Communicate complex engineering concepts and research findings effectively through scholarly publications, technical reports, conference presentations, and professional engagement.
9. Demonstrate leadership, teamwork, and project management skills in multidisciplinary and multicultural engineering environments.
10. Adhere to professional ethics, research integrity, and responsible engineering practice, including sustainability and societal impact considerations.
11. Function effectively as independent researchers, university academics, consultants, and engineering leaders in industry, government, and international organizations.
12. Contribute to national and regional technological advancement and sustainable development through innovative engineering research, policy contributions, and industrial problem-solving.

List of Courses:

No coursework required. It is strictly by research.

Annex 3 - Academic Programmes hosted at Moi University Kenya

For admission enquiries contact: Prof. Augustine Makokha (amakokha@mu.ac.ke)
https://admissions.mu.ac.ke/

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1. Master in Sustainable Energy and Energy Access

Duration (in semesters): 24 Months (6 Semesters)

Study credits (per semester): 16 Credits

Entry Requirements

To be eligible for admission into the degree programme, an applicant should hold a Bachelor's degree in any of the following fields: Engineering; Energy Science/Technology, Physics, and Environmental Science.

Objectives

The Master of Science (MSc) programme in Sustainable Energy & Energy Access is a multidisciplinary programme designed to train graduates for high level skills and abilities needed to advance the development and deployment of clean energy technologies, and provide solutions to energy sustainability and access challenges as part of the process of enabling society to advance. Interdisciplinary competencies like energy markets, climate policies and regulation as well as courses in entrepreneurship, community engagement are integrated into the programme to provide students with the flexibility required by the labour market. Further the program will enable learners to develop scientific research skills relevant to the energy sector.

Structure and content

The programme consists of course work, examination and research. All course work is done in the first year of study. Emphasis is laid on design, planning, development and management aspects relevant to the clean energy sector. This programme is implemented using a combination of delivery modes (Face-to-face, e-learning). Core aspects of the course content include clean energy technologies, energy efficiency & management, energy policy and markets, project management, project finance, and energy entrepreneurship. Students are required to pass in all the prescribed courses in the programme. The pass mark is 50%. Assessment consist of continuous assessment activities (based on reports, essays, quizzes, peer evaluation, laboratory activities), and end of semester examination. To be eligible for admission into the degree programme, an applicant should hold a Bachelor's degree in any of the following fields: Engineering; Energy Science/Technology, Physics, and Environmental Science

Learning outcomes

The programme provides opportunities for students to acquire core knowledge and skills, and develop multi-disciplinary competencies and attributes needed in the energy sector to support development of, and access to clean, sustainable and affordable energy. The graduates of this programme shall be able to:

1) Design, install and optimize clean energy systems or adapt existing ones to support energy accessibility.
2) Undertake strategic planning and management of energy projects and develop business models for providing sustainable energy services to society.
3) Formulate appropriate policies, regulations and strategies to support the energy access sector.
4) Communicate effectively and demonstrate leadership, creativity, problem solving skills and ethical responsibility in professional practice.

List of Courses (max 200 words):

Year	Sem	Code	Title	Units	Hrs (per wk)			13 wks
					L	T	P	
1	1	SEA 810	Fundamentals & Applications of Renewable Energy	3	1	2	3	68
		SEA 811	Research Methods & Scientific Writing	3	2	2	0	55
		SEA 812	Energy Markets, Policy & Regulation	3	2	2	0	55
		SEA 813	Solar Energy Technologies	4	2	2	3	94
		SEA 814	Energy Project Management & Finance	3	2	2	0	55
		SEA 815	Energy Entrepreneurship & Business Models	3	2	2	0	55
1	2	SEA 821	Analysis of Decentralized Energy Systems	3	1	2	3	68
		SEA 822	Community Engagement	3	2	2	0	55
			Elective I	3	2	2	0	55
			Elective II	3	1	2	3	68
			Elective III	3	1	2	3	68
2	3,4	SEA 899	Research	17				900
			Total	**51**				**1596**

2. Masters in Electrical Engineering (Instrumentation)

Duration (in semesters): **6 semesters**

Study credits (per semester): **18**

Entry Requirements

To be eligible for admission into the degree programme, an applicant should hold a Bachelor's degree in any of the following fields: Electrical Engineering, Power Systems, Control Systems & Electronics, and Telecommunications.

Objectives:

The purpose of the Master of Science Programme in Electrical Engineering is to develop advanced problem-solving skills and to equip the learner with a high level of scholarship, research, and development capacity to provide sustainable solutions to electrical engineering challenges for the betterment of society. The programme aims to produce highly skilled engineers capable of advanced analysis, innovative design, independent research, and leadership in addressing complex electrical and electronic engineering problems.

Structure and content:

The Master of Science Programme in Electrical Engineering is structured to provide advanced theoretical knowledge, practical skills, and research competence in specialised areas of electrical engineering. The programme comprising coursework and research components spans two academic years distributed over four semesters of full-time attendance or a maximum period of four years of part-time attendance from the date of registration.

To graduate, a student must successfully complete at least 54 units, consisting of 30 units of coursework and 24 units of research work distributed across the four semesters. The coursework component includes 33 units of programme common courses, 12 units of specialisation core courses, and 9 units of elective courses. This structure ensures a strong foundational base while allowing flexibility for focused academic and professional development.

The programme offers two areas of specialisation: Electrical Power Systems and Telecommunications. Programme common courses provide advanced grounding in areas such as engineering mathematics, research methods, and professional practice. Specialisation core courses enable students to develop in-depth expertise in their chosen field, while elective courses allow further customisation based on individual interests and emerging industry trends.

Laboratory work, simulations, and practical assignments are integrated into the coursework to reinforce theoretical understanding and develop hands-on competence using modern engineering tools and software. The curriculum emphasises system modelling, analysis, design, and optimisation in addressing complex engineering problems.

The programme may also include seminars, workshops, and industry linkages to expose students to current developments and real-world engineering applications. Emphasis is placed on teamwork, communication, and interdisciplinary collaboration. The structure and content of the programme are designed to produce graduates with advanced technical expertise, strong research capability, and the professional skills required for leadership roles in industry, academia, and innovation-driven sectors.

Learning outcomes:

By the end of the programme the learner is expected to:

a) Identify engineering problems and formulate solutions by applying engineering principles.
b) Develop prototypes for electrical engineering systems.
c) Evaluate the impacts of engineering solutions on public safety, environmental, and economic factors.
d) Provide innovative leadership and professionalism in solving electrical engineering challenges.

