

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**SEMESTER**

**MIS6020 APPLICATION DOMAINS OF INFORMATION TECHNOLOGY**

**LECTURER:** DR. PAUL OKANDA

**DAYS/TIMES:** Monday 5.40 pm – 9 pm

**VENUE:** ICTLAB3 **CREDIT:** 3 UNITS

**OFFICE HOURS DAY/TIME:** Monday 11 am – 1 pm, Thursday2 pm – 5 pm

**ROOM:** 2ndFloor, Lillian Beam Building

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**1. COURSE DESCRIPTION**

This course will study the characteristics of a digital firm including business relationships with customers, suppliers, and employees are digitally enabled and mediated; core business processes being accomplished through digital networks; key corporate assets being managed through digital means; internal and external environments being quickly recognized and dealt with. The course is designed to enable students develop a critical view of how Information Technology is implemented and used within different organizations and ‘application domains’. The term ‘domain’ is used to signify areas of use of IT and the term ‘application’ to signify focus on how it is applied in specific contexts. Almost any human activity can be thought of as an application domain, including commercial, industrial, educational, medical, library, financial, governmental, scientific, professional, domestic, artistic, entertainment and personal domains.

Prerequisites or Co-requisite: BUS5080 Survey of Information Systems

**2. LINK TO UNIVERSITY MISSION OUTCOMES**

This course is expected to help students develop skills in higher order thinking, global understanding, and multicultural perspective in the students. It is expected to develop proficiency in literacy, prepare the student for future careers in Business and Information and Communication Technology (ICT). It will hone the ability in the learners to serve the community and culture students in ethical matters that will set them apart as Professional leaders of integrity.

**2.1. LINKS TO SCHOOL OF SCIENCE & TECHNOLOGY MISSION OUTCOMES**

This course is designed to:

* Develop competence in critical thinking, create skills, use of technology, creativity and good communication skills
* Provide service to the community: Acquire practical working experience through participation and contribution to positive/good community and societal causes
* Demonstrate preparedness for career and lifelong learning in their chosen disciplines as well as understanding of the interdisciplinary nature of knowledge.
* Demonstrate the use of qualitative and quantitative research skills in Biomedical, Communication and Information Technology
* Apply theories, concepts, and principles found in biological and physical sciences, including a thorough grounding in communication skills in multicultural & global perspectives.
* Demonstrate a thorough understanding of effective, efficient professional and ethical leadership

**3. EXPECTED COURSE LEARNING OUTCOMES**

By the end of the course students are expected to:

1. Analyze and synthesize the characteristics of a digital firm and synthesize the process of building information systems.
2. Describe global e-business and collaboration, IT infrastructure and emerging technologies.
3. Describe the foundations of business intelligence underpinned by databases and information management.
4. Critically analyse issues related to telecommunications, the Internet, wireless technology and describe methods of securing information systems.
5. Identify how operational excellence and customer intimacy is achieved through enterprise applications and discuss key system applications and domains for the digital age.
6. Recognize the role of e-commerce in digital markets and describe how knowledge and projects are managed.

**4. CONTENT & CLASS SCHEDULE**

**4.1. Week 1 (A): Welcome and Overview**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Obtain a course outline, discuss the course syllabus and understand expectations on learning outcomes by the lecturer.
* Be clear on what the course aims to deliver and have access to all the necessary class materials, course texts and lab resources needed to successfully undertake the course.
* Familiarize themselves with the Blackboard e-learning system.
* Appreciate USIU’s regulations regarding the learning environment and exams.

**Week 1 (B): Information Systems in Global Business Today**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Explain how information systems are transforming business, and what their relationship is to globalization.
* Explain why information systems are so essential for running and managing a business today.
* Describe what an information system is, how it works, what its management, organization, and technology components are.
* Define what complementary assets are, why complementary assets are essential for ensuring that information systems provide genuine value for an organization.

**Discussion Topics:**

* Case study on IT in Global Business

**Class Activities:**

* Lab Exercise

1. **Week 2 (A): Global E-business and Collaboration**

**Learning Outcomes:**

By the end of this week students are expected to:

* State what business processes are, how they are related to information systems.
* Describe how systems serve the different management groups in a business.
* State how systems that link the enterprise improve organizational performance.
* Describe why systems for collaboration and teamwork are so important, and what technologies they use.
* Define what the role of the information systems function in a business is.

