

# **DOCTOR OF PHILOSOPHY (PhD) IN BUSINESS INFORMATION SYSTEMS**

## **1.0 INTRODUCTION**

The course provides rigorous advancement of applied concepts of business Management and Information Technology, the School of Informatics and Innovative Systems (SIIS) has introduced a Doctor of Philosophy (PhD) in Business Information Systems a three year postgraduate programme for researcher and professional in the information Systems sector in business and industry. The School is contributing in its own inimitable way to the development of Business informatics by offering this course with the help of efficient and highly qualified researchers and supervisors through a well-equipped computer lab and efficient supervisory system. In the first year students undertake course works to provide them with the necessary theoretical grounding before embarking on independent research in the second year. In the third year Doctoral candidates gets an opportunity to write their thesis. Hence the combination of the Coursework as a practical research training and independent research equip graduates with the requisite theoretical knowledge and skills required of a doctorates with a PhD in Business Information Systems in business, academia and industry.

There is a significant demand for Doctorates and professionals with research training and understanding in Business Information Systems in academia, business and industry. Successful candidates of this course may enter positions in a variety of areas such Directors, Research Fellows and Lecturers.

## **2.0 OBJECTIVES**

The PhD in Business Information Systems is aimed to equip doctoral candidates with the knowledge and research skills to operationalize the research objectives they have developed by focusing on research literature and systems development methods required to conduct applied/empirical research and writing the thesis in Business Information Systems (BIS). The specific objectives of the programme are to:

- a) Increase the doctoral candidates' awareness of the current trends in BIS research, and the reasons underlying the priorities of the research community.
- b) Provide an opportunity for critical discussion of selected "snapshots" case studies drawn from the BIS professional practice.

- c) Encourage doctoral candidates to survey journals and other sources in public domain which will broaden and add depth to their knowledge of research results in BIS.
- d) Enable the doctoral candidates to establish a clear philosophical and methodological basis for the production of an academically sound thesis in business information systems.

### **3.0 ADMISSION REQUIREMENTS**

To qualify for admission into the Doctoral programme, candidates shall be:

- a) Holders of at least a Masters degree from Jaramogi Oginga Odinga University of Science and Technology, with specialization in Computer Science or related areas.

OR

- b) Holders of relevant Masters degree of any other recognized University.
- c) In addition to the above, applicants must meet the specific requirements of the Doctoral degree programme as approved by the Senate.

### **4.0 CREDITS TRANSFER**

A candidate may be exempted from some course units and credit(s) transferred from institutions recognized by the Senate, subject to the following conditions:

- ) Must have passed in similar course units at PhD level. Request for exemption should be made in writing to the Director, Board of Postgraduate Studies through the Dean of the School of Informatics and Innovative Systems and must be accompanied by officially endorsed supporting documents.
- ) Candidates may be allowed to transfer up to one third (1/3) of the total number of course units.
- ) Application for transfer will be processed only after payment of the prescribed fees.

## **5.0 COURSE STRUCTURE AND DURATION**

The PhD by Coursework and Research course shall normally take three years offered by a combination of unit method, independent research and thesis.

The duration of independent research is two years while research training coursework takes one academic year, depending whether the pre-doctoral programme is partly by research and partly by coursework or a combination of the two. One semester shall comprise minimum of Four (4) units and a maximum of Six (6) units.

Course work shall be offered in units. A course unit is defined as that part of a semester subject described by coherent syllabus and taught normally over a period of a semester. It is designated as a total of 42 hours of study in a semester. For this purpose, one 1-hour lecture is equivalent 2-hours tutorial or 3-hours practical or any combination as may be approved by the Board of the School of Informatics and Innovative Systems.

Part-time students shall be allowed to take not less than 50% of the courses prescribed for the year.

All course units will be taught for a total of 42 contact hours, including examinations except project work which will take 480 hours of practical work and project writing.

## **6.0 EXAMINATIONS REGULATIONS**

University Examinations rules and regulation shall apply.