List of Courses:

The detailed distribution of the course work and research is shown in the tables below:

ELECTRICAL POWER SYSTEMS OPTION					
First Year Courses					
YR	**SEM**	**CODE**	**TITLE**	**UNITS**	**HOURS**
1	I	ECE 837	Electrical Power Systems Operation and Control	3	**90**
		ECE 857	Distributed Energy Generation	3	**90**
		SEA 815	Energy Entrepreneurship and Business Models	3	**90**
		ECE 817	Electrical Power Quality and Mitigation	3	**90**
		PRD 810	Numerical Analysis & Computation	3	**90**
		SEA 811	Research Techniques and Scientific Writing	3	**90**
1	II	ECE 827	Smart-Grid Systems	3	**90**
		ECE 828	Optimisation Techniques	3	**90**

		ECE 889	Research Proposal	6	**180**
			ELECTIVE 1	3	**90**
			ELECTIVE 2	3	**90**
			ELECTIVE 3	3	**90**
2	III & IV	ECE 899	Research Thesis	15	-
Total				**54**	-

TELECOMMUNICATIONS OPTION					
First Year Courses					
YR	**SEM**	**CODE**	**TITLE**	**UNITS**	**HOURS**
1	I	ECE 812	Modern Digital Communications Techniques	3	**90**
		ECE 832	Telecommunication Policy and Regulations	3	**90**
		ECE 814	Microwave Engineering	3	**90**
		SEA 815	Energy Entrepreneurship and Business Models	3	**90**
		PRD 810	Numerical Analysis & Computation	3	**90**
		SEA 811	Research Methods and Scientific Writing	3	**90**
1	II	ECE 822	Advanced Wireless Communications	3	**90**
		ECE 828	Optimisation Techniques	3	**90**
		ECE 899	Research Proposal	6	**180**
			ELECTIVE 1	3	**90**
			ELECTIVE 2	3	**90**
			ELECTIVE 3	3	**90**
2	III & IV	ECE 899	Research Thesis	15	-
Total				**54**	

3. PhD in Energy Studies

Duration (in semesters): **36 Months (9 Semesters)**

Study credits (per semester):

Entry Requirements

To be eligible for admission into this degree programme, an applicant should hold any of the following:

- A master degree in Energy Studies, Engineering or any energy related discipline from a recognized University by the Commission of University Education.
- An applicant shall normally have a Bachelor degree (At least Second-Class Honors, Upper Division)

Objectives:

The overall objective of this programme is to produce graduates able to perform independent and original academic research in energy, environment and climate studies. Specifically, the programme seeks to facilitate learning of: Advanced and innovative research methods relevant to the energy sector; Energy policy, regulations and ethical issues in the energy industry; Energy resources, technologies and systems and Sustainable energy resource planning and management.

Structure and content:

The programme consists of a PhD by research which focuses on understanding of climate and land management change impacts on the natural and socio-economic environment well as evaluating and monitoring the extent of land degradation and deforestation using process-based ecosystem modelling, GIS and Remote sensing. Students are encouraged to take up topics relevant to the society and at the frontier of knowledge such as planetary atmospheric science. The research topics are defended and accepted through a series of evaluation and feedbacks. Student performance is assessed through progress made in her/his PhD research supervisor(s) based on progress report and presentation. Two external examiners and one internal examiner need to evaluate the PhD dissertation. The PhD work must result in at least two publications in reputable peer reviewed international journal before submission for PhD defence.

Learning outcomes:

At the end of the programme the student must be able to develop and demonstrate knowledge, skills and attributes in the areas of specialization. The graduates of this programme should be able to: Develop independent and innovative research towards providing knowledge-based solutions for the challenges in the energy sector; Formulate appropriate policies, regulations and strategies to support the energy sector; Plan, implement and manage energy projects and finally Design, install and optimize clean energy systems, or adapt existing ones, to support energy accessibility.

List of Courses:

Year	Semester	Code	Title	Units	Hrs
1	1	ENS 901	Research Seminar I	6	90
		ENS 903	Advanced Research Methods & Scientific Writing	3	45
		ENS 904	Energy Planning & Management	3	45
		ENS 905	Energy Projects Management	3	45
1	2	ENS 902	Research Seminar II	6	45
		ENS 906	Energy Systems Modelling & Optimization	3	45
			Elective I	3	45
			Elective II	3	45
2	3,4	ENS 999	Research	15	225
3	5,6	ENS 999	Research/Thesis	15	225
			Total	**60**	**855**

Elective I and II are chosen from the following list or other equivalently weighted courses approved by university Senate.

Code	Title	Units	Hrs
ENS 911E	Computational Fluid Dynamics	3	45
ENS 912E	Advanced Instrumentation for Energy Systems	3	45
ENS 913E	Power Plant Pollution Control	3	45
ENS 914E	Advanced Computational Techniques	3	45

Annex 4 - Academic Programmes hosted at the University of Rwanda

For admissions enquiries: contact Dr. Emmanuel Ufiteyeze (eufiteyezu@ur.ac.rw)

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1. Masters in Renewable Energy

Duration (in semesters):
4

Study credits (per semester):
60

Entry Requirements:

Objectives:
The programme aims to train highly skilled professionals in the design, analysis, and implementation of renewable energy systems. It equips students with the technical and analytical competencies required to address energy challenges through sustainable solutions. Graduates will be capable of evaluating renewable energy technologies such as solar, wind, hydro, and biomass, and applying innovative approaches to energy planning, policy, and system optimization.

Structure and content:
The programme comprises taught modules in the first two semesters (120 credits) and a supervised research dissertation (80 credits) in the third and fourth semesters. Core topics include power and energy systems, energy systems modelling, energy management, advanced power electronics, thermal and bioenergy, hydropower, wind and solar energy, and minigrid planning. The curriculum balances theoretical foundations with hands-on laboratory work and industry-relevant case studies. Students complete a substantial dissertation that demonstrates independent research and problem-solving in renewable energy

Learning outcomes:

Upon completion, graduates will be able to:

- Critically analyze and design renewable energy conversion systems.
- Model, simulate, and optimize energy systems using professional software.
- Conduct technical and economic assessments of off-grid, mini-grid, and grid-connected projects.
- Manage energy efficiency and environmental impact assessments.
- Plan and implement renewable energy solutions for local communities.

List of Courses:

Course Code	Course Title	Credits	Semester
ENE 6161	Numerical Analysis and Matrix Theory	10	1
ENE 6162	Power and Energy Systems	10	1
ENE 6163	Energy Systems Modelling and Optimization	15	1
ENE 6164	Research Methodology	10	1
ENE 6165	Microeconomics of the Energy Sector	10	1
ENE 6261	Advanced Power Electronics	10	2
ENE 6262	Corporate Finance and Business Communication	10	2
REE 6261	Thermal Energy and Bioenergy	15	2
REE 6262	Fluid Dynamics and Hydropower	15	2
REE 6263	Wind and Solar Energy	15	2
REE 6361	Renewable Energy Integration	10	3
REE 6362	Power Systems Dynamics	15	3
ENE 6361	Smart Grid Systems	15	3
REE 6461	Dissertation	80	3 & 4

2. Masters in Energy Economics

Duration (in semesters):
4

Study credits :
60

Entry Requirements:

Objectives:
The objective of this programme is to produce graduates with advanced skills in microeconomic and macroeconomic analysis, econometrics, and financial principles applied to the energy sector. Graduates will be equipped to analyze energy markets, design policy and regulatory frameworks, evaluate energy investments, and manage risks in both conventional and renewable energy contexts.