**Discussion Topics:**

* + Case study on Business Information Systems

**Class Activities:**

* Lab exercise

1. **Week 2 (B): Information Systems, Organizations and Strategy**

**Learning Outcomes:**

By the end of this week students are expected to:

* Define features of organizations that managers need to know about to develop and use information systems successfully, the impact of information systems on organizations.
* Discuss how Porter’s competitive forces model helps companies develop competitive strategies using information systems.
* Discuss how the value chain and value web models help businesses identify opportunities for strategic information system applications.
* State how information systems help businesses use synergies, core competencies, and network-based strategies to achieve competitive advantage.
* Describe challenges posed by strategic information systems, and how they should be addressed.

**Discussion Topics:**

* + Case study on Information Systems in Organizations

**Class Activities:**

* Lab exercise

1. **Week 3(A): Social, Ethical and Legal Issues in Information Systems**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Explain what social, ethical, and legal issues are raised by information systems
* State what specific principles for conduct can be used to guide ethical decisions.
* Discuss why contemporary information systems, technology, and the Internet pose challenges to the protection of individual privacy and intellectual property.
* Describe how information systems have affected everyday life.

**Discussion Topics:**

* + Case study – Social, Legal and Ethical Issues

**Class Activities:**

* Lab exercise

1. **Week 3(B): IT Infrastructure and Emerging Technologies**

**Learning Outcomes:**

By the end of this week students will be expected to:

1. Describe global e-business and collaboration
2. Define information technology (IT) infrastructure, and its components.
3. State the stages and technology drivers of IT infrastructure evolution
4. Define the current trends in computer hardware platforms.
5. Discuss the current trends in software platforms.
6. Discuss the challenges of managing IT infrastructure and management solutions.

**Discussion Topics:**

* + Case study on IT Infrastructure

**Class Activities:**

* Lab exercise

1. **Week 4(A): Foundations of Business Intelligence: Databases and Information Management.**

**Learning Outcomes:**

By the end of this week students will be expected to:

1. Discuss the problems of managing data resources in a traditional file environment, and how they are solved by a database management system.
2. Identify the major capabilities of database management systems (DBMS), and why a relational DBMS is so powerful.
3. State some important principles of database design.
4. Define the principal tools and technologies for accessing information from databases to improve business performance and decision making.
5. Discuss why information policy, data administration, and data quality assurance are essential for managing the firm’s data resources.

**Discussion Topics:**

* + Case study on Information Management

**Class Activities:**

* Lab exercise
* **ASSIGNMENT I**

1. **Week 4(B): Telecommunications, the Internet and Wireless Technology**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Describe the principal components of telecommunications networks and key networking technologies.
* Explain the main telecommunications transmission media and types of networks.
* Discuss how the Internet and Internet technology work, and how they support communication and electronic business (e-business).
* State the principal technologies and standards for wireless networking, communication, and Internet access.
* State why radio frequency identification (RFID) and wireless sensor networks are valuable for business.

**Discussion Topics:**

* + Case study on Technology Titans

**Class Activities:**

* Lab exercise

1. **Week 5(A): Securing Information Systems**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Discuss vulnerability of information systems to destruction, error, and abuse.
* Describe the business value of security and control.
* Discuss the components of an organizational framework for security and control.
* Define the most important tools and technologies for safeguarding information resources.

**Discussion Topics:**

* + Case study on Data Theft

**Class Activities:**

* **Assessed Lab Exercise**

1. **Week 5(B): QUIZ I & Achieving Operational Excellence and Customer Intimacy: Enterprise Applications**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Describe how enterprise systems help businesses achieve operational excellence.
* Discuss how supply chain management systems coordinate planning, production, and logistics with suppliers.
* Explain how customer relationship management systems help firms achieve customer intimacy.
* Define what challenges are posed by enterprise applications.
* State how enterprise applications are used in platforms for new cross-functional services.

