Course Syllabus For Operations Management and Management Information Systems Department

School Year	Name of course
First Year	Mathematics / 1 /
First Year	Applied information in management
First Year	Statistics and Probability
Second year	Applied Mathematic in management
Second year	Programming principles
Second year	Statistical applications for Administration
Third year	Databases
Third year	Business Games and Simulation
Third year	Methods of Scientific Research and Data Analysis
Third year	Operation research
Third year	Supply Chain Management
Fourth year	Data analysis
Fourth year	Methodologies for analysis and design of information systems
Fourth year	E-Commerce and E-Business
Fourth year	Advanced programming languages
Fourth year	Management Information Systems
Fourth year	Networks and Information Security
Fourth year	Decision Theory
Fourth year	Project Management
Fifth year	The administrative management of automation projects
Fifth year	Software Engineering
Fifth year	Advanced Database Management Systems
Fifth year	Decision support systems and expert systems.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Mathematics / 1 /
Academic Year :	First Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	The course aims to define the most important to the basic of mathematics and to configure the background capable of dealing with administration field.

Course's contents:

- ❖ General concepts
- ❖ Real numbers (the geometric representation of numbers)
- ❖ functions
- ❖ Maximum and minimum value of function
- ❖ Linear and non – linear functions
- ❖ Limits
- ❖ Disciples Limited
- ❖ Numerical sequences
- ❖ The end of the sequences
- ❖ The end of the series
- ❖ Derivatives
- ❖ Derivation applications in calculate of optimal solutions

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Applied information in management
Academic Year :	First Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	The course aims to define the electronic tables MS Excel and MS access and its applications in management.

Course's contents:

- ❖ The Electronic tables MS Excel
  - ✓ The structure of MS Excel
  - ✓ Addressing in MS Excel
  - ✓ Functions in MS Excel
  - ✓ The principals of tables
  - ✓ Pivot tables
  - ✓ Graphic diagrams
- ❖ Accountant application in Excel
- ❖ MS Access
- ❖ Web design

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Statistics and Probability
Academic Year :	First Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to define the most important basics of statistics and probability to dealing with any field.

Course's contents:

- Introduction
- Measures of Central Tendency
- Measures of Dispersion
- Measuring Inequality
- Probabilities and its Applications
- Probability Laws
- Probability Distributions

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Applied Mathematic in management
Academic Year :	Second Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to matrices and its main operations and how to use them in solving linear equations . as well to introduce the principles of financial math.

Course's contents:

- ❖ Reminding with Matrices and Determinants
    - Matrix definition
    - Shapes
    - Operations applied on matrices
    - Determinants
    - The matrix solution for inter linear equations
- ❖ Financial Mathematics
    - Interests
        - ✓ Simple Interests
        - ✓ Compound Interests
    - Resolve and replace bonds
        - ✓ Resolve and replace bonds in simple Interests
        - ✓ Resolve and replace bonds in compound Interests
    - Equal periodic payments
        - ✓ The sum of equal periodic payments in simple Interests
        - ✓ The sum of equal periodic payments in complex Interests
    - Loans consumptions
        - ✓ Loans consumptions in simple Interests
        - ✓ Loans consumptions payments in complex Interests

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Programming principles
Academic Year :	Second Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the principals of programming for algorithms and the defining variables, orders , loops, and basic functions.

Course's contents:

- Introduction about the programming languages
- The principles of Algorithm
- Introduction in programming structure
- Using C# language, and how to use it in producing a program on a computer machine
- The progressive education for the language with its principles, order, and functions

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Statistical applications for Administration
Academic Year :	Second Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to define the statistical analysis methods and its applications in management.

Course's contents:

- Statistical Concepts Foundation
- Correlation Analysis
- Regression Analysis
- Testing the Hypothesis
- Time Series

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Databases
Academic Year :	Third year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to databases and their role in the development of management information systems, as well as to provide the student with the skills of design and management of relational databases and the use of and (SQL) language retrieval of data to be able to implement a practical application for the development of databases in the field of business management.

Course's contents:

- Definition databases.
- Databases and applications in Excel
- Access database.
- The design of relational databases.
- Tables.
- Data types.
- Relationships.
- Querying data.
- Forms and reports.
- The structural query language (SQL)
- SQL-Server.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Business Games and Simulation
Academic Year :	Third year
Number of hours :	4 application
Course's Goal :	This course aims to introduce students to the principles and mechanisms of action in the market and competition in the business environment through training in the case of application process to a virtual market. Student should be able to take appropriate decisions in the actual labor market later.

Course's contents:

❖ Theoretical part:

- Modeling simplified mechanism of work in the market.
- A review of some mechanisms to help decision making within the working group.

❖ Practical part:

- Distribution of participants on the work teams and the distribution of roles within each team.
- Know the rules to participate in a simulation game.
- Implementation of simulation sessions.
- The final evaluation of the results of a simulation game based on three elements: the site that the team achieved between the competing teams, the reports submitted by the team, the commitment of the team members to participate.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Methods of Scientific Research and Data Analysis
Academic Year :	Third year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the concept of scientific research and its objectives and steps for setting up scientific research and data analysis methods to be able to do a research.

Course's contents:

- The Concept of Scientific Research and its objectives.
- Research Methodology
- Steps of preparing search
- Data Analysis using SPSS program
- Descriptive Analysis
- Testing the Hypothesis
- Correlation and Regression Analysis

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Operation research
Academic Year :	Third year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the academic ways like linear programming and transport theory , to be able to use these skills in solving problems and help in decision-making.