Structure and content:
The programme consists of taught modules in semesters 1 and 2 (120 credits) plus a research dissertation (80 credits) in semesters 3 and 4. Core areas include microeconomics and macroeconomics of energy, power and energy systems, research methodology, energy finance, micro econometrics, macro econometrics, energy economics, energy market policy and regulation, and risk management. Emphasis is placed on quantitative methods and applied economic modelling for energy decision-making.

Learning outcomes:

Upon completion, graduates will be able to:

- Apply microeconomic and macroeconomic theory to energy sector issues.
- Carry out technical and economic assessments of power generation and transmission.
- Use econometric methods to analyze energy demand, supply, and pricing.
- Develop energy policies and regulatory recommendations.
- Evaluate financial risks and investment opportunities in energy projects.

List of Courses:

Course Code	Course Title	Credits	Semester
EEC 6161	Power and Energy Systems	15	1
ENE 6165	Microeconomics of the Energy Sector	15	1
EEC 6162	Energy Economics I	20	1
EEC 6163	Econometrics I	15	1
ENE 6164	Research Methodology	15	1
ENE 6262	Corporate Finance and Business Communication	15	2
EEC 6261	Risk Management in the Energy Sector	15	2
EEC 6262	Energy Economics II	20	2
EEC 6263	Advanced Econometrics	15	2
EEC 6264	Macroeconomics	15	2
EEC 6461	Dissertation	80	3 & 4

3. Masters in Electrical Power Systems

Duration (in semesters):
6

Study credits:
60

Entry Requirements:

Objectives:
The objective of this programme is to produce graduates with advanced knowledge and practical skills in electrical power systems engineering. Graduates will be able to analyze, operate, protect, and control modern power systems, integrate renewable energy sources, and apply smart grid technologies. The programme emphasizes both conventional and emerging power system challenges.

Structure and content:
The programme includes taught modules in semesters 1 and 2 (120 credits) and a research dissertation (80 credits) in semesters 3 and 4. Core topics cover power and energy systems, energy systems modelling, energy management, advanced power electronics, digital signal processing, advanced network analysis, power system operation and control, power system protection, FACTS and HVDC, electric power quality, and smart grid systems. Laboratory work and simulation tools (e.g., MATLAB, ETAP, DIgSILENT) are integral.

Learning outcomes:

Upon completion, graduates will be able to:

- Analyze and design complex electrical power networks.
- Implement protection schemes and control strategies for stable operation.
- Evaluate power quality and apply mitigation techniques.
- Integrate renewable energy and distributed generation into the grid.
- Use advanced simulation software for power system studies.

List of Courses:

Course Code	Course Title	Credits	Semester
ENE 6161	Numerical Analysis and Matrix Theory	10	1
ENE 6162	Fundamentals of Power and Energy Systems	10	1

ENE 6163	Energy Systems Modelling and Optimization	15	1
ENE 6164	Corporate Finance and Business Communication	10	1
ENE 6165	Microeconomics of the Energy Sector	10	1
ENE 6261	Advanced Power Electronics	10	2
ENE 6262	Research Methodology	10	2
PSE 6261	Advanced Electrical Network Analysis	15	2
PSE 6262	Power Systems Operation, Control and Protection	15	2
PSE 6263	FACTS and HVDC Power Systems	15	2
PSE 6361	Signal Processing for Power Systems	10	3
PSE 6362	Electrical Power Quality	15	3
ENE 6361	Smart Grid Systems	15	3
PSE 6461	Dissertation	80	3 & 4

4. PhD in Renewable Energy

Duration (in semesters):
6

Study credits (per semester):
60

Entry Requirements:

Objectives:
The objective of this programme is to produce doctoral graduates capable of independent, original academic research in renewable energy. Candidates will advance the frontier of knowledge in areas such as smart micro-grids, energy storage systems, battery management, bioenergy, solar and wind technologies, and energy for socio-economic development. Graduates will be able to publish their findings in peer-reviewed international journals and lead research in academia or industry.

Structure and content:
This is a research-based PhD (by thesis) with no taught credits, though candidates may be required to complete non-credited graduate modules (e.g., Research Methodology) as recommended by their Doctoral Committee. The programme follows a structured progression: initial proposal presentation, comprehensive examination for doctoral candidature (by 4th semester), research and publication of at least three papers (two in SCI/Scopus journals, one in conference proceedings), synopsis presentation, thesis submission, and final viva voce defence. Students receive supervision from a Supervisory Team and are monitored through semester progress reports.

Learning outcomes:
Upon completion, graduates will be able to:

- Critically examine literature and identify research gaps in renewable energy.
- Develop novel theories, models, or technologies for renewable energy systems.
- Design and conduct experiments or simulations to validate original contributions.
- Publish and disseminate research findings at an international level.
- Address ethical, social, and environmental dimensions of energy research.

List of Courses:
PhD By Research
(No formal taught courses; may include research seminars and methodology training)

5. PhD in Energy Economics

Duration (in semesters):
6

Study credits:
60

Entry Requirements:

Objectives:
The objective of this programme is to produce doctoral graduates capable of independent, original research in energy economics. Candidates will develop advanced expertise in economic evaluation of renewable energy technologies, energy trade policy, utilities management, energy pricing, and applied microeconomic models for policy and regulatory decision-making. Graduates will contribute to transforming Africa's energy sector through cutting-edge research.

Structure and content:
This research-based PhD requires candidates to undertake a supervised research project leading to a thesis of original contribution. The programme follows a structured pathway: initial proposal presentation, completion of any required non-credited graduate modules, comprehensive examination for doctoral candidature (by 4th semester), publication of at least three papers (two in SCI/Scopus journals, one in conference proceedings), synopsis presentation, thesis submission, and final defense. Progress is monitored through semester reports and supervisory team meetings.

Learning outcomes:

Upon completion, graduates will be able to:

- Critically assess literature and identify research problems in energy economics.
- Develop and test hypotheses using advanced econometric and economic modeling techniques.
- Carry out technical and economic assessments of power systems and renewable technologies.
- Apply microeconomic models to assist policy, regulatory, and investment decisions.
- Publish and communicate research findings to academic and policy audiences.

List of Courses:
PhD By Research
(Research-based; no formal coursework)

6. PhD in Electrical Power Systems

Duration (in semesters):
6

Study credits:
60

Entry Requirements:

Objectives:
The objective of this programme is to produce doctoral graduates capable of independent, original research in electrical power systems. Candidates will advance knowledge in power system dynamics, power electronics for renewable energy, control systems, smart and micro-grid technologies, HVDC/FACTS, and grid integration. Graduates will lead research and development in academia, utilities, and energy industries.

