COURSE DESCRIPTIONS

Course Name: ADVANCED RESEARCH METHODS

Course Code: DRGT 9101

Credit Units: 4

Credit Hours: **60**

Brief Description

The advanced research methods course is a four credit unit (4CU) course aimed at equipping students with knowledge and skills of frameworks, processes and approaches for designing a qualitative and/or quantitative doctoral research study in the natural and social sciences. Although there is increased interest and use of qualitative research, the distinctive attributes of this approach from more traditional forms of research are still unclear to some. This course, therefore, offers a unique blend of qualitative and quantitative approaches in the research process. The broad objective of the course is premised on provision of sufficient information and knowledge to enable students acquire the skills to be able to formulate a relevant and acceptable doctoral research problem, make an educated choice of method(s), implement this/these method(s) and finally write a scientific report about the findings or results.

Learning Objectives

At the end of this course, the students will have been empowered to:

- be able to critically analyse a scenario and formulate relevant research problems
- be able to analyse different scenarios and frame relevant problems that can be expressed and defined in a professional way (conceptualisation and operationalisation)
- make an informed choice of methods from the relevant research paradigm/paradigms correlated to the specified research problem
- developed skills to make effective use of the library and e-resources in sourcing literature

Course Content

The course covers the following topics:

- Formulation of Research Problem(s) and the logical framework:
 - Underlying processes of scientific research; Role of theory in problem formulation; philosophical basis of formulation of a research problem, Generating versus verifying theories, The empirical unfolding of research problems, Research questions stemming from multi-method Research, Mixing metaphors to generate research problems, Identifying research objectives, The logical framework approach to project planning and management, The vertical logic of a logical framework, The horizontal logic of a logical framework; The project outputs and activities, the proposal budget and budgeting.

• Library Information search: Use of library and e-resources in research proposal writing; citations and referencing techniques

Overall methodological approach – Quantitative approaches

- Sample size and sampling techniques sampling simple random sampling, stratified random sampling; ratio estimators, difference estimation and regression estimator; systematic sampling; cluster sampling; multi-stage sampling; multi-phase sampling; sampling on successive occasions, errors in survey
- Research design (experimental, quasi-experimental and observational study designs Case control, Cohort and Cross-sectional)); data analysis. Major theoretical and philosophical underpinnings of research including: the idea of validity in research; reliability of measures;

Qualitative approaches - Qualitative research methods and research instruments; blending quantitative and qualitative research designs

Ethical considerations and research

Orientation to data collection and analysis - Suitable data collection and analysis techniques; Interpretation and conclusion of the research; Writing an effective research proposal; Selection of software implementation methods;

Course Delivery

- Didactic lectures to stimulate discussion
- Group work
- Practical demonstration and hands on sessions
- Assignments
- Presentations