**Discussion Topics:**

* + Case study on Global Supply Chains

**Class Activities:**

* Lab exercise

1. **Week 6(A): E-commerce: Digital Markets and Digital Goods**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Define the unique features of electronic commerce (e-commerce), digital markets, and digital goods.
* State the principal e-commerce business and revenue models.
* Discuss how e-commerce has transformed marketing and affected business-to-business (B2B) transactions.
* State the role of mobile commerce in business, and the most important m-commerce applications.
* Explain what issues must be addressed when building an e-commerce Web site.

**Discussion Topics:**

* + Case study on Digital Markets

**Class Activities:**

* Lab exercise

1. **Week 6(B): Mid Semester Examination Prep Session**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Have an understanding of topics covered do far in preparation for the mid-sem examination.

**Discussion Topics:**

* + Highlights of topics covered do far

**Class Activities:**

* Glossary, Flashcards, Quizzes

1. **Week 7: MID-SEM EXAM**
2. **Week 8(A): Managing Knowledge**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Define the role of knowledge management and knowledge management programs in business.
* Explain the types of systems used for enterprise-wide knowledge management, and how do they provide value for businesses.
* Describe the major types of knowledge work systems, and how they provide value for firms.
* State the business benefits of using intelligent techniques for knowledge management.

**Discussion Topics:**

* + Case study on Knowledge Management

**Class Activities:**

* Lab exercise

1. **Week 8(B): Enhancing Decision Making**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Define the different types of decisions and how the decision-making process works.
* State how information systems support the activities of managers and management decision making.
* Describe how business intelligence and business analytics support decision making.
* State how different decision-making constituencies in an organization use business intelligence.
* Define the role of information systems in helping people working in a group make decisions more efficiently.

**Discussion Topics:**

* + Case study on Decision Support Systems

**Class Activities:**

* Lab exercise

1. **Week 9(A): Building Information Systems**

**Learning Outcomes:**

By the end of this week students will be expected to:

* State how developing new systems produce organizational change.
* Describe what the core activities in the systems development process.
* State the principal methodologies for modelling and designing systems.
* Define the alternative methods for developing information systems.
* Define the new approaches for system development in the digital firm era.

**Discussion Topics:**

* + Case study on Information Systems

**Class Activities:**

* **Assessed Lab Exercise**

1. **Week 9(B): Managing Projects**

**Learning Outcomes:**

By the end of this week students will be expected to:

* State the objectives of project management, and why it is so essential in developing information systems.
* Describe methods that can be used for selecting and evaluating information systems projects and aligning them with the firm’s business goals.
* Discuss how firms can assess the business value of information systems projects.
* Describe the principal risk factors in information systems projects.
* Define strategies that are useful for managing project risk and system implementation.

**Discussion Topics:**

* + Case study on Information Systems

**Class Activities:**

* Lab exercise

1. **Week 10(A): Managing Global Systems**

**Learning Outcomes:**

By the end of this week students will be expected to:

* Discuss major factors that are driving the internationalization of business.
* State alternative strategies for developing global businesses.
* Describe how information systems can support different global business strategies.
* Discuss the challenges posed by global information systems and management solutions for these challenges.
* Describe the issues and technical alternatives to be considered when developing international information systems.

**Discussion Topics:**

* + Case study on Global Systems

**Class Activities:**

* **ASSIGNMENT II**

1. **Week 10(B): Group Project (Case Study) Discussion & Allocations**

**Discussion Topics:**

* + Case study discussion

**Class Activities:**

* Individual and Group discussion on expectations.

1. **Week 11: Group Project Progress Discussion**

**Discussion Topics:**

* + Case study discussion

**Class Activities:**

* Individual and Group discussion on expectations

1. **Week 12: QUIZ II & Group Project Presentations**

**Discussion Topics:**

* + Case study report individual/group presentations

**Class Activities:**

* Individual and Group presentations

1. **Week 13: Group Project Presentations & Final Exam Preparations**

**Discussion Topics:**

* + Case study report individual/group presentations
  + Overview of topics covered in preparation for final exam.

**Class Activities:**

* Discussion of glossary, flashcards, self-study quizzes and notes.

