Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2025

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extracurricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Advance object oriented

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature: Abbas Hussin

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

أ.م.د. عرفات ناصر حاتم

Date:

Signature:

كلية علوم الحاسوب وتكنولوجيا المعلومات جامعة البصرة
مكتب العميد
DEAN OFFICE

Approval of the Dean

Course Description Form

1. Course Name:
Advance Object Oriented Programming
2. Course Code:
3. Semester / Year:
1/3
4. Description Preparation Date:
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
64/3
7. Course administrator's name (mention all, if more than one name)
Name:Noor Saad Fahad Email: noor.alfahad@uobasrah.edu.iq
8. Email: Course Objectives

Course Objectives	• Learn about object-oriented programming (JAVAFX) • Learn about developing Java GUI programs. • JavaFX provides a powerful, streamlined, flexible framework that simplifies the creation of modern, visually exciting GUIs.
9. Teaching and Learning Strategies	
Strategy	Teach the students about the basics of JAVAFX, and how to start to create a graphical user interface. They can also learn about creating dynamic GUI by applying events. This can be done through extensive theoretical and laboratory lectures.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2	Learn about the basics	JAVAFX basics	Theoretical & Laboratory	Discussion
2	2	Learn about the concepts	JAVAFX Concepts	Theoretical & Laboratory	Discussion & questions
3	2	Learn about the different layouts	JAVAFX layout panes	Theoretical & Laboratory	Discussion and questions
4	2	Learn about the different layouts	JAVAFX layout panes	Theoretical & Laboratory	Discussion and questions
5	2		First Exam		
6	2	Learn how to create 2D shapes	2D shapes	Theoretical & Laboratory	Discussion and questions
7	2	Learn how to create 2D shapes	2D shapes	Theoretical & Laboratory	Discussion and questions
8	2	Learn how to create 2D shapes	2D shapes	Theoretical & Laboratory	Discussion and questions

9	2	Learn how to create 2D shapes	Properties and Operations of 2D shapes	Theoretical & Laboratory	Discussion and questions
10	2	Learn about events and animations	Event driven programming and animations	Theoretical & Laboratory	Discussion and questions
11	2		Second Exam		
12	2	Learn about events and animations	Event driven programming and animations	Theoretical & Laboratory	Discussion and questions
13	2	Learn about events and animations	Event driven programming and animations	Theoretical & Laboratory	Discussion and questions
14	2	Learn about 3D shapes and images	3D shapes and images	Theoretical & Laboratory	Discussion and questions
15			Preparing for final exams		
11. Course Evaluation					
Exams, discussions					
12. Learning and Teaching Resources					

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Database managemat Syste

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature: Abbas Hussa

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

أ.م.د.
عرفات ناصر جاسم

Approval of the Dean

Course Description Form

1. Course Name
Database Management Systems
2. Course Code
3. Semester / Year
3rd year
4. Description Preparation Date
10-09-2025
5. Available Attendance Forms:
Theoretical lectures + Practical labs
6. Number of Credit Hours (Total) / Number of Units (Total): 14
14 (2 hours theory + 2 hours practical weekly = 4 hours per week / 3 credits)
7. Course administrator's name (mention all, if more than one name): Sarah Ibrahim Kadhim
Name: Sarah Ibrahim Kadhim Email: sara.ibrahim@uobasrah.edu.iq
8. Email: Course Objectives

Course Objectives	The course aims to: • Provide students with fundamental concepts of database management systems. • Introduce students to different database models, focusing on the relational model. • Develop database design skills using Entity-Relationship Diagrams (ERD). • Train students to use SQL for retrieval, insertion, update, and deletion operations. • Enable students to design and implement small databases using modern DBMS tools (such as MySQL, Oracle, or SQL Server). • Familiarize students with key concepts in database security, backup, and referential integrity.

9. Teaching and Learning Strategies	
Strategy	Classroom lectures supported with practical examples. Laboratory sessions using DBMS software.

