# AMENDED ZIMCHE APPROVED REGULATIONS FOR MScCCSD ALIGNED TO MBKS WITH A COURSE SYNOPSIS 2020


**ZIMBABWE COUNCIL FOR HIGHER EDUCATION**

ZIMCHE
*Quality Assurance in Higher Education*

21 J.M. Nkomo Road Hatfield
Box H100
Hatfield, Harare, Zimbabwe
Phone: 263-4-571163/5, 581993 / 581997
Fax: +263-4-581995
Website: http//www.zimche.ac.zw
E-mail: info@zimche.ac.zw


**BINDURA UNIVERSITY OF SCIENCE EDUCATION**
**FACULTY OF SCIENCE AND ENGINEERING**

**MASTERS OF SCIENCE DEGREE IN CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT (MSc.CCSD)**
**AUGUST 2020**

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| **Names and contact details of the Deans and Thought Leaders** | **Dean: Prof. Manatsa (773275334) dmanatsa@buse.ac.zw**<br>**Chairman: Dr Manyani (0773099436) amanyani@buse.ac.zw**<br>**Bindura University of Science Education, Faculty of Science and Engineering, Geography Department, Bag 1020, Bindura** |

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| **Name of Programme** | *MASTER OF SCIENCE DEGREE IN CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT (MSc.CCSD)* |
| Duration | *$1^1/_2$ years* |
| Minimum Credit Load | *306* |
| Maximum Credit Load | *360* |
| Maximum MBK/S Credit Load | 234 |
| ZNQF Level | *9* |

**a) Introduction (Preamble)**

This is a guideline to give the basic outline of what is contained in the programme (MScCCSD) regulations as assessed by ZIMCHE during the accreditation process.

**b) Rationale of the Programme**

The next generation of leaders in government, business and society, as well as those who support them, need to be well-versed in the realities of climate change. Much of Africa is highly vulnerable to the impacts of climate change, which threaten the continent's ability to address its development challenges. Current and future climate risks should therefore be mainstreamed into sustainable development. There is thus an increased demand for capacity to undertake research and awareness on climate change and sustainable development that addresses African needs, and to translate this research for use in policy, decision-making, strategy and implementation that ensure sustainable development is not undermined by climate change.

**a) Attention to Education 5.0**
**(Teaching, Research, Community Engagement, Innovation and Industrialisation)**

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| The delivery of the programme makes use of Strategies that incorporate Heritage Based Education Philosophy through the use of the local case scenarios. Indigenous ways of predicting and dealing with climate change to foster sustainable development are strongly considered. |
| Community Engagement Activities related to the programme to be done include climate change awareness campaigns, advocacy for drought resistant cultivars, production of climate change awareness material including participation in workshops of in which the country prepares response to COP and the UNFCCC. |
| New adaptation strategies to climate change for sustainable development would be muted and developed. |
| To develop highly qualified personnel to deal with the immerging issue of climate change and sustainable development. |
| Training and equipping of individuals with climate change knowledge is of benefit to the diversity of the economic sectors in the country |
| Innovation is fostered through the programme as individual will be equipped with skills to develop model and come up with ways of reducing the vulnerability of different communities to climate change. Students to adopt and apply the Blue Ocean Strategy. |
| The programme recruits student of different back ground and from different social-economic sectors. Thus, it has a strong linkage to the industry. |
| The programme incorporate mechanisms to either establish or utilize Industrial parks as it focuses on various climate change adaptation and mitigation strategies. |
| The programme strongly contributes to the industrialisation and modernization agenda of the nation through capacity building and development of models of use. |

| **Entry Requirements :** | Tick |
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| Normal Entry: *Applicants must be in possession of a relevant Honours Degree with at least 2.2 degree classification.* | √ |
| Special Entry: *Applicants without an Honours Degree or with passes lower than 2.2 may be considered for the programme if they have at least two years relevant working experience.* | √ |
| Mature Entry: *Applicants should be 25years and above and have passed Ordinary Level English and Mathematics. Two or more years of working experience in a related field is a must* | √ |
| Other (indicate) *(N/A)* | |

| **LEARNING OUTCOMES: Broadly, a graduate of a course that uses the SARUA curriculum will be able to demonstrate:** |
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| ***1.*** *New knowledge and understanding relating to climate change and sustainable development;* |
| **2.** *New abilities to practice or apply skills in this area, including research skills;* |
| ***3.*** *New understanding of the theoretical importance and value of certain practices in this area; and* |
| **4.** *New abilities/ competencies to apply knowledge, skills, and attitudes in a functionally linked way that enables problem-solving of complex challenges.* |
| **5.** *New abilities to advise policy makers on the new ways of predicting, modelling and safeguarding against the impacts of climate change.* |
| **6.** *Pursue PhD studies.* |

