**COMPUTER SCIENCE AND INFORMATION SYSTEMS DEPARTMENT**

**BSc MANAGEMENT INFORMATION SYSTEMS**

2025/2026

**Semester** **1** (*4 credit hours*)

**Course Code & Name: CS442**: **ELECTRONIC COMMERCE**

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| **INSTRUCTOR(S)** | **FACULTY INTERN(S)** |
| **Section A & B Instructor:** Joseph Kwame Adjei  *Email*: [jadjei@ashesi.edu.gh](mailto:jadjei@ashesi.edu.gh)  *Office hours:* Tuesday, 12:00 pm – 2:00 pm, or by appointment on Zoom | **Section A & B Faculty Intern: Elikem Asudo Gale-Zoyiku**  *Email*: [egale-zoyiku@ashesi.edu.gh](mailto:egale-zoyiku@ashesi.edu.gh)  *Office hours:* Thursday 3:00 pm – 4:30 pm, or by appointment on Zoom/in-person |

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| **MEETING TIMES AND LOCATION** |
| *Lectures: Mondays and Wednesdays: 15:00 pm – 16:30 pm* @ Jackson Lab 221  Lab / Discussion: Thursday: 9:45 am – 11:15 am @ Jackson Lab 221 |
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| **COURSE DESCRIPTION** |
| This course examines the core concepts and principles underlying electronic commerce, highlighting the technologies that enable the design and implementation of effective e-commerce systems. Students will analyze the strategic, organizational, and technical dimensions of e-commerce models, exploring the requirements for building scalable, secure, and sustainable digital platforms. Key issues like system integration, cybersecurity, regulatory compliance, and ethical and social implications of digital transactions are also discussed. In addition, attention is devoted to digital marketing and revenue models, enabling students to evaluate how value is created and captured in online markets.  The transformative role of Artificial Intelligence (AI) and how it is shaping contemporary e-commerce ecosystems is a central theme of the course. Students will critically examine applications such as recommendation systems, intelligent agents, fraud detection, and predictive analytics, and evaluate how these innovations affect consumer behavior, organizational processes, and competitive dynamics. Students will examine the application of generative AI for content creation, customer engagement, and systems prototyping, opportunities for innovation and risks associated with bias, trust, and governance. Through hands-on projects, students will acquire the technical and analytical competencies required to design, implement, and evaluate AI-enabled e-commerce systems. |

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| ***Required of*** *Management Information Systems Majors* | **Prerequisite(s):** Database and Web Technologies. |

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| **STUDENT LEARNING OBJECTIVES** |
| This course will equip students with the knowledge and skills to:   1. Analyse the business environment and recommend effective digital solutions, considering cost implications, and resource and infrastructural requirements. 2. Craft an effective electronic business strategy that clearly demonstrates the business model taking into consideration organisational and environmental factors. 3. Develop a secure digital platform to exploit business opportunities using best practices. 4. Manage digital business, taking advantage of emerging technologies. 5. Recommend appropriate infrastructure and technology options for setting up an e-commerce platform and deployment options. 6. Evaluate the legal, ethical, security and global issues in electronic commerce and measures to mitigate such risks. |
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| **ASHESI LEARNING GOALS ADRESSED IN THIS COURSE: PROGRAM OBJECTIVES** |
| 1. **Ethics and Civic Engagement:** *An Ashesi student is an ethical, responsible and engaged member of his/her community*. You are expected to maintain a high academic and ethical standard, as described in the “Expectations” section below. 2. **Critical Thinking and Quantitative Reasoning**: *An Ashesi student is able to apply critical thinking and quantitative reasoning to approach complex problems.* This course involves problem-solving with computers. You will develop the ability to analyse simple but relevant problems, design simple algorithms to solve them, and implement these algorithms (using the Python Programming Language). 3. **Communication**: *An Ashesi student is an excellent communicator in a variety of forms*. This course requires writing about and/or presenting project work. 4. **Leadership and Teamwork**: *An Ashesi student is adept at leading and functioning in teams.* This course requires you to work in a team in class and for the final project. 5. **Curious and Skilled**: *An Ashesi student is inquisitive and confident, has breadth of knowledge, and has attained a high level of mastery in their chosen field.* This course aims to build your knowledge with respect to the role of computers and information systems in our complex world, as well as develop skills in foundational programming concepts. 6. **Technology Competence**: *An Ashesi student is an effective and flexible user of technology*. You will become familiar with business information systems and programming basics, which is an aspect of technological competence. |