Course's contents:

- ❖ Introduction about Operation Research, the structure, properties, brunches, quality and quantity goals
- ❖ Linear Programming
    - General Linear Programming properties
    - Graphic solving for Linear Programs
    - The structure of a Linear Program
    - Using simplex to solve Linear Program
        - ✓ Main principles for Simplex
        - ✓ The learning steps to apply Simplex
        - ✓ Practical application to solve a linear program with Simplex
    - Dual in linear programming
    - Studying the solution sensitivity
- ❖ Transportation problem
- ❖ Network diagrams (Pert, Potential, Pert/cost…)
- ❖ Storage models (Wilson model)
- ❖ Dynamic programming (its role in multi fazes investment projects)
- ❖ Testing results and applying solutions

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Supply Chain Management
Academic Year :	Third Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the principals of Supply and production administration with distribution and storage.

Course's contents:

- Supply management : Purchasing, suppliers selection, purchasing policies.

- Production operations management : production systems, production planning and scheduling, production control, Economic Order Quantity, Just In Time.

- Distribution and inventory management : warehouses location, inventory management, distribution networks.

- Logistics : transport management, Subcontracting and Vertical Integration.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Data analysis
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to provide students with the concepts and theories of knowledge management and data mining.

Course's contents:

- Data Warehousing
- Association Discovery
- Classification
- Clustering
- Time Series

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Methodologies for analysis and design of information systems
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to raise the capabilities and skills of students in the systems analysis and design.

Course's contents:

- Introduction to the analysis and design of information systems.

- Information system life cycle.

- Planning Phase.

- The analysis phase: job analysis – data analysis.

- The design phase: data - functions

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	E-Commerce and E-Business
Academic Year :	Fourth Year
Number of hours :	4 theoretical
Course's Goal :	This course aims to introduce students to the principles and tools to develop and manage e-business solutions, including integrated information systems and e-commerce.

Course's contents:

- The importance of e-commerce.
- Legislative and legal requirements for e-commerce.
- Infrastructure and technical requirements for e-commerce.
- Hosting and ensure the level of service.
- Electronic signature requirements.
- The organizational structures needed for e-commerce.
- Analysis of special cases of e-commerce.
- The techniques used in e-commerce businesses.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Advanced programming languages
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	We aim in This course to introduce students to the advance programming in C# language from object-oriented programming and classes till we get to build user-friendly frames

Course's contents:

- Object Oriented Programming
- Classes
- Polymorphism
- Inheritance
- Abstract Classes
- Interfaces
- Recursion
- Building GUI

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Management Information Systems
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims Introduce students to the strategic role of management information systems in businesses and their role in management decision-making, in addition to clarifying the basic concepts of management information systems and the use of information technology in solving administrative problems, and the development of students' ability to apply the theories and scientific instruments of the science of management information systems in practice.

Course's contents:

- Foundations of company information systems.
- Information technology and competition.
- Hardware and Software.
- Data management.
- Networking and communications.
- E-commerce business.
- Decision Support Systems.
- The development of information systems.
- The security of information systems and ethics.
- International Management Information Technology.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Networks and Information Security
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the basic concepts in networks and types and different working methods and protocols necessary to communicate between different types of networks and levels of communication between computers. In addition to the identification of methods to attack computers and optimal strategies to protect them and the basic knowledge and applied in the security and protection from malware to secure information systems so as to develop the capacity of the student about the use and management of computer networks and information security management in management information systems.

Course's contents:

- Definition of computer networks.

- Open system interconnections.

- Local and global networks.

- Symmetric encryption and asymmetric.

- Network security devices.

- Applications in the field of services windows server.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Decision Theory
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the concepts and methods relating to decisions taken. The student should be able to develop appropriate criteria for decision-making and has the skills necessary to analyze the problem and design the optimal model to them.

Course's contents:

- Basic concepts

- Decision-systems in the organization

- Simple methods in decision-making .

- Utility theory.

- Methodology of multiple criteria decision-making.

- Alternatives and criteria.

- Preferences modeling

- Case studies

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Project Management
Academic Year :	Fourth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to provide students with the tools and knowledge necessary for effective management of the project within the constraints of time, cost and other resources.

Course's contents:

- Concepts and terminology of project management.

- Project Resource Management.

- Project Time Management.

- Project Costs Management.

- Project Risk Management.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	The administrative management of automation projects
Academic Year :	Fifth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to the concepts and principles and tools required to manage automation projects with administrative provide a comprehensive framework for the stages of project management.

Course's contents:

- Reminder concept of the project and the privacy of software projects.

- Risk analysis in software projects.

- Management of the cost in software projects.

- Time management techniques.

- Quality Management of the digital product.

- Practical cases.

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Software Engineering
Academic Year :	Fifth Year
Number of hours :	4 theoretical
Course's Goal :	This course aims to introduce students to software engineering methods. The course covers basic concepts in software engineering such as requirements engineering, design and analysis of your systems. The course presents different methods of software development.

Course's contents:

- Software development life cycle

- Methodologies:

  - ✓ Waterfall

  - ✓ Rapid development RAD

- Unified Modeling Language (UML)

Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Advanced Database Management Systems
Academic Year :	Fifth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to introduce students to advanced topics in databases ,particularly in the areas of distributed database management and data stores and security databases.

Course's contents:

- Database basics.

- The conceptual Diagram.

- Relational database.

- Structured Query Language (SQL).

- Data integrity.

- Database schema.

- Database transaction.

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Course Syllabus

Scientific Department :	Operations Management and Management Information Systems Department
Course's Title :	Decision support systems and expert systems.
Academic Year :	Fifth Year
Number of hours :	2 theoretical + 2 application
Course's Goal :	This course aims to provide students with the concepts of artificial intelligence, and how to build and design and analysis of decision support systems.

Course's contents:

- Propositional Calculus
- Predicates Calculus
- Inference
- Expert Systems
- Forward and Backward chaining
- Visual Prolog
- Fuzzy Logic
- Fuzzy Expert Systems