**CAREER OPPORTUNITIES**

There is rapid expanding market for sustainable development professionals with expertise in climate change. Graduates will find employment as: Practitioners in Government Department and Environment Ministries; International Organisations (United Nations); Non- governmental organisations (NGOs); Private sector; Consultancies and research; etc.

## Determination of Results

### Award of Degree

In order to be awarded the degree, students must pass, or be credited with all modules designated as core (8 courses), plus 4 other modules (making a total of 12 modules), and the dissertation, giving a minimum of 306 credits.

### Calculation of Final Mark

The final mark shall be **an aggregate of credits from twelve (12) taught modules (including all core courses)** plus the Dissertation. The twelve taught modules shall include eight core modules and the four elective modules which give the student the final mark. The taught modules shall carry a weighting of 60% and the dissertation 40% of the programme.

### Notification of Results and Award of Degree

Refer to General Regulations.

| **Programme Assessment (Describe and indicate percentage [%])** | |
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| Coursework | *This carries a minimum weighting of **40%** (Assignments 15% and presentation 15% and fieldwork 10%)* |
| By thesis | *Coursework not exceeding 25%. The Board of Examiners shall examine the candidate orally, exceptionally, if an oral examination is impracticable, a written examination. The Board of Examiners may require further examination through written papers, on subjects relevant thereto.* |
| Written Examinations | *A final examination is written with a minimum weighting of **60%**.* |
| Other | *The taught courses will carry a weighting of 60% of the programme while the dissertation carries a weighting of 40%. The Departmental Board of Examiners shall agree upon the final grade to be given for every module that a student has taken, or been credited with. The final grade in the module shall be based on the marks obtained in the final examination and on course work and the thesis assessed.* |

| **Basis of Allocating Credits** | | |
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| **Activity** | **Time in Hours** | **Credits** |
| **Contact Time/Time on task** | **48** | **4.8** |

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| Lectures | 24 | 2.4 |
| Tutorials | 12 | 1.2 |
| Field Visits | 4 | 0.4 |
| Laboratory Work | 4 | 0.4 |
| Workshops | 4 | 0.4 |
| Work Integrated Learning (WIL)/Industrial Attachment/Clinical Practice/Teaching Practice etc. | | |
| **Scheduled Assessment Time** | **48** | **4.8** |
| Final written examinations | 3 | 0.3 |
| In-class tests | 3 | 0.3 |
| Online Testing and Examinations | 22 | 2.2 |
| Seminar Presentations | 20 | 2.0 |
| **Independent Study Time** | **84** | **8.4** |
| Preparation for scheduled sessions | 40 | 4.0 |
| Reading | 13 | 1.3 |
| Written assignments | 13 | 1.3 |
| Revision Work | 18 | 1.8 |
| **Maximum Credits for the 80% Courses /Modules Threshold** | **180** | **18** |

| | Summary of Modules arranged in logical sequence, and allocation of Notional Hours and Credits | | | |
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| **Module name: MASTERS OF SCIENCE DEGREE IN CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT** | | | **Credits** | **Total Notional Study Hour** |
| **Level One** | | | | |
| **Semester One** | | | | |
| **Module Code & Name** | | **Core** | **Credits** | **Notional Hrs** |
| MCS501:Key Concepts of Climate Change and Sustainable Development | | **Y** | **18** | **180** |
| MCS503:Mitigation and Adaptation in Theory and Practice | | **Y** | **18** | 180 |
| MCS504:Agriculture, Food Security and Climate Change | | **Y** | **18** | 180 |
| MCS505:Climate Change and Ecosystem Services | | **Y** | **18** | **180** |
| MCS506:Climate Change and Urban Development | | **Y** | **18** | **180** |
| MCS507: Climate Change and Social Justice | | **Y** | **18** | **180** |
| **Total per semester** | | | **108** | **900** |
| **Semester two** | | | | |
| MCS508: Climate Change Disasters and Sustainable Development | | | **18** | 180 |
| MCS509:Population, Gender and Sustainable Development | | | **18** | 180 |
| MCS510:Climate Change Policy and Strategies | | | **18** | **180** |
| MCS511:Advanced Research Methods and Statistics | | **Y** | **18** | **180** |
| MCS512: Disaster Resilience, Mitigation and Management | | **Y** | **18** | **180** |
| MCS513: GIS & Remote Sensing for Climate Change and Sustainable Development | | | **18** | 180 |
| **Total per semester** | | | **108** | **1080** |
| **Level Two Semester One** | | | | |
| MCS600: Dissertation | | | **90** | **900** |

