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**DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY**

**SCHOOL OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE**

**MASTERS OF SCIENCE- COMPUTER SCIENCE**

## CCS 6101- Research Methods

**LECTURER : Dr Jane Kuria EMAIL : jane.kuria@dkut.ac.ke**

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**Prerequisite**: None

**Course Purpose:**

The purpose of this course is to advance learners’ ability in research methods and obtain the ability to understand and critically evaluate research work, peer review manuscripts, and offer constructive research feedback.

**Learning outcomes**

By the end of this course a learner should be able to:

1. Evaluate different research process models.
2. Apply deductive and inductive analytical approaches and procedures for qualitative and quantitative data.
3. Develop, present and defend a research proposal.
4. Disseminate research findings within ethical, legal and professional frameworks.

**Course outline:**

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| Week 1 | **Introduction:** The Research Design, worldviews, strategies and research methods | 3 hrs |
| Week 2 | **The formulation of research proposals:** Identifying research problem, proposal formats, **Components of a research proposal;** developing a working title, framing background information, problem statement, general and specific objectives, research questions, highlighting significance/contribution to the discipline, | 3 hrs |
| Week 3 | Presentation I-Chapter One | 3 hrs |
| Week 4 | **Literature review,** research writing skills; referencing, grant writing | 3 hrs |
| Week 5 | Presentation II – Chapter Two, Paper Outline | 3 hrs |
| Week 6 | **Research methodology:** Research designs; Data collection; data types, data collection tools; sampling methods; questionnaire design, modelling and simulation; |  |
| Week 7 | **Data analysis:** qualitative analyses, quantitative analyses; Presenting and interpreting of findings,  **Data analysis Assignment** | 3 hrs |
| Week 8 | Presentation III- A poster for proposal  Submission of Poster | 3 hrs |
| Week 9 | **Types of research reporting:** paper for referred journal, Conference and workshop paper;  thesis;  **Presentation and communication of results:** oral presentation; Journal Impact factor;  Emerging areas of research, multi-disciplinary research | 3 hrs |
| Week 10 | Presentation IV- Draft Paper | 3 hrs |
| Week 11 | **Research Ethics:** intellectual property  rights, plagiarism, ethical clearances, breach of contract. | 3 hrs |
| Week 12 | Presentation V: Proposal presentation | 3 hrs |
| Week 13 | Presentation VI: Proposal presentation | 3 hrs |
| Week14 | Submission of data analysis Assignment |  |
| Week 15 | Submission of the Proposal |  |

**Teaching Methodology:**

Online Lectures, , Case Studies, Seminars, Presentations and Discussions

**Instruction Materials/Equipment**

White-board, LCD/Overhead Projector, handouts, smart board and personal computers and e-learning portal.

**Assessment:**

Research proposal 30%

Publishable Research article 30%

Assignment on data analyses 20%

Two Presentations: (Oral and Poster) 20%

**Total = 100%**

**Grading system:**

70 – 100 A

60 – 69 B

50 – 59 C

40 – 49 D

Below 40 E

**Key text book**

Creswell, J. W. (2018). Research Design: Qualitative, quantitative, and mixed methods

approaches. Sage publications

**Other Reference Texts:**

1. Hamming, R. W., & Kaiser, J. F. (2013). You and Your Research.
2. Cargill, M., & O'Connor, P. (2013). Writing scientific research articles: strategy and steps. John Wiley & Sons, Incorporated.
3. Bryman A. (2012). Social Research Methods (4th Edit.). United States: Oxford University Press.

**Journals**

Journal of Research Practice – An Open Access Journal.

Information Systems Research

Computers and Operations Research