1. **Week 14: FINAL EXAMINATION**

**5. Teaching and Learning Methodologies**

Lectures, delivery through Blackboard e-learning platform, presentations by members of the class, case study discussions, tutorials, assignments, quizzes, group work, practical sessions, library, appropriate software, manual/notes. Throughout the course, skills will be developed through a combination of theoretical discussions, practical laboratory-based work, classroom based tutorial exercises and directed self-study. The general teaching/learning method is to impart these practical skills by a process of moving from an overview of what is required to a specific application of an individual skill at a higher level. Specific skills are consolidated thorough practical work. Specifically the following will augment learning:

* By carrying out a supervised mini project and presenting a report
* By lab based practical work relevant to the technology area covered in course
* By participating in case studies, ensuing classroom discussion and presentations
* By carrying out assignments requiring independent research and self-study and learning from the feedback provided by the instructor.

Weekly lecture/discussion. Lectures will be used to present and highlight the major concepts and issues in IT applications. Additional detail is provided in the Blackboard notes, readings, and other indicated sources. Where feasible and appropriate, the lecture slot may also be used for group discussion around presented themes or readings.

Students discuss concepts and themes in IT applications in some seminar sessions, and report back on their own investigations into application domains of interest to them. Where feasible, at least some of the investigation and reporting on application domains will be conducted in groups.

**6. KEY INSTITUTIONAL ACADEMIC POLICIES**

Students should note the following are key policies as outlined in the University Catalogue and Students Handbook

***1. Academic dishonesty***

a. Any intentional giving or use of external assistance during an examination without the express permission of the faculty member giving the examination.

b. **Fabrication: a**ny falsification or invention of data, citation or other authority in an academic exercise;

c. **Plagiarism: a**ny passing off of another's ideas, words, or work as one's own;

d. **Previously Submitted Work:** presenting work prepared for and submitted to another course;

***2. Class Attendance***

Students are expected to attend all classes. Upon being absent from **four** classes in a 3 unit course, the instructor will give a student an **“F”** grade for that course.

**7. COURSE TEXT AND OTHER READINGS**

**Course Text:**

* Laudon, K.C., Laudon, J.P. (2012). *Management Information Systems.* 12th Edition, Upper Saddle River, New Jersey: Prentice Hall.
* Brown, C.V., DeHayes, D.W., Hoffer J.A., Martin W.E., Perkins W.C. (2012). *Managing Information Technology:* International Edition, 7th Edition, Upper Saddle River, New Jersey: Pearson Higher Education.

**Recommended Reading:**

* \*Schiesser, R., (2010). *IT Systems Management.* 2nd Edition, Upper Saddle River, New Jersey: Prentice Hall.
* Bocij, P., Greasley A., Hickie S. (2009). *Business Information Systems: Technology, Development and Management for the E-Business.* 4th Edition, Upper Saddle River, New Jersey: Financial Times Press.
* \*Kroenke, D., (2012). *MIS Essentials:* International Version. 2nd Edition, Upper Saddle River, New Jersey: Pearson Higher Education.
* McLeod, R., Schell, G. (2007). *Management Information Systems.* 10th Edition, Upper Saddle River, New Jersey: Prentice Hall.
* Course text, Handouts, White board, Presentation slides, Blackboard e-learning platform, Journals, CASE tool/ SDK;

**Recommended Journals**

* International Journal of Information and Communication Technology –<http://www.inderscience.com/jhome.php?jcode=ijict>
* Journal of Advances in Information Technology –

<http://academypublisher.com/jait/>

* The Journal of Strategic Information Systems – <http://www.sciencedirect.com/science/journal/09638687>
* Journal of Management Information Systems (JMIS) –

<http://www.jmis-web.org/>

* The Journal of Strategic Information Systems –

<http://www.journals.elsevier.com/the-journal-of-strategic-information-systems/>

**8. COURSE EVALUATION**

Attendance 5%

Laboratory Work 10%

Quizzes 10%

Project 15%

Assignments 10%

Mid-semester exam 20%

Final semester exam 30%

**Total 100%**

**Grading**

Letter grading for distribution of marks is as follows:

