



University of Puerto Rico
 Mayagüez Campus
 College of Engineering
 Department of Industrial Engineering
 Bachelor of Science in Industrial Engineering



COURSE SYLLABUS

COURSE TITLE:	Computer-Based Information Systems
ALPHA-NUMERIC CODIFICATION:	ININ 4017
NUMBER OF CREDITS-CONTACT HOURS:	Three credits / 45 hours
PREREQUISITES, COREQUISITES AND OTHER REQUIREMENTS:	INGE 3016 or CIIC 3011 or CIIC 3015
COURSE DESCRIPTION: Analysis and design of computer-based information systems; database logical and physical models; database language; user interface; Internet; common applications to industrial engineering.	
Spanish: Análisis y diseño de sistemas de información basados en computadoras; modelos lógicos y físicos de base de datos; lenguajes de base de datos interfaz con el usuario; internet; aplicaciones típicas a la ingeniería Industrial.	
English: Analysis and design of computer-based information systems; database logical and physical models; database languages; user interface; internet; common applications to Industrial Engineering.	
COURSE OBJECTIVES:	
At the completion of the course the student will be able to: <ul style="list-style-type: none"> ▪ Design, implement, and use computer-based information systems to solve problems related to the manipulation, storage and presentation of information ▪ Identify issues related to information privacy and the impact of information technology in the companies and people in the contemporary environment of global accessibility ▪ Use computer, programming languages, and special applications in the creation of computer-based information systems ▪ Understand that information technology is rapidly changing and the need to be aware of new advances in the area. 	
TEXTBOOK: Kroenke, D.M. & Auer, D.J., Database Processing: Fundamentals, Design, and Implementation , 15th Edition, Pearson Education Inc., 2018	
Course time frame and thematic outline:	
	TIME DISTRIBUTION
Theme	Face-to-Face
<ul style="list-style-type: none"> • Introduction to data, information and computer-based information systems 	2

• Introduction to database processing and using an RDBMS	5
• Introduction to Structured Query Language (SQL)	2
• The Relational Database Model	5
• Normalization of Database Tables	3
• Entity Relationship (ER) Modeling	5
• Relational Database Design	3
• Advanced Topics in SQL	3
• Application Development	7
• Internet Databases	5
• Database Administration	2
• Examinations	3
Total contact hours	45 hours

INSTRUCTIONAL STRATEGIES:

Face-to-Face

- ♦ Conferences
- ♦ Lectures
- ♦ Team work
- ♦ Individual tasks
- ♦ Assessment activities
- ♦ Practice activities
- ♦ Oral presentations

MINIMUM OR REQUIRED RESOURCES AVAILABLE:

RESOURCE	FACE-TO-FACE
Institutional learning management platform account (Ex. Moodle) (Cuenta en la plataforma institucional de gestión de aprendizaje) (Ej. Moodle)	Institution
Institutional email account	Institution
Computer with high-speed internet access or mobile device with data service	Student
Programs or applications: word processor, spreadsheets, MySQL, MS Access	Student
Built-in or external speakers	Not applicable
Webcam or mobile with camera and microphone	Not applicable

EVALUATION STRATEGIES:

FACE to FACE

Homework, quizzes, attendance, and participation: 0-20%
 Participation in collaborative presentations: 0-15%
 Case studies and applied project: 10-35%
 Partial exams: 40-60%
 Final exam: 15-30%

REASONABLE ACCOMMODATIONS:

The University of Puerto Rico at Mayagüez (RUM) recognizes that each student has an inherited right to request reasonable accommodation according to Law 51: Law for Integral Educational Services for People with Disabilities. Every student has the right to receive reasonable accommodation if he/she presents the necessary evidence to be evaluated by the Office of Services to Students with Disabilities (OSEI-RUM), and the related information can be found at the following link: <https://www.uprm.edu/cms/index.php/page/85>. If your case is approved by OSEI-RUM, you will receive reasonable accommodation in your courses and evaluation, and you must contact each professor for course registered. For additional information contact OSEI-RUM at Sánchez Hidalgo 410 or via telephone 787-832-4040 extension 3107.

ACADEMIC INTEGRITY:

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Student General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person's answers to the questions of an oral or written exam by taking or having someone else take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure established by the UPR Student General Bylaws.—

To ensure the integrity and security of user data, all hybrid, distance and online courses must be offered through the institutional learning management platform, which uses secure connection and authentication protocols. The system authenticates the identity of the user (student and professor) using the username and password assigned by the institution. The users are responsible for keeping their password safe, protected, and not to share it with other people.

POLICY AGAINST DISCRIMINATION BASED ON SEX, SEXUAL ORIENTATION, AND GENDER IDENTITY:

«The University of Puerto Rico prohibits discrimination based on sex, sexual orientation, and gender identity in any of its forms, including that of sexual harassment. According to the Institutional Policy Against Sexual Harassment at the University of Puerto Rico, Certification 130 (2014-2015) from the Board of Governors, any student subjected to acts constituting sexual harassment, may turn to the Office of the Student Ombudsperson, the Office of the Dean of Students, or the Coordinator of the Office of Compliance with Title IX for an orientation or formal complaint».

GRADING SYSTEM

X Quantifiable (letters, A, B, C, D, F) Not Quantifiable

CONTINGENCY PLAN IN CASE OF AN EMERGENCY

In case of an emergency or class interruption, the professor can apply Bylaw 19-85 of the UPRM. This bylaw states that up to 25% of a class can be offered online.

BIBLIOGRAPHY

1. Kroenke, D.M. & Auer, D.J., Database Processing: Fundamentals, Design, and Implementation, 15th Edition, Pearson Education Inc., 2018 (Textbook)
2. Coronel, C. & Morris, S., Database Systems: Design, Implementation and Management, 13th Edition, Cengage Learning, 2019
3. Hernandez, Michael. *Database Design for Mere Mortals: 25th Anniversary Edition*. 4th ed., Addison-Wesley Professional, 2020.
4. Beaulieu, Alan. *Learning SQL: Generate, Manipulate, and Retrieve Data*. 3rd ed., O'Reilly Media, 2020.
5. Khan Academy. *Intro to SQL: Querying and Managing Data*.
<https://www.khanacademy.org/computing/computer-programming/sql>