## 8.0 COURSE DISTRIBUTION

The coursework units will be delivered through interactive lectures, case study seminal discussions and BIS Practitioner colloquia comprising of a 12 week one-hour lectures covering specific topical areas of subject matter. Throughout the module candidates are expected to demonstrate their on-going progress, reflect upon their own research interests, and then communicating those aspects that they feel will be of benefit to other candidates through presentations.

In terms of learning, a variety of strategies are used including case analysis, problem solving, structured lectures and lab sessions. Assessment is made through literature review, essays and evaluative literature discussions. Thesis are a major research and development project applying newly acquired skills using tools, methods and techniques learned during the course, resulting in independent production of a 10,000 - 12,000 word thesis. The research component should maintain relevance to industry and business to provide valuable professional experience that augments and extends the skills developed on the course.

## 9.0 COURSE DISTRIBUTION

### YEAR ONE: SEMESTER ONE

Course Code	Course Title	Contact Hours			Weight (Units)
		Lecture	Practical	Total	
IIS 6111	Current issues in Business Information Systems Research	28	14	42	1
IIS 6112	Philosophy of Science and information systems	28	14	42	1
IIS 6113	Information Systems Theory, Problem Solving, and Decision Making	28	14	42	1
IIS 6114	Academic and Scholarly Writing	28	14	42	1
IIS 6115	Topics Emerging Information Technologies for Business	28	14	42	1
IIS 6116	Research Design	28	14	42	1
<b>TOTAL</b>		<b>168</b>	<b>84</b>	<b>252</b>	<b>6</b>

### YEAR ONE: SEMESTER TWO

Course Code	Course Title	Contact Hours			Weight (Units)
		Lecture	Practical	Total	
IIS 6121	Business Systems Professional Project Management	28	14	42	1
IIS 6122	Enterprise Systems and Business Process Management	28	14	42	1
IIS 6123	Design Science Research in Information Systems (IS)	28	14	42	1
IIS 6124	Advances in Business Data Modelling and Management	28	14	42	1
IIS 6125	Designing and Implementing Innovation Systems Workshops	28	14	42	1
IIT 6126	Information Technology Research and Practice	28	14	42	1
<b>TOTAL</b>		<b>168</b>	<b>84</b>	<b>252</b>	<b>6</b>

## YEAR TWO

Course Code	Course Title	Contact Hours			Weight (Units)
		Lecture	Practical	Total	
IIS 6211	Independent Research	0	0	0	3

## YEAR THREE

Course Code	Course Title	Contact Hours			Weight (Units)
		Lecture	Practical	Total	
IIS 6311	Thesis	0	0	0	3



**IIS 6114      Academic and Scholarly Writing      (42 Hrs)**

Explore resources, strategies and techniques for critical reading, academic research and writing across scholarly disciplines. Practical techniques for critical reading, researching and writing. Academic culture and particular ways of discourse and composition. Reading strategies and writing methods necessary for joining scholarly discourse communities. Development of skills required with digital literacy; as researchers and presenters of research. Advanced writing principles to produce a proposal, thesis, dissertation, or manuscript: writing process, use of sources, and graphics. Scholarly writing style and mechanics are discussed with emphasis on organization, clarity, and conciseness.

**IIS 6115      Topics Emerging Information Technologies for Business      (42 Hrs)**

Emerging information technologies, how they evolve, how to identify them and the effect of international, political, social, economic and cultural factors on them. The dynamic of emerging IT/IS potentially capable of enhancing business operations, emerging tools and technologies for business: rich Internet applications, mobile platforms and applications, intelligent systems for monitoring and tracking real-time activity, and new computing paradigms. In-depth analysis of various emerging information technologies: their characteristics, key benefits, and potential pitfalls, methods for assessing the viability and their impact on different business settings. Management of emerging technologies and their integration with existing information technology.