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| **COURSE OBJECTIVES & TOPICS** |
| This course will cover the following topics:   * Introduction to Electronic Commerce * E-Commerce Business Models and Concepts * Disruptive Innovation * Technology Infrastructure for E-Commerce * Building E-Commerce Presence: * Digital Business Strategy * E-commerce Security and Payment Systems * Digital Marketing for E-Commerce * E-Commerce Logistics and Supply Chain Management * Ethical, Social and Regulatory Issues in E-Commerce * E-Commerce Analytics and Performance Measurement * Emerging Issues and Trends in E-Commerce |
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| **PRIMARY TEXTBOOKS/SUPPLEMENTARY READINGS & MATERIALS** |
| **Primary Readings:**   * Laudon, KC & Traver, CG (2023) E-Commerce: Business, Technology, Society. 17th Edition. Pearson Education. * Chaffey, D., Edmundson-Bird, D., & Hemphill, T. (2019). Digital Business and E-Commerce Management. 7th Edition, Pearson Education, UK.  **Supplementary Texts**  * Nixon, R. (2021). Learning PHP, MySQL & JavaScript. " O'Reilly Media, Inc.". * Web Database Applications with PHP & MySQL by David Lane, Hugh E. Williams – library * Online tutorials on web technologies: https://www.w3schools.com/.  **Other Materials****Websites**  * Cases, short videos, internet resources, and journal articles will serve as additional resources.   Video Resources |
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| **COURSE STRUCTURE, ASSESSMENTS, & ACTIVITIES** |
| **Expectations:**  The instructor is committed to helping you to be successful in this course. In return, there are some fundamental expectations of you.  *Preparation and Participation*  Your active participation enriches the course experience for everyone. This includes completing the required reading and class preparation assignments, participating in discussions, and even sharing interesting things about robotics that you learn on your own. Students are required to come to class, and to arrive on time. A record of poor or chronically late attendance could, at the end of the semester, result in a penalty against your course grade. Students are also expected to check your email, Canvas and digital platforms every day so as not to miss essential information. Please bring your name tents to every class.  *Academic honesty*  You are expected to keep in mind at all times that, “An Ashesi student is an ethical responsible and engaged member of his/her community”. The work in this course is designed to help you develop skills essential to your future career success. You can only develop these skills if you do the work yourself. All the work that you turn in *must* be your own. For a team assignment, you and your team member(s) will hand in one assignment and the work submitted must have been done by the members of that team. Written work must properly cite any sources used. Furthermore, if you use code from any source, you must include an appropriate citation in a comment above the code segment copied.  *Professionalism*  You are expected to interact with your course colleagues, as well as the instructor and teaching assistant in a professional and polite manner at all times.  **Teaching and Learning Activities**  *Lectures, Discussions, and Reading*  Content will be conveyed in a series of interactive lectures and discussions throughout the semester. All students are responsible for the required reading, which should be done as scheduled. There will be periodic quizzes on the required reading and lecture. Various rules governing responsible use of AI will be discussed every week.  *Labs & Self-Paced Learning Checks*  The labs are an opportunity to apply and reinforce understanding of the concepts learned. They will comprise both theoretical work and practical application of the concepts using various tools. Through the labs, students will build the skills needed in their final and mid-semester project. Throughout the course, students will be given learning assignments that they would have to complete and will be evaluated by self-paced learning checks.  *Final Assessment*  The course culminates in a substantial project, proposed and executed in teams and a final exam |