	Presentations and individual/group assignments. Mini-projects for designing and implementing a database.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understand the basic concepts of DBMS	Introduction to Database Systems	Lecture	Lecture
2-3	4	Design a database using ERD	Relational Model and ERD	Lecture + Lab	Assignment/Practical Test
4-5	4	Write SELECT queries with conditions	SQL Language – Basic Queries	Lab	Practical Test
6-7	4	Write SELECT queries with conditions	SQL Language – Basic Queries	Lab	Assignment/Short Exam
8	4	Manage data using SQL	Data Operations (INSERT, UPDATE, DELETE)	Lecture + Lab	Practical Evaluation
9	4	Apply constraints to data	Constraints and Referential Integrity	Lecture + Lab	Practical Exercise
10	2	Simplify tables and eliminate redundancy	Normalization	Lecture	Assignment
11	4	Understand security and access control	User Management and Privileges	Lab	Practical Evaluation
12-13-14	4	Design and implement an	Mini Project	Lab + Supervision	Project Presentation

		integrated database			
15	2	Review of all topics	Comprehensive Review	Lecture	Review Questions

11. Course Evaluation
Quizzes: 10% Assignments and exercises: 10% Mini project: 10% Theoretical final exam: 35% Practical final exam: 15%

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Elmasri & Navathe, *Fundamentals of Database Systems*, Latest Edition. Silberschatz, Korth & Sudarshan, *Database System Concepts*, Latest Edition.
Recommended books and references (scientific journals, reports...)	MySQL and Oracle official documentation. TutorialsPoint, W3Schools SQL Documentation.
Electronic References, Websites	https://dev.mysql.com/downloads/installer/ https://www.mysql.com/products/workbench/

Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Decision Support System

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28/9/2025

Signature:

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

أ.م.د. عرفات ناصر جاسم

Approval of the Dean

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University of Basrah
College of Computer Science and Information Technology

Course Information	
Course Title	Decision Support Systems
Credits	3 Hours
Teaching Method	3 Hours of Lecture

Assessment Policy		
Assessment Type	**Expected Due Date**	**Weight**
First Exam	To be announced by the dept.	
Second Exam	To be announced by the dept.	
Student activities (Quizzes)	To be announced later	
Lab	To be announced later	
Lab (final)	To be announced later	
Final Exam	To be announced later	

Learning Outcomes

The objective of this course is to study how Decision Support Systems (DSS) work and the theory behind different DSS techniques, thereby enabling them to understand today's turbulent business environment and how organizations survive and even excel in such environments (particularly solving problems and exploiting opportunities). This course provides the required skills and knowledge of the various decision making models so that decisions can be based on logical and mathematical foundations under different circumstances, such as in cases of uncertainty, lack of information, or certainty. This course studies the design of computerized systems to support individual or organizational decisions. Moreover, the course aims at understanding the need for computerized support of managerial decision making and what was an early framework for managerial decision making.

Week	Topics
	• Decision Support System and Business Intelligence • Decision Making, Systems, Modeling, and Support • DSS Concepts, Methodologies, and Technologies: An Overview • Modeling and Analysis • Data Warehousing for Business Intelligence

Textbook

Efraim Turban, Ramesh Sharda, Dursun Delen, "Decision Support and Intelligence Systems", Prentice Hall; 7th edition, 2005.

Reference

- V.L. Sauter, Decision Support Systems For Business Intelligence, New York: John Wiley & Sons, 2010.
- George M. Marakas. Decision Support Systems in the Twenty-first Century. Prentice Hall, ????