**IIT 6116      Research Design      (42 hrs)**

Interpretation and application of quantitative, qualitative, and mixed methods research. Formal research process: practical applications and skill development. Critical concepts and principles intrinsic to research paradigms, study designs, and methods of inquiry: research formulation, and research questions interpretation.

## **YEAR ONE: SEMESTER TWO**

### **IIS 6121 Business Systems Professional Project Management (42 Hrs)**

Information is a key organizational resource, critical to planning, decision-making and control. Management's role in shaping, directing and controlling information systems activity: recent technological advances in hardware and software, systems design and applications development, end-user computing, telecommunications, management of systems projects, the role and organization of the IS function in the firm, strategic planning of information systems, and the use of information for competitive advantage.

### **IIS 6122 Enterprise Systems and Business Process Management (42 Hrs)**

Building and managing an e-business: the decision to bring a business online, choosing a business model, developing a business plan, accepting payments, marketing strategies, and security. Electronic Commerce for Managers: strategic architecting, development and use of Business IT systems and processes in organisations and business enterprises. Organizational enterprise architecture and business process management implications in: e-commerce/e-business/e-government, trust in the enterprise environment, supply chain and customer relationship management systems, legacy information systems integration, data and content management, business analysis, requirements engineering and systems realisation and managerial implementation (including executive judgement). An in-depth course project is required as part of the assessment. A complete web-based e-business storefront will be designed and developed based on a viable business model and marketing plan.

### **IIS 6123 Design Science Research in Information Systems (IS) (42 Hrs)**

Design Science Research in Information Systems (IS): understanding, conducting, evaluating, and publishing design science research. Design of novel or innovative artifacts, analysis of the use and/or performance of such artifacts in understanding the behavior of aspects of IS, these are: algorithms (e.g. for information retrieval), human/computer interfaces and system design methodologies or languages. Design science research methods phases: artifact design, construction, analysis and evaluation. This is then followed by a number of resource sub-



sections that relate to design science research resources: citation lists, links to resources on the Internet for design science researchers, calls for papers and links to conferences, workshops, journals and communities of practice for IS design science research.

**IIS 6124      Advances in Business Data Modelling and Management(42 Hrs)**

The course is designed to teach new forms of information and data modeling, taking advantage of rich computer media and a variety of conceptual approaches such as Object Role Modeling, Unified Modeling Language, and Entity Relationship Modeling. The role of data modeling in subsequent activities of an Information Technology project will be explored including business intelligence and competitive intelligence. Students will translate conceptual models into workable logical and physical designs resulting in a database implementation.

**IIS 6125      Designing and Implementing Innovation Systems Workshops  
(42 Hrs)**

Designing and Implementing Innovation Systems Workshops: Understanding of what innovation is. Development of strategies for building innovation culture. Institutionalizing innovation through multi-layered organizational systems. Tools for capturing value from innovation, monitoring and measuring performance of innovation systems. Manufacturing and production industries innovative strategies: in-sourced, continuous innovation new product development, and maintenance of competitiveness and viability in the global markets in today's knowledge economy

**IIT 6126      Information Technology Research and Practice      (42 hrs)**

Overview of technical foundations of information technology research and practice. Examine current and emerging research and practice technologies, processes, and methods; compare quantitative and qualitative methodologies; and identify the research methodologies commonly used in IT research. Identify and develop a research topic, define a research problem, describe the purpose of the research study, and establish associated research question(s). Preparation of Topic Paper and a preliminary annotated bibliography for the dissertation topic. This course prepares PhD learners for doctoral research related to IT literature and theory.

## **YEAR TWO**

### **IIS 6211      Independent Research**

**(960hrs)**

The student selects a research topic and conducts a literature review. Write concept and research proposal. Only those who have satisfied the SIIS School Board shall be allowed to proceed with the research work.

## **YEAR THREE**

### **IIS 6311      Thesis**

**(1440hrs)**

Students will carry out research work, write and present their thesis for examination.