Structure and content:
This research-based PhD follows a structured progression: initial proposal presentation, required non-credited graduate modules (if any), comprehensive examination for doctoral candidature (by 4th semester), publication of at least three papers (two in SCI/Scopus journals, one in conference proceedings), synopsis presentation, thesis submission, and final viva voce defense. Students work under a Supervisory Team and submit semester progress reports. Access to state-of-the-art power systems laboratories is provided.

Learning outcomes:

Upon completion, graduates will be able to:

- Critically evaluate literature and identify original research problems in power systems.
- Develop novel mathematical methods, models, or control strategies for power system stability and operation.
- Design and validate solutions for smart grids, renewable integration, or HVDC/FACTS.
- Publish research in high-impact international journals.
- Lead interdisciplinary research projects and contribute to energy policy and innovation.

List of Courses:
PhD By Research

Annex 5 - Academic Programmes hosted at Lupane State University

For enquiries contact: Ms. Precious Ngwenya (pngwenya@lsu.ac.zw)

Table of Contents

1. Master of Science in Climate Change and Sustainable Development

Duration

Full-time Study: The minimum duration is **4 semesters** (2 years).

Study Credits per semester (90 credits)

Total Credits: 270 Credits.

Entry Requirements

Objectives

The programme is aimed at developing and nurturing professionals able to proactively participate at both local and global forums and contribute to addressing the impacts of climate change and enhancing the sustainable use and management of ecosystems.

The objectives of the programme are:

- To impart an advanced theoretical and practical understanding of climate change and sustainable development issues affecting developing countries in the global context.
- To equip students with appropriate tools and techniques for interpreting the impacts of climate change, and evaluating and implementing measures that reduce vulnerability of ecosystems without compromising on social justice and development needs of communities
- The nurture students with a multidisciplinary approach hinged towards formulating local based innovative solutions for energy access to improve quality of life, local economies and climate resilience of Off-grid communities.
- To produce adaptable graduates ready to be effective policy makers, policy researchers and analysts in this fast evolving and transforming globalising world.

Structure and content

Learning Outcomes

- Demonstrate an understanding of the major concepts, questions and theoretical approaches in climate change and sustainable development.
- Carry out applied interdisciplinary research using appropriate theories and methods in order to comprehend the dynamics of climate change and sustainable development at local and global scales.
- Demonstrate competence in field identification of indicators of the impact of climate change on development and the impact of development interventions on climate and ecosystems.
- Utilise resources and skills to build adaptive capacities of communities to climate change in ways that are sensitive to community livelihoods, national economic development and the sustainability of ecosystem services.
- Apply knowledge gained and skills acquired to formulate, implement, and monitor and evaluate community development projects, programmes and policies.
- Communicate developmental findings and arguments using appropriate concepts and idioms of the discipline for local decision-makers.

List of Courses

PART I
SEMESTER I

Course Code	Course Title	Notional Hours	Credits
HSCS 6109	Key Concepts of Climate Change and Sustainable Development	180	18
HSCS 6110	Climate Change and Ecosystem Services	180	18
HSCS 6111	Mitigation and Adaptation in Theory and Practice	180	18
HSCS 6112	Agriculture, Food Security and Climate Change	180	18
HSCS 6114	Local Solutions for Energy Access	180	18
	Semester Total	**900**	**90**
	Cumulative Total	**900**	**90**

PART I
SEMESTER II

Course Code	Course Title	Notional Hours	Credits
HSSC 6213	Advanced Research Methods and Statistics	180	18
HSCS 6215	Climate Change and Social Justice	180	18
HSCS 6216	Climate Disaster Resilience, Mitigation and Management	180	18
HSCS 6217	Climate Change and Urban Development	180	18
HSCS6219	Solar Appliances for Off-grid Communities	180	18
	Semester Total	**900**	**90**
	Cumulative Total	**1800**	**180**

PART II

Course Code	Course Title	Notional Hours	Credits
HSCS 6000	Dissertation	900	90
	Semester Total	**900**	**90**
	Cumulative Total	**2700**	**270**

2. MPhil in Environmental Geography and Sustainability

Duration

Full-time Study: The minimum duration is **4 semesters** (2 years).

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Study credits (per semester)

Total Credits: 240 Credits.

In the ZIMCHE system, one credit is typically equivalent to 10 notional study hours. Therefore, the MPhil represents approximately **2,400 hours** of research, data analysis, and thesis writing.

Total Credits per Semester

The credit load is distributed evenly across the minimum duration of the program (4 semesters) to reflect continuous research progress

Semester	Activity Focus	Credits
Semester 1	Review and Proposal Development	60
Semester 2	Pilot Study and Data Acquisition	60
Semester 3	Core Fieldwork and Geospatial Analysis	60
Semester 4	Thesis Synthesis and Final Submission	60
Total		**240**

NB Important Credit Notes

Research-Only Nature: *Unlike taught Master's programs (MSc), the MPhil at LSU does not typically have "credits per module." Instead, students must meet* ***Research Milestones*** *(e.g., successful proposal defence) to "earn" their progress toward the final 240 credits.*

Progression: *Students must demonstrate satisfactory progress at the end of each semester to be allowed to register for the next 60-credit block.*

Objectives:

- The primary objective of this research-based programme is to facilitate the development of advanced scholarly skills through independent, original inquiry into environmental geography and sustainability.
- It aims to empower candidates to critically examine the intricate relationship between human systems and the natural environment.

- The programme is designed to cultivate technical excellence in geospatial technologies and remote sensing, applied specifically to monitoring environmental change within a research context.
- Furthermore, it seeks to produce researchers capable of designing and executing robust studies that address urgent sustainability challenges in Southern Africa and beyond.
- By the end of the programme, candidates will be prepared to contribute to evidence-based policy and resource management through rigorous scientific methodology and interdisciplinary problem-solving.

Structure and content:

The MPhil in Environmental Geography and Sustainability is a 360-credit research degree structured over six semesters. This programme is entirely research-oriented, focusing on independent study under the guidance of an academic supervisor. The first academic year (Semesters 1 and 2) is dedicated to intensive research preparation and the foundational development of the thesis. During this phase, the candidate conducts an exhaustive literature review, refines the research problem and develops a comprehensive methodology. This period culminates in the formal defense of a research proposal. Students will engage in independent study and regular supervisory consultations to master the theoretical and technical requirements of their specific research field.

Semesters 3 through 4 constitute the intensive research and dissertation phase. Candidates focus on primary data collection, which may include fieldwork or secondary data acquisition, followed by advanced spatial analysis and modelling. The content of this phase is highly personalised and dictated by the candidate's specific research area, such as human-wildlife conflict, climate change adaptation or sustainable land management. The programme concludes with the submission of a substantial thesis that demonstrates technical competence and a significant contribution to geographical knowledge. Throughout the duration, students are expected to participate in departmental seminars and research workshops to receive peer feedback and professional development.