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Ethics

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature:

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

أ.م.د.
عرفات ناصر جاسم

Approval of the Dean

University of Basrah
College of Computer Science and Information Technology

Course Information	
Course Title	Computing Ethics
Course Number	IT111
Prerequisites	None
Credits	2 Hours
Teaching Method	2 Hours of Lecture

Assessment Policy		
Assessment Type	**Expected Due Date**	**Weight**
First Exam	To be announced by the dept.	15%
Second Exam	To be announced by the dept.	15%
Student activities (Quizzes)	To be announced later	10%
Lab	To be announced later	10%
Final Exam	To be announced later	50%

Learning Outcomes

This course will develop the ethical foundations of good professional practice in computing and will give students an informed awareness of the principal issues of ethics and professional responsibility in the development and use of computers and information systems. It will provide a basic survey of ethical theories and discuss the role of professional organizations in maintaining good practice, both in general and then specifically in the computing industry. It will also consider legislation that applies in the computing industry, including three major areas of ethical concern in computing: computer cracking, data privacy and intellectual property of software.

Week	Topics
	Introduction to Ethics
	Introduction to Ethics
	Ethics Philosophical Issues
	Ethics Philosophical Issues
	Intellectual Property Rights
	Intellectual Property Rights
	Intellectual Property Rights
	Computer Crimes
	Computer Crimes
	Computer Crimes
	Information Privacy

	Information Privacy
	Information Privacy
	The Concept of Plagiarism
	The Concept of Plagiarism

Textbooks
• Michael J. Quinn, Ethics for the Information Age, 3rd Ed., Addison-Wesley 2009.

Reference
• Gorge Reynoids, Ethics in Information Technology, Thomason, 2003. • Sara Baase, A Gift of Fire: Social, Legal and Ethical Issues for Computer and the Internet, 2nd ed., 2003. • Tavani H. T. and Hoboken N. J., Ethics and Technology, John Wiley, 3rd Ed, 2004. • Deborah G. Johnson, Computer Ethics. 3rd Edition, Englewood Cliffs, N.J., Prentice Hall, 2001..

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University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Computer Network I

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature: Haider

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature: Abbas Hasan

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

أ.م.د.
عرفان ناصر جاسم

Approval of the Dean

Course Description Form

1. Course Name: Computer Networks 2	
2. Course Code: N/A	
3. Semester / Year: first semester/ 2025/2026	
4. Description Preparation Date: 13/ 9/ 2025	
5. Available Attendance Forms: In- Person (Theoretical lectures)	
6. Number of Credit Hours (Total) / Number of Units (Total): 3 hours per week	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Prof. Dr. Huda Abdulraheem Ahmed Email: huda.ahmed@uobasrah.edu.iq	
8. Email: Course Objectives	
Course Objectives	• Introduce students to the concept of computer networks. • Identify types of networks and their applications. • Familiarize students with communication protocols and technologies. • Develop students' skills in analyzing network performance and applying different methods.
9. Teaching and Learning Strategies	
Strategy	The strategy focuses on both theoretical and practical aspects. Lectures are supported by visual and audio presentations. Practical lectures include interactive applications with individual and group assignments and discussions. Projects are also required to develop students' abilities and skills.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	3	Students understand the fundamentals of computer networks	Introduction to Computer Networks and their Components	Theoretical Lecture and demonstration	Simple daily quizzes
2	3	Students understand the functions of the OSI and TCP/IP models	OSI and TCP/IP Models: layers and their functions, comparisons, benefits	Theoretical Lecture and presentation	
3	3	Students understand and identify transmission media	Media (Cabling & Transmission Media)	Theoretical Lecture and presentation	
4	3	Understand Local Area Networks	Local Area Networks (LANs) and Ethernet: LAN protocols, CSMA/CD, basic topologies	Theoretical Lecture and presentation	
5		First midterm exam		First midterm exam	
6	3	Understand the concept of addressing	Addressing and Subnetting: IPv4, IPv6, subnetting, subnet mask	Theoretical Lecture and presentation	Simple daily quizzes
7	3	Understand transport protocols	Transport Layer Protocols: TCP vs. UDP, reliability concepts, flow control	Theoretical Lecture and presentation	
8	3	Understand Networks Layer	Network Layer and Routing: IP, ARP, ICMP, static and dynamic routing.	Theoretical Lecture and presentation	
9	3	Understand Data link Layer	Data Link Layer: frames, framing, error control, MAC addresses, VLANs	Theoretical Lecture and presentation	
10		Second Midterm Exam		Midterm Exam	

