MASTER OF SCIENCE (RENEWABLE ENERGY COURSE OUTLINE

Part (1) Preliminary Course

RE001- Foundation Studies in Renewable Energy and Sustainability
RE002- Grid Connected Photovoltaic Power Systems
RE003- Solar and Thermal Energy Systems
RE004- Energy Storage Systems
RE005- Renewable Energy Resource Analysis
RE006- Wind Energy Conversion Systems
RE007- Energy System Efficiency

Part (2) Qualified (1) Course

Semester (1)

RE008-Mathematics & Physics (I)
RE009-Mathematics & Physics (II)
RE010-Engineering Materials
RE011-Civil & Mechanical Engineering

Semester (2)

RE012-Electrical Engineering
RE013-Electrical Machines
RE014-Electronics Control
RE015-Electrical Project
RE016-Design & Management

Part (3) Qualified (2) Course

RE 501-Control of Solar Energy System
RE502- Biomass Gasification
RE503- Energy Management in Industrial and Commercial Facilities
RE504- Engineering Solution for Sustainability
RE505- Green Building Design
RE506- Low Emission Power Generation Technologies
RE507- Offshore Wind Turbines
RE508- Solar Hydrogen Energy System
RE509- Applied Photovoltaics
RE510- Water Conservation
RE511- Sustaining Earth Energy resource

A written report between 10,000 – 12,000 words that covers both theory & practical knowledge of the above units.

Part (4) Final Thesis

Res 601 Research Method
MAE 602 Thesis

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

What is research?

Tools of research

The problem: the heart of the research process

Review of the related literature

Planning your research design

Writing the research proposal

Qualitative research

Historical research

Descriptive research

Experimental and causal - comparative designs

Statistical techniques for analyzing quantitative data

Technical details: style, format, and organization of the research report

Masters Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader.

Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader.

The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore. It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable.

It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to

be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods. Where a period of literature review or research should precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

Res 601 Research Method

MENG6005 Quantitative Methods and Statistics (45 hrs) 3 credits

MAE 602 Thesis

Engineering Project/Thesis 24 credits

Candidates need to complete a 60000-words engineering dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a dissertation as part of the assessment for the MSc (RE) degree. Doing a thesis means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves. They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title. A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Engineering Dissertation Defense 9 credits

It is expected of Master's candidates to defend their thesis by means of a colloquium doctum (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Program Total Credits 48 credits

Candidates need to complete all course assessments with the results of Grade B+ or above.