**COURSE ELEMENTS, ASSESSMENT, AND GRADING:**

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| **EVALUATIVE CRITERIA** | | | | |
| Assignments are due on the dates listed, by 11:59 p.m. prompt in CANVAS.  **Late Policy**  All coursework is due as stated. For the **labs**, there will be a 10% penalty for each day past the deadline. There will be no make-up quizzes. In cases of ill health affecting tests or other assessments, affected students are expected to notify the instructor at the earliest possible opportunity and provide the appropriate supporting documentation. | | | | |
| **Type** | **Dates** | **Description** | **Points** | **% of Total** |
| Performance Attendance/  Participation **PAP** | Ongoing | Ashesi Learning Goals: Professionalism (attendance, no tardiness, respectful manner), teamwork, ethical and civil behavior, leadership | 5 | 5% |
| Cognitive Participation **CP** | Ongoing | Ashesi Learning Goals: Curiosity, innovation, communication, critical thinking, quantitative reasoning, technological competence | 5 | 5% |
| Labs/Assignments | Due Dates:  As indicated on the schedule | Lab problems/Assignments and self-paced learning checks | 10 | 10% |
| Group Project  (Three Mini-Projects) | Ongoing | Ashesi Learning Goals: Leadership and Teamwork: An Ashesi student is adept at leading and functioning in teams. This course requires you to work in a team in class and for the final project. | 15 | 15 |
| Mid-Semester Assessment | Week 7 | Theory & Practical | 15 | 15% |
| Quizzes | Every other week | Theory & Practical | 10 | 10% |
| Final Assessment | Week 14 – 15 | Individual Project | 40 | 40% |
| Total: | | | 100 | 100% |

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| **CLASS ATTENDANCE & LATENESS POLICY** |
| **Being present** in class and **attentive** is the most fundamental expectation of you at Ashesi. You are expected to attend every class you have enrolled in for the semester and to **use your name tent.** Any absence is recorded and questioned. If you miss an accumulated equivalent of three weeks of class this semester, you will earn a failing grade for the class. If the absence is due to a proven illness or emergency, you may seek an Incomplete grade through the Dean of Students’ Office, i.e., if the Dean of Students or a member of his office confirms your extenuating circumstances.  Keep in mind: Ashesi has a 5-minute rule where you are marked tardy when you arrive more than 5 minutes late for class. If you persistently come late, it would be the equivalent of being absent and you will be marked absent.  Note: When you are 5 minutes early you are on time. |

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| **CLASS PARTICIPATION: PERFORMANCE AND COGNITIVE PARTICIPATION** |
| In the era of Generative AI, it is imperative we try to measure true student learning. In-class participation is one such approach. Faculty, and in particular Faculty Interns, will measure and score students’ participation. A copy of the participation tool, that measures both your performance and your cognitive participation will be or has been sent to you. Each week the completed form will be submitted to the Project Officer in the Stephen Adei Studio and your average score will be recorded. Your average cognitive participation score will be accessible to you in CANVAS. The cognitive participation scores will form 5-10% of your overall course score. |
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| **UNIVERSITY RESOURCES** |
| The university has many student support and academic services that students are encouraged to take advantage of as needed. These include the Writing Centre, Academic Mentoring (acofie@ashesi.edu.gh), and Counselling services (24/7 hotline at 0501569909). |
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| **ARTIFICIAL INTELLIGENCE (AI) POLICY** |
| The use of AI can add valuable experiences in real life. We can benefit from a wide range of sample data and problem-solving. We can take advantage of these models to improve our learning skills and knowledge. AI tools can help us to personalize our learning experiences by adapting to the individual’s needs. For example, ChatGPT opened a new way to find answers to our questions. It also can assist us in programming. It can be one of the tools that can empower you to write larger and more powerful software. But it also raises concerns about integrity, privacy, biases, and much more. The potential drawbacks are that it can hinder the ability to develop foundational programming skills, deter the ability to develop problem-solving skills, limit creativity, reduce learning engagement, and lead to legal and ethical issues. Therefore, you may use AI models (such as ChatGPT) to help study and understand class materials, but you are not allowed to use them for your assignments, projects, and quizzes. You may not put assignment prompts into generative AI tools, and you may not submit any AI-generated work for grading. Violations of these guidelines will be considered as academic integrity violation and plagiarism. |
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**TENTATIVE SCHEDULE OF SESSIONS AND TOPICS**