Learning outcomes:

Upon successful completion of the programme, graduates will demonstrate an authoritative understanding of contemporary paradigms in environmental geography and sustainability through their independent research. They will possess the advanced technical proficiency required to apply Geographic Information Systems (GIS) and remote sensing techniques to complex ecological and social datasets. A core outcome is the demonstrated capacity to design and execute a substantial, independent research project that meets international ethical and academic standards. Graduates will be able to critically evaluate environmental policies and propose sustainable management strategies based on their empirical findings. Additionally, they will have developed advanced communication skills, enabling them to present complex research outcomes to both specialist and non-specialist audiences.

Ultimately, the programme will produce scholars who are equipped for leadership roles in academia, government and international environmental organisations.

List of Courses:

Course Code	Course Title	Credits	Semester
MEGS 801	Research Thesis: Literature Review and Conceptualisation	60	1
MEGS 802	Research Thesis: Methodology Design and Proposal Defense	60	2
MEGS 803	Research Thesis: Data Collection and Fieldwork Phase I	60	3
MEGS 804	Research Thesis: Data Collection and Fieldwork Phase II	60	4
MEGS 805	Research Thesis: Data Synthesis and Spatial Modelling	60	5
MEGS 806	Research Thesis: Thesis Finalisation and Viva Voce	60	6

3. MPhil in Geo-informatics and Remote Sensing

Duration

Full-time Study: The minimum duration is **4 semesters** (2 years).

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Study credits (per semester)

Total Credits: 240 Credits.

In the ZIMCHE system, one credit is typically equivalent to 10 notional study hours. Therefore, the MPhil represents approximately **2,400 hours** of research, data analysis, and thesis writing.

Total Credits per Semester

The credit load is distributed evenly across the minimum duration of the program (4 semesters) to reflect continuous research progress

Semester	Activity Focus	Credits
Semester 1	Review and Proposal Development	60
Semester 2	Pilot Study and Data Acquisition	60
Semester 3	Core Fieldwork and Geospatial Analysis	60
Semester 4	Thesis Synthesis and Final Submission	60
Total		**240**

NB Important Credit Notes

Research-Only Nature: *Unlike taught Master's programs (MSc), the MPhil at LSU does not typically have "credits per module." Instead, students must meet* ***Research Milestones*** *(e.g., successful proposal defence) to "earn" their progress toward the final 240 credits.*

Progression: *Students must demonstrate satisfactory progress at the end of each semester to be allowed to register for the next 60-credit block.*

Entry Requirements

Objectives

The primary objective of the **Master of Philosophy (MPhil) in Geo-informatics and Remote Sensing** at **Lupane State University (LSU)** is to produce research competent specialists capable of generating original knowledge and innovative geospatial solutions which solve community problems.

Key objectives including: -

- Advanced Research Mastery**:** Training students to design and execute independent, high-level scientific investigations to solve complex spatial problems within the Zimbabwean landscape.
- Technological Advancement**:** Equipping graduates with expert proficiency in integrating Remote Sensing (RS) and Geographic Information Science (GIS) with emerging technologies such as Artificial Intelligence and Unmanned Aerial Vehicle systems.
- Interdisciplinary Application**:** Applying geospatial analytical frameworks to critical national sectors, specifically focused on precision agriculture, sustainable natural resource management, and climate change adaptation in semi-arid regions.
- Professional Leadership**:** Developing academic and technical leaders who can influence national spatial data infrastructure and environmental policies through evidence-based research. This program bridges theoretical geospatial science with practical, research-driven outcomes to foster regional and national development

Structure and content:

The Master of Philosophy (MPhil) in Geo-informatics and Remote Sensing at Lupane State University (LSU) is a research-driven postgraduate degree. Unlike a taught Master of Science (MSc), the MPhil structure is designed to transition a student from a practitioner to a specialized researcher, focusing on original inquiry and the application of geospatial technologies to real-world challenges in Zimbabwe.

The program is structured around **four key research phases** spread across a minimum of four semesters. There are no traditional classroom lectures; instead, progress is marked by supervised milestones.

- Research Candidacy & Proposal (Semester 1): The student works closely with an assigned supervisor to identify a significant research gap. This phase involves an

exhaustive literature review and the development of a robust methodology. It culminates in a formal Proposal Defence before the Departmental Board.

- Technical Design & Pilot Study (Semester 2): During this phase, the student refines their spatial models and data collection instruments. This includes identifying specific satellite sensor requirements (e.g., Sentinel, Landsat, or LiDAR), establishing geodatabase structures, and testing field equipment such as GNSS receivers or UAVs.

- Implementation & Analysis (Semester 3): This is the core execution phase. The student engages in intensive data acquisition, often involving fieldwork in semi-arid regions and performs advanced geospatial processing. Activities include digital image processing, spatial statistical modelling, and the validation of research hypotheses.

- Synthesis & Examination (Semester 4): The final phase focuses on writing the MPhil thesis (typically 30,000 to 50,000 words). The student must present their findings at a university seminar before submitting the thesis for evaluation by internal and external examiners, followed by a **Viva Voce** (oral defence).

While the specific content is determined by the student's chosen research topic, the intellectual framework covers: -

- ✓ Advanced Geospatial Modelling: In-depth application of spatial algorithms, including machine learning for land-cover classification and spatiotemporal analysis of environmental changes.
- ✓ Sensor Physics & Signal Processing: Researching the application of multi-spectral, thermal, and microwave remote sensing to monitor vegetation health, soil moisture, or water resources.
- ✓ Applied GIS Engineering: Content focused on the design of geodatabases and the automation of spatial workflows using programming languages like **Python** or **R**.
- ✓ Thematic Specializations: Research content typically aligns with LSU's niche in Agricultural and Natural Sciences, covering precision agriculture, rangeland management, wildlife habitat mapping, and rural development planning.

Learning outcomes:

Upon successful completion of the Master of Philosophy (MPhil) in Geo-informatics and Remote Sensing at Lupane State University, graduates will have transitioned from technical practitioners to independent researchers capable of advancing the geospatial field. The learning outcomes are designed to ensure both high-level technical mastery and academic rigour, specifically, graduates will be able to: -

- Conduct Independent Research: Demonstrate the ability to identify complex spatial research gaps and execute a systematic investigation using advanced scientific methodologies.
- Master Advanced Geospatial Tools: Exhibit expert-level proficiency in using industry-standard software (e.g., ArcGIS Pro, QGIS, ENVI) and cloud-based platforms like Google Earth Engine for large-scale data processing.
- Integrate Multi-Source Data: Synthesize diverse datasets—including multispectral satellite imagery, UAV-derived data, and GNSS field observations—to create predictive models for environmental and agricultural challenges.
- Communicate Scientific Findings: Defend complex technical arguments through a high-quality written thesis and oral presentations, meeting the standards for publication in peer-reviewed international journals.
- Apply Ethical Standards: Implement best practices in data ethics, including the responsible handling of sensitive spatial information and adherence to national data infrastructures.
- Solve Regional Problems: Provide innovative, spatial-based solutions specifically tailored to Zimbabwe's semi-arid regions, focusing on climate resilience and natural resource sustainability.