**MODULE SYNOPSES** (For all the 80% Modules Threshold. **NB:** Synopses are very central in that these are

| summaries of the key concepts to be taught in each module. | |
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| **MODULE** | **SYNOPSIS** |
| ***MCS501: Key Concepts of Climate Change and Sustainable Development*** | *This core module examines the concepts of sustainable development and climate compatible development and introduces the fundamentals of climate change science, policy, economic activity and finance in order to lay the foundation for the whole curriculum. Although more focused on theory than practice, this introductory module promotes an inter- and trans-disciplinary learning process through the inclusion of practical knowledge (i.e. knowledge of processes, key role-players, governance systems and common methodologies) in order for students to be able to generate knowledge that is practice-and policy-relevant, positioning international agendas and debates within an African context. As the module is orientated to introducing students to the climate change and sustainable development 'landscape', most of the Teaching-Learning-Assessment (TLA) activities take the form of readings, reviews and lectures to build the necessary foundational knowledge.* |
| ***MCS511: Advanced Research Methods and Statistics*** | *This module is an advanced study of research methods. The study is an in-depth examination of research designs for both qualitative and quantitative methods. The module builds students' practical skills in conducting, interpreting, and reporting quantitative data, in a widely used statistical software programme: Statistical Package for Social Sciences (SPSS). They will also learn on how to identify which statistics should be used under which circumstances; obtain statistics from SPSS, interpret, and write-up results for an evaluation report. Other key skills taught in this course will include the use of t-tests, ANOVAs, and various non-parametric statistics and propensity score matching to match comparison groups in a quasi-experimental evaluation.* |
| ***MCS513:*** GIS & Remote Sensing for Climate Change and Sustainable Development | *The course aims at equipping students with relevant knowledge and practical skills, which are indispensable in Climate Change and Sustainable Development issues. The course incorporates two disciplines, GIS and RS. Further the course builds on a prerequisite foundation for interpretation of remotely sensed imagery and GIS data. The course equips students with skills to use a map as an indispensable geographical tool in Climate Change and Sustainable Development.* |
| ***MCS503: Mitigation and Adaptation in Theory and Practice*** | *Although many factors can influence development outcomes in Africa, the continent is highly vulnerable to the impacts of climate variability and change, which complicate and potentially threaten the continent's ability to address its development challenges. Existing development "deficits" can result in higher vulnerability to climate than more developed countries, and climate impacts can feed back to slow down or reverse development gains. Additionally, development in Africa will require a step change in generation and access to energy, which can be derived from either low-carbon or high-carbon sources; the latter will contribute further to global warming and increase climate change risks for Africa, while low-carbon energy development reduces additional climate risks and opens up possibilities for Africa to "leapfrog" to sustainable energy systems. Climate compatible development (CCD) is the widely suggested response to these challenges and opportunities: low-carbon, climate resilient development that focuses on mitigation as well as adaptation while aiming to reduce poverty. Researchers and practitioners engaged in climate and development therefore need, first, to have a critical understanding of the case for CCD along with critiques and challenges from different political-economic and environmental perspectives (provided in Module 1), and second, to have a theoretical and practical knowledge of mitigation, and vulnerability, impacts and adaptation (VIA), in the African context. Additionally, students need to understand how mitigation and vulnerability, impacts and* |