Note that the schedule is subject to change and any updates will be posted on Canvas.

| **Week** | **Theme** | **Monday** | **Wednesday** | **Thursday (Lab)** | **Tasks & Reading(s)** |
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| Week 1  08/09/25 | * Introduction to Electronic Commerce | * Introduction to Electronic Commerce | * Introduction to Electronic Commerce | * Web Tech & database revision * Setup development environment * MVC project architecture | * Introduction of Final Project * Quiz 1 * Chapter 1, Laudon & Traver |
| Week 2  15/09/25 | E-Commerce Business Models and Concepts | * Business Models | * Disruptive Innovation | * Setting up Authentication & Authorization | * Assignment 1 * Chapter 2, Laudon & Traver |
| Week 3 | Technology Infrastructure for E-Commerce | * Internet architecture and how it supports e-commerce | * E-commerce software platforms | * Inventory/Product/ Service catalogue management | * Submission of E-Commerce Idea and business model * Quiz 2 * Chapter 3, Laudon & Traver |
| Week 4 | Building E-Commerce Presence: | * Platforms, hosting, and domain names * Designing for user experience (UX) | * Integrating e-commerce features: | * Product/Service display, search and filtering | * Group Assignment - Case 1 * Chapter 4, Laudon & Traver |
| Week 5 | Digital Business Strategy | * Developing E-Commerce Strategy/Business Plan | * Developing E-Commerce Strategy/Business Plan | * Shopping cart management * Customer order management | * Quiz 3 * Group Project – Case 2 * Chapter 2, Laudon & Traver * Chapters 4 & 5, Chaffey |
| Week 6 | Ecommerce Security and Payment Systems | * Securing E-Commerce Platforms * Fraud prevention Strategies | * Online payment methods * Securing payment gateways | * Payment processing * Discount, coupon, tax system management | * Practitioner Session * Chapters 5, Laudon and Traver |
| Week 7 | Digital Marketing for E-Commerce | * Search engine optimization * Mobile & Social media marketing * Customer acquisition and Retention Strategies: | * **Mid-Semester Exams** | * Invoice management. * Emails |  |
| Week 8 | **Mid Semester Break** | | | | |
| Week 9 | E-Commerce Logistics and Supply Chain Management | * Order fulfillment * Inventory Mgmt Systems | * Product/Service Delivery challenges and solutions * Just-in-time (JIT) models | * Hosting application |  |
| Week 10 | Ethical, Social and Regulatory Issues in E-Commerce | * Ethical considerations * Information Privacy Issues | * Intellectual property rights * Taxation Issues | * Product/Service recommendation * CRM system\*[[1]](#footnote-1) |  |
| Week 11 | E-Commerce Analytics and Performance Measurement | * KPIs for e-commerce success | * Tracking customer behavior | * Security: SQL injection, CSRF, DDoS attack, etc. |  |
| Week 12 | Global Issues and Emerging Trends in E-Commerce | * AI and E-commerce | * Cultural Barriers * Foreign Exchange Risk * Sustainability Issues | * Labs, Team, and Final Receipts and Emails |  |
| Week 13 |  |  |  |  |  |
| Week 14 - 15 | **End of Semester Exams** | | | |  |

1. *This topic will not be covered in class. Bonus marks will be awarded to students who are able to implement CRM systems in their e-commerce platform* [↑](#footnote-ref-1)