11	3	Understand Application Layer	Application Layer Protocols: DNS, HTTP, Email (SMTP/POP/IMAP), FTP.	Theoretical Lecture and presentation	
12	3	Understand Basic Network Security Principles	Basic Network Security Principles: firewalls, encryption concepts, authentication.	Theoretical Lecture and presentation	
13	3	Understand Wireless and WAN Networks	Wireless and WAN Networks: types of wireless networks, access points, challenges, intercity networking.	Theoretical Lecture and presentation	
14	3	Understand Performance and Measurements	Network Performance and Measurements: delay, bandwidth, packet loss, throughput, QoS	Theoretical Lecture and presentation	

11. Course Evaluation
Theoretical Exams covering concepts and models. Class participation and discussions, Reports and Projects.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	/
Main references (sources)	CCNAv7: Introduction to Network (ITN) Companion Guide/ CISCO Networking Academy
Recommended books and references (scientific journals, reports...)	“Fundamentals of Microsoft learn: standards covering computer networking”
Electronic References, Websites	CISCO Networking Academy Coursera

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Computer NetworkII

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature:

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

أ.م.د.
عرفات ناصر جاسم

Approval of the Dean

Course Description: Computer networks II

1. Course Name:	
Computer networks II	
2. Course Code	
CSIT0309	
3. Semester / Year	
Second/2024-2025	
4. Description Preparation Date	
1/9/2023	
5. Available Attendance Forms	
Regular attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4 hours/3 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Muslim Mohsin Khudhair **Email:** muslim.khudhair@uobasrah.edu.iq	
8. Course Objectives	
Course Objectives	• Learn the basics of computer networks • Learn the basics and types of network models • Learn the basics of each layer of network models • Learn the basics of network planning and the types of devices used • The ability to connect networks • Learn the basics of network operating systems • Learn how to configure the settings for each device on the network
9. Teaching and Learning strategies	
Strategy	A- Cognitive Objectives 1- Network Design 2- Network Implementation and Construction 3- Communicate with the beneficiary and be able to identify the objectives and reasons for building networks. 4- Be able to build and manage networks properly. B- Course Skill Objectives 1- Be able to design and manage networks using practical examples and network simulation programs.

	2- Work within a team, understand assigned tasks, and complete them within a specified timeframe. 3- Be able to detect errors, find appropriate technical solutions, and properly manage and monitor the network.

10. Course Structure

Week	Hours	Required Outcomes	Unit or Subject Name	Learning Method	Evaluation Learning
1-2	8	Theoretical	Networking basics, network technologies, and types	Lecture using data show	Questions and Discussion
3-4	8	Theoretical	Study network operating systems and network device configuration	Lecture using data show	Questions and Discussion
5	4	Theoretical and practical	Study network protocols and communication methods	Lecture - Explanation	Laboratory and Theoretical Exam
6-7	8	Theoretical and practical	Enabling technologies of the World Wide Web	Lecture using data show	Theoretical Exam
8	4	Theoretical and practical	Study network access layer	Lecture - Explanation	Questions and Discussion
9-11	8	Theoretical and practical	Study network layer	Lecture - Explanation	Questions and Discussion
12-13	8	Theoretical and practical	Study network addressing	Lecture - Explanation	Laboratory and Theoretical Exam
14-15	6	Theoretical and practical	Study transport layer and application layer Build networks and present required projects	Lecture - Explanation	Discussion, questions and providing technical solutions to some network problems

11. Course Evaluation

1. Weekly laboratory and monthly theoretical tests.
2. Practical projects and networks designed using network simulation software.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Mark A. Dye • Rick McDonald • Antoon W. Rufi, Network Fundamentals, CCNA Exploration Companion Guide, Copyright© 2008 Cisco Systems, Inc.