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| | *adaptation intersect with each other in different development contexts.* |
| ***MCS504 Agriculture, Food Security and Climate Change*** | *Robust farming systems are able to change and adjust to new conditions and successful farmers are able to develop and apply methods to enhance ecosystem functions aiming to produce food in a sustainable fashion. Considering the growing climate related uncertainties and threats (such as extreme weather events) to agriculture, climate resilient farming practices have gained attention. Emphasis is placed on integrating proven local knowledge and climate resilient farming techniques to overcome climate related challenges. Changes in climate considerably affect the dynamics and status of the agrosystem biotic components including crops, livestock, pests and parasites, natural enemies, and other associated plants and animals. Climate change adaptation has been recognized as an essential aspect of a systems' sustainability that enhances farm productivity and food security. Climate resilient crop and animal agriculture enables the integration of adaptation and mitigation approaches via better land, water, fertiliser and energy management, restoration of cultivated soils, etc., for increased sustainability of the agrosystem. The sustainability of postharvest processing and that of other components of food security, namely food availability, food accessibility, food supply and food utilization is also affected by climate change, and appropriate and context-specific adaptation measures must be developed and implemented. A transdisciplinary approach that includes the ability to conduct research with – rather than for – farmers, extension staff and other stakeholders is essential for collaborative development of climate resilience in agriculture.* |
| ***MCS505: Climate Change and Ecosystem Services*** | *All development activities in both rural and urban settings are based on adequate functioning of ecosystems. An integrated approach to management of natural resources ensures sustainability. Climate change impacts will undermine the functioning of ecosystems and the services they provide, while ecosystems can also help with climate change mitigation and adaptation. Emerging issues relating to climate change impacts on ecosystems need to be integrated and accounted for in ecosystem governance and management systems. African governments and their citizens depend largely on the functioning of ecosystems, multiple ecosystem services and biodiversity as a basis of their economy. The productivity of major economic sectors such as agriculture, energy, tourism, forestry, fisheries among others draw directly or indirectly on ecosystem services provided by different ecosystems. Thus sustainability is at the core of how African governments, societies and research institutions view and think about ecosystems under climate change. Ecosystems are important to everyone, but our demand for the services provided by ecosystems and biodiversity, and strategies to cope, adapt and mitigate climate change impacts are under increasing pressure. For this reason there is a demand for graduates who possess a thorough understanding of climate change and its impact on ecosystems and ecosystem services. From this basis, we students can better understand the governance and social implications of decisions that we make and strategies we use to find sustainable solutions in the management and use of ecosystems and their services for development without adverse interference on African traditions of utilizing ecosystem services for livelihoods.* |
| ***MCS506: Climate Change and Urban Development*** | *This thematic block focuses on the intersections between climate change and the expansion and socio-economic development of urban settlements, comparing the trajectory and processes of urbanization in Africa with those in other regions of the world. Viewing cities as complex social, ecological and technical systems embedded in larger scale processes, the module has students critically engage with concepts and theories of risk, vulnerability, development pathways, carbon intensity, resilience and sustainability in urban contexts. The module focuses on how cities are both affected by and contribute to human-induced climate change, and how climate adaptation and mitigation can and is being integrated into urban development policies and practices. The module aims to familiarize students with* |

