National University of Engineering (UNI)
School of Artificial Intelligence
Syllabus 2027-I

1. COURSE

CS393. Information systems (Elective)

2. GENERAL INFORMATION

2.1 Course	:	CS393. Information systems
2.2 Semester	:	10th Semester.
2.3 Credits	:	3
2.4 Hours	:	2 HT; 2 HP;
2.5 Duration of the period	:	16 weeks
2.6 Type of course	:	Elective
2.7 Learning modality	:	Face to face
2.8 Prerrequisites	:	CS291. Software Engineering I. (5th Sem)

3. PROFESSORS

Meetings after coordination with the professor

4. INTRODUCTION TO THE COURSE

This course provides a comprehensive overview of how information systems support business processes and decision-making within organizations. It covers the strategic role of information technology, the lifecycle of information systems, data management strategies, and the integration of enterprise applications to achieve competitive advantages in a globalized digital economy.

5. GOALS

- Understand the fundamental components and types of Information Systems.
- Analyze the role of IS in organizational strategy and decision-making.
- Evaluate emerging technologies and their impact on business models.

6. COMPETENCES

AG-C03) Individual and Team Work: Performs effectively as an individual and as a member or leader in diverse teams. (Usage)

AG-C09) Design and Development of Solutions: Designs, implements, and evaluates solutions for complex computing problems. (Usage)

7. TOPICS

Unit 1: Foundations of Information Systems (12 hours)	
Competences Expected: AG-C03,AG-C09	
Topics	**Learning Outcomes**
• Components of Information Systems: Hardware, Software, Data, Networks. • Types of IS: TPS, MIS, DSS, and ESS. • Competitive advantage through Information Technology. • Business processes and Information Systems integration.	• Identify the core components of an information system [Familiarizarse]. • Explain how IS supports various levels of organizational hierarchy [Usar]. • Analyze a business case to identify strategic uses of IT [Evaluar].
Readings : [**Laudon2021**], [**Stair2017**]	

Unit 2: Data Management and Business Intelligence (12 hours)	
Competences Expected: AG-C03,AG-C09	
Topics	**Learning Outcomes**
• Database management systems and data warehousing. • Big Data analytics in a business context. • Business Intelligence (BI) and Data Visualization tools. • Knowledge Management Systems.	• Design a basic data architecture for a business requirement [Usar]. • Evaluate the importance of data quality and governance [Evaluar].
Readings : [**Laudon2021**], [**Valacich2021**]	

Unit 3: Enterprise Systems and E-Commerce (12 hours)	
Competences Expected: AG-C03,AG-C09	
Topics	**Learning Outcomes**
• Enterprise Resource Planning (ERP) systems. • Supply Chain Management (SCM) and Customer Relationship Management (CRM). • E-commerce models: B2B, B2C, and C2C. • Mobile commerce and digital payment systems.	• Describe the functional areas of an ERP system [Familiarizarse]. • Assess the impact of e-commerce on traditional business models [Evaluar].
Readings : [**Stair2017**], [**Valacich2021**]	

Unit 4: IS Development and Security (12 hours)	
Competences Expected: AG-C03,AG-C09	
Topics	**Learning Outcomes**
• Systems Development Life Cycle (SDLC) and Agile methodologies. • Outsourcing and cloud-based IS services. • Information security threats and risk management. • Ethical and social issues in Information Systems.	• Compare different system development methodologies [Usar]. • Formulate ethical guidelines for data privacy and security [Evaluar].
Readings : [**Laudon2021**], [**Stair2017**]	

8. WORKPLAN

8.1 Methodology

Individual and team participation is encouraged to present their ideas, motivating them with additional points in the different stages of the course evaluation.

8.2 Theory Sessions

The theory sessions are held in master classes with activities including active learning and roleplay to allow students to internalize the concepts.

8.3 Practical Sessions

The practical sessions are held in class where a series of exercises and/or practical concepts are developed through problem solving, problem solving, specific exercises and/or in application contexts.

9. EVALUATION SYSTEM

********* EVALUATION MISSING ********

10. BASIC BIBLIOGRAPHY