Recommended books and references (scientific journals, reports...)	1. Behrouz A. Forouzan - Data Communications andNetworking with TCP_IP Protocol Suite-McGraw Hill(2021) 2. James F. Kurose, Keith W. Ross - Computer NetworksA Top-Down Approach -Laxmi Publications (2017)
Electronic References, Websites	http://www.Cisco.netacad.net

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2025

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: operating System

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature: Abbas Hassan

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 30/9/2025

Signature:

عرفان ناصر جاسم

Approval of the Dean

University of Basrah

College of Computer Science and Information Technology

Course Information	
Course Title	Operating System I
Course Number	IS400
Prerequisites	IS???
Credits	3 Hours
Teaching Method	2 Hour of Lecture + 2 Hours Lab

Assessment Policy		
Assessment Type	Expected Due Date	Weight
First Exam	To be announced by the department.	
Second Exam	To be announced by the department.	
Student activities (Quizzes)	To be announced later	
Lab	To be announced later	
Lab (final)	To be announced later	
Final Exam	To be announced later	

Learning Outcomes

This course aims to provide a clear description of the concepts that underlie operating systems. As prerequisites, the student must be familiar with basic data structures, computer organization, and high-level languages such as C, C++, or Java.

Week	Topics
1,2	Introduction to Operating Systems What Operating Systems Do Operating-System Operations Protection and Security Distributed Systems Special-Purpose Systems Computing Environments Open-Source Operating Systems
3,4	Operating-System Structures Operating-System Services User Operating-System Interface System Calls System Programs Virtual Machines
5,6,7	Processes Process Concept Process Scheduling Operations on Processes Interprocess Communication
8	Threads Multithreading Models

	Thread Libraries Threading Issues
9,10,11	CPU Scheduling Scheduling Criteria Scheduling Algorithms Thread Scheduling Multiple-Processor Scheduling
12,13	Process Synchronization The Critical-Section Problem Synchronization Hardware Semaphores Monitors Atomic Transactions
14,15	Deadlocks Deadlock Characterization Methods for Handling Deadlocks Deadlock Prevention Deadlock Avoidance Deadlock Detection
16	Memory Management

Textbooks
Avi Silberschatz, Peter B. Galvin, and Greg Gagne, "Operating System Concepts", John Wiley & Sons, 8th edition.

Reference
William Stallings, "Operating Systems: Internals and Design Principles", Prentice Hall, 6th Edition.

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2025

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: OperationReSearch For Bu

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature:

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

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Approval of the Dean

Course Description Form

1. Course Name: Operations Research	
2. Course Code: CSITCIS307	
3. Semester / Year: second course/2025	
4. Description Preparation Date: 21/08/2025	
5. Available Attendance Forms: The Operations Research course can be attended theoretically in the hall.	
6. Number of Credit Hours (Total) / Number of Units (Total)/3 hours/3 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Zainab B Dahoos Email: zainab.dahoos@uobasrah.edu.iq	
8. Email: Course Objectives	
Course Objectives	• Modeling realistic problems with different mathematical formulas. • Finding a solution to any problem available in the labor market after modeling it using different methods of solution. • Searching for the best solution to the problem and searching for the best method used to deliver the product to the labor market.
9. Teaching and Learning Strategies	
Strategy	Providing distinguished educational and research services that keep pace with local and international quality standards in the fields of computer and informatics. These services allow preparing a distinguished, competitive graduate. In addition to that, the completion of high-end scientific research and effective participation in community service and building a knowledge-based economy.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week1	3	Definition of operation research	Introduction – Linear programming Models, Forms of Linear programming Models	Theoretical lecture	Quiz
Week2	3	Definition of Linear programing	Linear programming	Theoretical lecture	homework
Week 3	3	Application about linear programing	Application Examples , Solving Linear Programming Models	Theoretical lecture	Quiz
Week 4	3	Definition of graphical method	Graphical method	Theoretical lecture	Quiz
Week5	3	Application about graphical method	Examples about graphical method	Theoretical lecture	Quiz
Week6	3	Simplex Method		Theoretical lecture	Quiz
Week7	3	Solve problems about Simplex Method	Solving Linear Programming Problems by Simplex Method	Theoretical lecture	Quiz
Week7	3	Definition of duality in Linear Programming Problem	duality in linear programing	Theoretical lecture	Quiz
Week8	3	Definition of Artificial Variable Technique	Artificial Variable Technique	Theoretical lecture	Quiz
Week9		Application about Duality in Linear Programming Problem	Duality in Linear Programming Problem	Theoretical lecture	Quiz
Week10		Application in Assignment 1	Assignment 1	Theoretical lecture	Quiz

