UNITED STATES INTERNATIONAL UNIVERSITY
SCHOOL OF SCIENCE AND TECHNOLOGY
FALL 2023

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APT3065-B
MID TERM PROJECT

Course Code:	APT 3065
Pre-requisites:	IST 4075
Class Days/Time:	Friday 1:30 Pm – 4:20 pm
Venue:	ICT Centre, LAB4
Credits:	3.0
Instructor:	Alukwe Chrispus-CEH
Email:	caakhonya@usiu.ac.ke
Consultation	By
Office:	Appointment
	Ideation Lab (Staff Launge)

Course Description

Students will undertake an individual ICT project in the early part of their third year. This will enable students to employ the tools and techniques learned so far to solve a real-world problem. The knowledge, tools and techniques will include amongst others programming, database technology, networking, systems analysis / software engineering, networking, web applications development, mobile computing and project management. Students will write a project proposal based on either a problem domain given by the instructor or identified by the student. The project will be supervised by the instructor to ensure *timelines, quality and student engagement*. The deliverable will be *a software/hardware product* that will be demonstrated at the end of the semester and a project report. **The grade will be based on the product demonstration and project report**. The supervisor may

require progress reports during execution of the project. Innovation will attract better grades

By the end of the module, students should be able to:

- Plan and manage a significant individual project, including detailed considerations of resources, timetabling and professional issues

- Build a substantial software system from design to documentation, or carry out a substantial research project from methodology to conclusions

- Present their work ***orally, with appropriate uses of audio-visual aids and interactive demonstrations, and respond to questions effectively*** • Produce a substantial technical report and reflective writing.

Private study description Private study and independent learning in this module includes:

i. Research into the subject area of the project, and into available existing solutions.
ii. Planning and managing own work.
iii. Preparing for and learning from supervision meetings.
iv. Designing, solving, programming, testing and evaluating own software artefacts or research work.
v. Preparation of the written reports and the oral presentation.

vi. Reflecting on feedback received on the progress report and the oral presentation.

Course Aims & Purpose:
This course aims enable students to be able to carry out research and develop advanced applications
Objectives and distinctive features:
- Be able to develop application with time and cost constraints.
- Be able to Conduct academic research independently (only with guidance by supervisor, e.g. more aimed at discussing the steps to be taken).
- Expanding the research experience concerning the different aspects of doing academic research: scientific reasoning, scholarly communication, research methods, theoretical principles and their implications for actual research.
- Developing advanced applications using applications development methods and tools.

Course Content:
Students will liaison with their designated departmental supervisor to determine a suitable project Tittle to be undertaken by the respective student. Concept Paper of One Page giving a summary of the entire project will be key.
The students will work alone or in teams of two/3 on a project within the field of IT, Science and Business IT. Where possible the project will be initiated by an external party to assure real life problems.

Expected Learning outcomes:
After this course, students should be able to:

1. Transform a roughly outlined problem into a carefully defined research question, supported by some level of reading up on the topic.
2. Establish a feasible project schedule for answering the question.
3. Conduct autonomous research to answer the question at hand, using literature searches, studying, experimentation and/or the development of software and hardware.
4. Present solutions to a diverse audience (experts as well as non-experts).
5. Defend solutions in debates.
6. Provide an appropriate report/paper.

Teaching and Learning methodologies
Lectures, Presentations by members of the class, Case discussions, Tutorials, , Library, appropriate software.

Week	Topic
Week 1	Introduction to Research in Computer Science and Information Systems Fundamental characteristics of science, technology and scientists; Scientific thinking skills
Week 2	An introduction to research and research environment requirements.
Week 3	Literature search and reviewing with an emphasis on on-line search methods
Week 4	Requirement Analysis & Concept Paper Writing.
Week 5	Systems Analysis and Design
Week 6	Software Development Methodology
Week 7	MID - SEMESTER EXAMINATION
Week 8	Scientific Communication and Writing
Week 9	Project Implementation and Progress Evaluation
Week 10	Project Implementation and Progress Evaluation
Week 11	Project Implementation and Progress Evaluation
Week 12	Project Implementation and Progress Evaluation
Week 13	Project Implementation and Progress Evaluation
Week 14	FINAL SEMSTER EXAMINATION

Course Assessment

  i.   **Project Progress Report 5%**
  ii.   **Concept Paper 10%**
  iii.   **Project Proposal 20%**
  iv.   **Project Presentations 15%**
  v.   **Project Report 20%**
  vi.   **Software/Hardware Product 30%**

Core Reading Materials for the Course

  Textbooks
a.   • Dawson, C. W. (2015). Projects in computing and information systems: a student's guide. Pearson Education.
  Journals
b.   • 1. ACM Journals
c.   2. IEEE
  Recommended Reference Materials

  1. Laplante, P. A. (2018). Technical Writing: A Practical Guide for Engineers, Scientists, and Nontechnical Professionals. CRC Press.
  2. Paiva, R. P. (2013). How to Write Good Scientific How to Write Good Scientific Project Proposals: A Comprehensive Guide.

Other Core Texts Books and References:
1. The Essential Guide to Doing Your Research Project by Zina O'Leary (Nov 19, 2013) ISBN-10: 1446258971| ISBN-13: 978-1446258972 | Edition: Second Edition
2. How to Do Your Research Project: A Guide for Students in Education and Applied Social Sciences by GaryThomas (Jul 18, 2013) ISBN-10: 1446258874 | ISBN-13: 978-1446258873 | Edition: Second Edition
3. The Essential Guide to Doing Your Research Projectby Zina O'Leary | May 5, 2017
4. How to Do Your Research Project: A Guide for Studentsby Gary Thomas | Aug 9, 2017
5. How to do a Research Project: A Guide for Undergraduate Students, 2nd Editionby Robson | Dec 19, 2016
6. Introducing Research Methodology: A Beginner's Guide to Doing a Research Projectby Uwe Flick | Apr 14, 2015