List of Courses (max 200 words):

For the **Master of Philosophy (MPhil) in Geo-informatics and Remote Sensing** at **Lupane State University (LSU)**, the curriculum is fundamentally research-based. Because it is a "Research by Thesis" degree, it does not follow a traditional "course-by-course" modular structure with separate codes for every semester. Instead, it is identified by a single overarching program code, and credits are assigned to critical research milestones

Course Code	Course Title	Credits	Semester
RES701	Research Proposal and Methodology	60	1
RES702	Literature Review and Data Design	60	2
RES703	Fieldwork and Advanced Analysis	60	3
RES704	Thesis Writing and Final Defending	60	4
Total		**240**	

4. DPhil in Geo-informatics and Remote Sensing

Duration (in semesters)

Minimum 3 Years: 6 semesters full time candidates

Study credits (per semester)

Standard Full-Time Load

For a student completing the degree in the standard **3-year (6-semester)** window:

Credits per Semester: 60 credits.

Annual Total: 120 credits (equivalent to 1,200 notional study hours).

Breakdown by Duration

The per-semester load varies if the candidate extends their research period:

3-Year Track (6 Semesters): 60 credits/semester (Total: 360 credits).

Entry Requirements

Objectives

The DPhil in Geo-informatics and Remote Sensing at Lupane State University (LSU) aims to produce high-level researchers capable of advancing geospatial science to solve complex national and global challenges.

The key programme objectives:

- Advanced Research Innovation**:** To foster independent, original research that contributes new theoretical or methodological insights to the fields of GIS and Remote Sensing.
- Problem-Solving Applications**:** To apply geospatial technologies in critical sectors such as agriculture, natural resource management, and disaster risk reduction within the Zimbabwean context.
- Technical Mastery**:** To equip candidates with expert skills in spatial data analytics, geo-predictive modelling, and the integration of emerging technologies like Artificial Intelligence and big data.
- Policy and Sustainability: To provide evidence-based spatial solutions that inform environmental policy and promote sustainable development goals.

- Professional Leadership: To develop scholars who can lead academic and industrial geospatial projects while upholding high ethical and scientific standards.

Structure and content:

The program is divided into three distinct phases spread across **6 to 10 semesters** for full-time candidates:

Structure

The Preliminary/Proposal Phase (Semesters 1–2).

During this first year, the student is expected to conduct an exhaustive literature review and refine their research problem. The primary output is a comprehensive research proposal. The student works closely with two supervisors to define the methodology, ensuring it aligns with the university's research ethics. Candidates may be required to take non-credit or foundational modules in Advanced Research Methods or Spatial Statistics if their background requires it.

The Execution/Fieldwork Phase (Semesters 3–4).

This is the core of the degree. Content during this phase is practical and technical. In the context of Geoinformatics, this involves intensive data acquisition including satellite imagery procurement, UAV (drone) surveys, or GNSS field mapping. Students focus on spatial data modelling and analysis, using advanced software and programming (such as Python or R for GIS) to test their hypotheses. Periodic progress reports and departmental seminars are mandatory milestones to ensure the research remains on track

.

The Writing and Defence Phase (Semesters 5–6).

The final stage focuses on the synthesis of findings into a **Doctoral Thesis**. Candidates are generally required to publish at least one or two papers in accredited, peer-reviewed journals before submission. The program culminates in an oral examination (**Viva Voce**), where the candidate defends their contribution to the field before a panel of internal and external examiners.

Programme Content

While the specific content is driven by the student's chosen research topic, the curriculum generally covers the following thematic areas:-

Advanced Remote Sensing: Hyperspectral imaging, LiDAR data processing, and radar (SAR) applications.

Geospatial Intelligence: The use of Artificial Intelligence (AI) and Machine Learning in land-use classification and environmental monitoring.

Big Data Analytics: Handling large-scale spatial datasets for climate change modelling or urban planning.

Applied Geoinformatics: Solutions tailored to Zimbabwe's needs, such as precision agriculture, water resource management, and mineral exploration.

Learning outcomes

Upon completing the DPhil in Geoinformatics and Remote Sensing at Lupane State University, graduates will have attained the highest level of expertise in geospatial sciences. The learning outcomes are designed to bridge the gap between complex spatial theory and practical, socio-economic application.

- **Original Contribution to Knowledge:** Graduates will demonstrate the ability to conceptualize, design, and implement an original research project that expands the boundaries of geo-informatics, specifically tailored to African environmental and developmental contexts.
- **Advanced Technical Proficiency:** Graduates will master high-level geospatial tools, including advanced satellite image processing, geo-algorithms, and the integration of AI with remote sensing data for predictive modelling.
- **Critical Analytical Skills:** The ability to critically evaluate existing geospatial theories and synthesize complex data from multiple sources to solve multi-dimensional spatial problems.
- **Professional Communication:** Graduates will be proficient in communicating complex scientific findings to both technical audiences through peer-reviewed publications and to policymakers through actionable spatial reports.
- **Ethical and Strategic Leadership:** A deep understanding of the ethical implications of spatial data (privacy, accuracy, and security) and the leadership skills necessary to manage large-scale GIS projects in government or private sectors.

List of Courses:

The DPhil in Geoinformatics and Remote Sensing is a research-only degree. Unlike undergraduate or coursework-based Master's programs, it does not consist of a series of discrete modules with individual course codes for each semester. Instead, the "course" is the Doctoral Thesis, which spans the entire duration of the program.

Under the Zimbabwe Credit Accumulation and Transfer System (ZIMCATS), the curriculum is structured as a single continuous research entity typically yielding 360 to 480 credits.

Total Credits: A standard 3-year program equals **360 credits** (120 per year), where each credit represents 10 notional study hours.

Course Code	Course Title	Credits	Semester
DGRS901	Research Proposal & Literature Review	60-120	1-2
DGRS902	Fieldwork, Data Collection & Analysis	180-240	3-4
DGR903	Thesis Writing & Peer-Review	60-120	5-6
DGRS904	Viva Voce (Oral Defence)	-	Final

5. DPhil in Environmental Geography and Sustainability

Duration (in semesters)

3 Years: 6 semesters

Study credits (per semester)

Standard Full-Time Load

For a student completing the degree in the standard **3-year (6-semester)** window:

Credits per Semester: 60 credits.

Annual Total: 120 credits (equivalent to 1,200 notional study hours).