Week11		Transportation Problems	Transportation models	Theoretical lecture	Quiz
Week12		Examples in Transportation problems	Initial Basic Feasible Solution of Transportation problems	Theoretical lecture	Quiz
Week13		Examples in Optimal Solution	Optimal Solution of Linear Programming Problems	Theoretical lecture	Quiz
Week14		Examples in Transportation Problem	Unbalanced Transportation Problem	Theoretical lecture	Quiz
Week15		Examples in Assignment 2	Assignment 2	Theoretical lecture	Quiz
Week16		Examples in The Hungarian Method	The Hungarian Method for Assignment Problem	Theoretical lecture	Quiz

11. Course Evaluation

		Time/Number	Weight (Marks)
Formative assessment	**Quizzes**	2	10% (10)
	Assignments	2	10% (10)
Summative assessment	**First Exam**	1hr	15% (15)
	Second Exam	1 hr	15%(15)
	Final Exam	3hr	50% (50)
Total assessment			100% (100 Marks)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Makebest Decisions Through Operations Research, S.D.SHARMA
Main references (sources)	

Recommended books and references (scientific journals, reports...)	Prem Kumar Gupta, D.S. HIRA, S.CHAND بحوث العمليات ((مفهوما وتطبيقا) تأليف الدكتور حامد سعد نور الشمرتي
Electronic References, Websites	

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Computer Simulation

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature:

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

أ.م.د. عرفات ناصر جاسم

Date:

Signature:

Approval of the Dean

Course Title: Computer Simulation 3 Hrs. (3 Lectures)

1. Description

A conceptual foundation for discrete events and continuous time simulation on computers is presented. Statistical considerations such as random number generation, design of experiments, output analysis, and model correctness are considered. Programming in discrete event simulation languages such as GPSS, Simscript, or SIMULA. Implementation issues for simulation languages.

2. Textbook (s)

- Discrete Systems Simulation. J. Banks et al., Prentice Hall, 2014

3. References

- Modeling and Simulation: The Computer Science of Illusion, Stanislaw Raczynski, John Wiley & Sons, Ltd., The Atrium, Southern Gate, Chichester,
- , 2006
- Simulation with Visual SLAM and AweSim. John Wiley & Sons, 1999. A. Pritsker & J. O'Reilly.

4. Course Objectives

- Understand the nature of simulation modeling.
- Distinguish between discrete and continuous simulation.
- Implementing simulation techniques to single-server and n-server queuing systems and how to compute the performance measures, such as total number of customers in the system, average waiting time, …
- Be familiar with using the simulation technique for selecting optimal alternative ordering policies for an inventory system.
- Identify the advantages and disadvantages of both simulation packages and programming languages.
- Applied different methods for generating and testing random numbers and random variables that were implemented in system modeling.

5. Course Outcomes

On successful completion of this course, the students should be able to

- Discuss when to use simulation, its advantages, and actual areas of its application.

- Explore the concepts of system and model, and how to build and use a simulation model of a system.
- Identify a set of steps to guide a model builder in a thorough and sound simulation.
- Apply the descriptive statistics that were used for predicting system performance.
- Describe different algorithms to generate random numbers and their subsequent testing for randomness.
- Discuss how a system is modeled in terms of its state at each point in time and the activities and events that cause the system state to change.
- Describe the simulation languages and software for discrete-event simulation, and building a simulation package.
- Discuss the general characteristics of queues, the effect of varying the input parameters, and the mathematical solution of a small number of important and basic queuing models.