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| | *climate change and development challenges at the city scale and equip them to do further research, to advise on and take development decisions at this scale in the context of climate change in Africa. The module aims to systematically work through how climate impacts and adaptation, climate mitigation, and broader agendas of systemic change (in which climate change is seen as one of many drivers of change) intersect with the key dimensions of urban development. As such the module is organized into four learning themes: (1) urbanisation and the urban dividend; (2) addressing climate risks and vulnerabilities at the city-scale; (3) climate change mitigation at the city scale; (4) governing urban transitions under a changing climate. Issues of informality, context suitability (i.e. no one size fits all), scale (both temporal and spatial), decision-making power and social justice will cut across these learning themes.* |
| ***MCS507: Climate Change and Social Justice*** | *The 'human' dimension of climate change is often lost in the technocratic world of climate governance and notions of 'sustainable development' are bound increasingly to ecologically and socially unjust neoliberal market-orientated strategies for development. Yet, the vast majority of people in southern Africa are 'ecologically sensitive', experiencing vulnerabilities associated with widespread dependency on the land and natural resource base, and from exposure to 'natural' hazards. The localised effects of global climate change are exacerbating these experiences. In addition, countries in the Global South have contributed significantly less to the emission of greenhouse gases (GHGs), which are a major cause of climate change than their Northern counterparts, and yet they withstand the worst of climate impacts and now need to include GHG reductions into their planning. These issues should be considered through a social justice lens. As such, there is an urgent need for graduates of this programme to have the skills needed to think critically about the way in which climate change is already and will likely continue to exacerbate existing social injustices and insecurities in a context of deepening structural inequality and poverty. It is also important for them to understand how particular policy frameworks and governance strategies function to promote or hinder social justice and people's vulnerability and what opportunities exist, even in the face of serious capacity deficits, to think creatively about how to advance greater social justice in the region from the community level up.* |
| ***MCS508: Climate Change Disasters and Sustainable Development*** | *This course is being offered against the background of sudden increase in intensity, frequency and magnitude of weather related hazards and disasters worldwide and its differential impacts on different ecological and geographical regions. Key focus is on Climate Change as one of the major risk drivers globally - how the effects of climate change are configuring the hazard and disaster risk context. Climate and environmental justice are also examined to greater detail, incorporating North-South relationships in ecological politics. Mitigation and adaptation strategies and options are examined. Insights on possibilities for 'climate' and 'disaster-proofing' development projects are examined in this course.* |
| ***MCS512: Disaster Resilience, Mitigation and Management*** | *This module introduces students to factors that give rise to hazards/risks and vulnerability, and to the various mitigation, resilience, and management policy interventions in different countries. Specific topics covered include: History of disasters and the Emergency Management Cycle (Mitigation, Preparedness, and Recovery), principles of disaster recovery management, overview of risk, vulnerability and resilience in southern Africa, disaster institutions, disaster policies and laws, disaster politics and agenda setting, communication/media and disaster management, hazard mitigation and land use planning, investment and the economics of disasters (financing disaster responses and recovery), hazard insurance, the role of non-governmental organisations in disaster management, intergovernmental relations in disaster management, social capital and disaster recovery, community capacity and vulnerability assessment, community engagement and participatory planning, gendered dimensions of disaster mitigation, resilience* |

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| | *and management. Livelihoods development, Indigenous Knowledge Systems and disaster risk reduction, humanitarian principles, standards, policy and planning, and Zimbabwe emergency or disaster management system case study.* |
| ***MCS509: Population, Gender and Sustainable Development*** | *The course explores the different key drivers of migration and how the process has impacts on gender relations. The course exposes students to the theories of gender and how gender relations, mostly in LEDCs and MEDCs influences sustainable development. The course aims to enable students to: become familiar with the fullest range of gender theories with particular attention to the intersections of gender, sexuality and race; develop a critical appreciation of these different theories of gender; use gender theories to inform their appreciation of existing work in their own disciplines and in an interdisciplinary context; use the analysis of gender relations as a basis for case study evaluation and research. The course considers the impact of gender analysis on key areas of social science investigation, and develops these with particular attention to location, ethics and the importance of global or transnational dimensions. It is expected that this course provides a thorough grounding for work across all other courses.* |
| ***MCS510 Climate Policy and Strategies*** | *This course exposes students to national and international policies and strategies that relate to climate change. It covers the various definitions, concepts and models/frameworks of policy making and analysis, types of policies, classifications, the policy making process, actors involved in policy formulation and implementation, target groups, their outcomes, and challenges faced. It also places emphasis on climate negotiating skills in international policies. While the main focus is on the discussion of climate policies and strategies, the course also links the policy analysis process to the policymaking process, showing how to identify and involve all relevant stakeholders in the process, and how to create favourable conditions for sustainable development.* |
| ***MCS600 Dissertation*** | An original research on a topic of the choice of the student in agreement with the supervisor(s) concerning pertinent issues learnt in Climate Change and Sustainable Development courses is to be done during the second year. The dissertation shall be based on informed and advanced skills of research and report writing which include development of a research problem, formulation of research objectives, research methodology, data analysis, conclusions and recommendations. The candidate shall be required to make his/her viva voce presentation of the Dissertation to the Departmental Panel of Examiners. The viva voce examination will constitute 15% of the dissertation weight in determining the candidate's final grade. |

**THE END**