Breakdown by Duration

The per-semester load varies if the candidate extends their research period:

3-Year Track (6 Semesters): 60 credits/semester (Total: 360 credits).

Objectives:

- The primary objective of the DPhil in Environmental Geography and Sustainability is to cultivate elite researchers capable of generating original scientific insights into the complex relationship between human societies and the biosphere.
- The programme aims to develop advanced expertise in the synthesis of geographical theory and sustainability science to address systemic environmental crises. It focuses on developing high-level proficiency in innovative spatial modelling and remote sensing and quantitative analytics through independent doctoral research.
- Candidates are expected to produce a significant body of independent research that contributes new theoretical frameworks or practical solutions to the field.
- Ultimately the programme seeks to prepare scholars for leadership roles in global academia and international policy-making and strategic environmental consultancy where they can drive evidence-based sustainability transitions.

Structure and content:

The DPhil is structured over six semesters with a total credit weighting of 360 units. The programme is divided into two distinct phases: the Research Formulation and Proposal Phase followed by the Advanced Research and Thesis Phase. During the first two semesters candidates engage in intensive independent research and doctoral seminars designed to refine their research philosophy and methodological rigour. This period focuses on the critical interrogation of contemporary geographical literature and the development of a sophisticated research proposal. Students will work under the guidance of a supervisor to master the technical and theoretical requirements of their specific research area. By the end

of the second semester students must successfully defend their proposal to proceed to the full research stage.

Semesters three through six are dedicated entirely to independent and original research under the guidance of a supervisory committee. This phase involves extensive data collection and advanced spatial analysis and the application of complex modelling techniques. The DPhil content must demonstrate a profound level of critical thought and a novel application of geographic tools. Candidates are encouraged to integrate multidisciplinary perspectives such as ecological economics and political ecology into their geographical analysis. The programme culminates in the production of a comprehensive thesis that is examined by both internal and external experts. Throughout the duration students are expected to participate in departmental colloquia and present their evolving findings at international conferences. This structure ensures that graduates are not only technical experts but also integrated members of the global scientific community.

Learning outcomes:

Upon completion of this DPhil graduates will be able to demonstrate an authoritative command of advanced environmental geography and sustainability theories. They will possess the capability to design and execute complex and multi-year research projects that adhere to the highest standards of academic integrity and scientific rigour. A key outcome is the ability to develop and apply innovative geospatial methodologies to solve significant environmental problems. Graduates will be proficient in synthesising diverse datasets to produce original findings that have the potential to influence national and international environmental policy. Furthermore they will exhibit the communication skills necessary to defend their research in a viva voce and publish their work in high-impact and peer-reviewed journals. Finally the programme produces scholars who can provide visionary leadership in the management of natural resources and the promotion of sustainable development.

List of Courses:

Course Code	Course Title	Credits	Semester
DEGS 901	Doctoral Seminar I: Research Philosophy and Theory	20	1
DEGS 902	Independent Research Study I: Advanced Spatial Analytics	20	1
DEGS 903	Doctoral Seminar II: Research Design and Methodology	20	1
DEGS 904	Independent Research Study II: Earth Observation	20	2
DEGS 905	Doctoral Seminar III: Sustainability Praxis	20	2
DEGS 906	Doctoral Seminar IV: Proposal Defense and Finalisation	20	2
DEGS 907	DPhil Research and Fieldwork Phase I	60	3
DEGS 908	DPhil Research and Data Synthesis Phase II	60	4
DEGS 909	DPhil Thesis Development and Publication	60	5
DEGS 910	DPhil Thesis Finalisation and Viva Voce	60	6

Annex 6 - Academic Programmes hosted at the University of Cape Coast

For enquiries: Contact: Dr. Mbir Bryant (ibryant@ucc.edu.gh)

Table of Contents

1. MPHIL/PhD in Environmental Science

Duration (in semesters):

4 / 6

Study credits:

It depends

Entry Requirements:

To qualify for the programme candidates must possess a good first degree, at least second class (lower division) in any of the sciences and applied sciences from a recognised university and must pass a selection interview where necessary.

Second degree holders who take the required courses will be exempted from the courses they pass. Candidates with minimum CGPA of 2.5 or better who are able to successfully defend their thesis proposal will progress to the thesis phase in Year Two for their MPhil/PhD programmes as the case may be. Those who are unable to progress to Year Two have the option to apply to step-down their degrees to obtain non-researched masters degree (M.Sc.) by course work if they meet the minimum requirements of a CGPA of 2.5.

Objectives:

The objectives of the programme are to:

i. Equip the student with requisite knowledge to manage the biosphere.
ii. Provide knowledge to the student to offer expert advice on environmental issues.
iii. Equip the student with skills to help formulate appropriate environmental policies.
iv. Enable the student develop an appreciation of the complexity of the environment in order to research into environmental problems and proffer sustainable solutions.

Structure and content:

The progression structure for the MPhil/PhD (Curriculum and Teaching) programme is as follows:

First degree holder up-grading to MPhil will be required to:

Successfully complete two semesters of course work.

i. Obtain a CGPA of 2.5 or better.

ii. Obtain not more than one grade C in the course work.
iii. Score B or better in research methodology.
iv. Present a 10–15-page research proposal of an acceptable standard.
v. Successfully defend the research proposal and be awarded B or better by the Department examining panel.

First degree holder up-grading to PhD will be required to:

Successfully complete two semesters of course work.

i. Obtain a CGPA of 3.5 or better in the course work.
ii. Obtain not more than one grade C in the course work.
iii. Score B or better in research methods.
iv. Present a 20–25-page research proposal of an acceptable standard.
v. Successfully defend the research proposal and be awarded B or better by the Department examining panel.

Non-research master's degree holder up-grading to MPhil will be required to:

i. Have obtained a CGPA of 2.5 or better in the Master of Science (M.Sc.) course work.
ii. Have obtained not more than one grade C in the Master of Science (M.Sc.) course work.
iii. Have obtained B or better in the Master of Science (M.Sc.) research methods.
iv. Take a course in academic writing and pass with B or better in the first semester.
v. Conduct directed reading on methodology related to the proposed area of research.
vi. Make one presentation on the readings in the first year.
vii. Present a 10-15page research proposal of an acceptable standard, and successfully defend the proposal with a score of B or better.
viii. Complete an MPhil thesis by the third semester of registering as Postgraduate Research Student (PRS).

Non-research master's degree holder up-grading to PhD will be required to:

Have obtained a CGPA of 3.5 or better in the Master of Science (M.Sc.) course work.

i. Have obtained not more than one C in the Master of Science (M.Sc.) course work.
ii. Have obtained B or better in the Master of Science (M.Sc.) research methods.
iii. Take a course in academic writing and pass with B or better.
iv. Conduct directed reading on methodology related to the proposed area of research.
v. Make one presentation on the readings in the first year.
vi. Present a 20-25 page research proposal of an acceptable standard and successfully defend the proposal with a score of B or better.

Researched master's degree holder up-grading to PhD will be required to:

i. Have obtained a CGPA of 3.0 or better in the master's course.
ii. Have obtained not more than one C in the master's course work.

iii. Have obtained B or better in the master's research methods.
iv. Conduct directed reading on methodology related to the proposed area of research.
v. Make one presentation on the readings in the first year.
vi. Present a 20-25 page research proposal of an acceptable standard.
vii. Successfully defend the proposal with a score of B or better.

Learning outcomes:

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List of Courses:

Year One

First Semester (All students except PhD candidates)

Course Code	Course Title	T	P	Credit
	Core Courses			
ENS 801	Conservation of Natural Resources	2	1	3
ENS 802	Environment and Climate Change	2	1	3
ENS 803	Environmental Law and Policy	2	1	3
	Elective Courses			
	Two elective courses	4	2	6
TOTAL		10	5	15

T = Theory, P = Practical; C = Credit

Second Semester

Course Code	Course Title	T	P	Credit
	Core Courses			
ENS 804	Environmental Monitoring and Analysis	2	1	3
ENS 805	Environmental Statistics	2	1	3
ENS 806	Research Methods	2	1	3
ENS 898o	Research Proposal Presentation	0	0	0
	Elective Courses	4	2	6
	Two electives' courses			
TOTAL		10	5	15

oAll students - *Options/Elective courses:

Option 1: Resource ecology and management

Elective courses

ENS 807: Oil, Gas and Environmental Risk Management
ENS 808: Land Use Planning and Biodiversity Conservation
ENS 809: Advanced Remote Sensing and GIS

ENS 810: Forest Ecology and Management

Option 2: Water resources and management

Elective courses

ENS 811: Principles of Hydrology
ENS 812: Environmental Toxicology
ENS 813: Waste Water Treatment Technology
ENS 814: Environmental Chemistry

Option 3: Waste management and environmental restoration

Elective courses

ENS 815: Waste Recycling and Waste to Energy Processes
ENS 816: Environmental Engineering and Public Health
ENS 817: Soil Science for the Environmental Scientist

Year Two

The second year courses are for those who qualify to continue with M.Phil/Ph.D

First Semester

Course code	Course title	Credits
ENS 807A	Directed Reading	0
ENS 879	Graduate seminar	0
ENS 899	Thesis	0
ENS 999	Thesis	0
Total		0

Second Semester

Course code	Course title	Credits
ENS 807A	Directed Reading	0
ESS 879	Graduate seminar	0
ENS 899*	Thesis	0
ENS 999*	Thesis	0
Total		0

*ENS 899 and ENS 999 are for MPhil and Ph.D students respectively.

Year Three

The third year courses are for those who qualify to continue with the Ph.D

First Semester

Course code	Course title	Credits
ENS 979	Graduate seminar	0
ENS 999	Thesis	0
Total		0

Second Semester

Course code	Course title	Credits
ENS 979	Graduate seminar	0
ENS 999	Thesis	0
Total		0

2. MPhil / PhD in Clean Energy and Environment (MSc)

Duration (in semesters):

4 / 6

Study credits (per semester):

varies

Entry Requirements:

To qualify for the programme, candidates must possess a good first degree, at least second class (lower division) in any of the sciences and applied sciences in relevant areas from a recognised university and must pass a selection interview where necessary.

Objectives:

The objectives of the programme are as follows:

1. To train globally-minded clean-energy workforce
2. To provide existing energy companies with new solutions generated through close industry—university collaborations
3. To educate and train professionals capable of working independently in the diverse and dynamic field of environmental protection.
4. Train students on the development of creative abilities and skills necessary to develop and apply all aspects of environmental protection.
5. To provide stimulating environment for professional and personal development of students and to apply teaching methods in an interesting and intellectually challenging way to improve analytical, critical and self-critical thinking when addressing the challenges of environmental protection.
6. To provide students with high-quality education for an effective realization of academic and professional lessons in the area of environmental science and engineering.

Structure and content:

There will be two semesters of course work. All courses are core to ensure that the total clean energy and environment perspective underpins the entire programme. Each course is 3 credit

hours. Students are expected to select the courses to meet the required credit load of fifteen (15) credit hours in the first and second semester, respectively. Learning outcomes:

List of Courses:

Year One

Level 800 First Semester

Course Code	Title Of Course	Credit
ENS 861	Energy and Environment	3
ENS 863	Environmental Protection I: Principles	3
ENS 865	Environmental Law and Enforcement	3
ENS 814	Environmental Chemistry	3
ENS 867	Clean Energy Technologies	3
ENS 806	Research Methods	3
ENS 869	Climate Change and Energy Engineering Challenges	3
TOTAL		21

Level 800 Second Semester

COURSE CODE	COURSE TITLE	CREDIT
ENS 860	Bio-fuels Technologies	3
ENS 862	Solar Thermal Energy Systems	3
ENS 864	Wind and Hydropower Energy Technologies	3
ENS 804	Environmental Monitoring and Analysis	3

ENS 866	Advanced Environmental Impact Assessment and Analysis	3
ENS 868	Environmental Quality Control	3
ENS 870	Environmental Protection II: Processes and Methods	3
TOTAL		21

Year Two

The second year courses are for those who qualify to continue with M.Phil

First Semester

Course code	Course title	Credits
ENS 807[A]	Directed Reading	3
ENS 879	Graduate seminar	3
ENS 899	Thesis	9
Total		**15**

Second Semester

Course code	Course title	Credits
ENS 807[A]	Directed Reading	3
ESS 879	Graduate seminar	3
ENS 899	Thesis	9
Total		**15**

The detailed programme for the Ph.D courses are as follows:

Year One of the Ph.D. (First Semester)

Course code	Course title	Credits
ENS 979	Advanced Research Methods	3
ENS 981	Advanced Statistics	3
ENS 999	Thesis	12
Total		**18**

Year One of the Ph.D. (Second Semester)

Course code	Course title	Credits
ENS 980	Academic Writing	3
ENS 981	Advanced Statistics	3
ENS 999	Thesis	12
Total		**18**

Year Two of the Ph.D. (First Semester)

Course code	Course title	Credits
ENS 977	Graduate seminar	6
ENS 999	Thesis	15

Total		**21**

Year Two of the Ph.D. (Second Semester)

Course code	Course title	Credits
ENS 977	Graduate seminar	6
ENS 999	Thesis	15
Total		**21**

Year Three of the Ph.D. (First Semester)

Course code	Course title	Credits
ENS 977	Graduate seminar	6
ENS 999	Thesis	15
Total		**21**

Year Three of the Ph.D. (Second Semester)

Course code	Course title	Credits
ENS 977	Graduate seminar	6
ENS 999	Thesis	15
Total		**21**