6. Topics Covered

No.	Topics	Weeks
1	• Basic Simulation Modeling • When Simulation Is the Appropriate Tool • When Simulation Is Not Appropriate • Advantages and Disadvantages of Simulation • Areas of Application • Systems and System Environment • Components of a System • Discrete and Continuous Systems • Model of a System • Types of Models • Discrete-Event System Simulation • Steps in a Simulation Study	3
2	• Modeling Complex Systems • Dynamical, Finite State, and Complex Model Simulations	2
3	Simulation Software • Comparing Simulation Packages with Programming Languages • Classification of Simulation Software • Desirable Software Features ○ General Capabilities.	2

	○ Hardware and Software Requirements ○ Statistical Capabilities	
4	Review of Basic Probability and Statistics. • Random Variables and Their Properties • Estimation of means, Variances and Correlations • Confidence Intervals and Hypothesis Test for the Mean.	3

5	Generating Random Varieties
	• General Approaches to Generating Random Variates
	• Generating Continuous Random Variates
	  • Uniform
	  • Exponential
	  • Normal
	  • Generating Discrete Random Variates
	  • Generating Arrival Processes
		3

	TOTAL	

7. Assessment Method

- Classroom performance : 5 %
- Quiz : 5 %
- Project : 10 %
- Examination : 40 %
- Final Examination : 40 %

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Academic Program Description Form

University Name: University of Basra

Faculty/Institute: Collage of Computer Science and Information System

Scientific Department: Computer Information System

Academic or Professional Program Name: Web Programming 2

Final Certificate Name: B.SC. oF Computer Information System

Academic System: Semester System

Description Preparation Date: 1-9-2024

File Completion Date:

Signature:

Head of Department Name:

Prof. Dr. Haider M.Al-Mashhadi

Date: 28-9-2025

Signature: Abbas Hassan

Scientific Associate Name:

Prof. Dr. Abbas H.Al-Asaadi

Date: 28-9-2025

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

أ.م.د.
عرفات ناصر جاسم

Approval of the Dean

Course Description Form

1. Course Name:	
Web ProgrammingII	
2. Course Code:	
3. Semester / Year:	
2ND year	
4. Description Preparation Date:	
12/9/2025	
5. Available Attendance Forms:	
Daily Attendance Sheet	
6. Number of Credit Hours (Total) / Number of Units (Total):15	
7. Course administrator's name (mention all, if more than one name)	
Name:Dr. Nahla A. Flayh Email:Nahla.flayh@uobasrah.edu.iq	
8. Email: Course Objectives	
Course Objectives	The objectives of this course are: 1. Understanding PHP Basics: Learn the fundamentals of PHP programming language, including syntax, variables, data types, operators, control structures, and functions. 2. Web Development Concepts: Gain an understanding of web development concepts such as client-server architecture, HTTP protocol, request/response cycle, and the role of PHP in web development. 3. Working with HTML and CSS: Learn how to integrate PHP code within HTML and CSS to create dynamic web pages. Understand how to generate HTML content using PHP

	and manipulate CSS styles based on dynamic conditions. 4. Handling Form Data: Explore techniques for handling form submissions using PHP. Learn how to retrieve form data, validate and sanitize input, and perform server-side form processing. 5. Working with Databases: Understand the basics of database management systems and how to interact with databases using PHP. Learn how to establish database connections, execute SQL queries, and handle result sets. 6. Session and Cookies Management: Explore techniques for managing user sessions and cookies using PHP. Learn how to create, store, and retrieve session data, as well as how to implement user authentication and authorization. 7. File Handling: Gain knowledge on file handling operations in PHP, such as reading from and writing to files, uploading files, and manipulating file metadata.
9. Teaching and Learning Strategies	
Strategy	The *Web ProgrammingII* course adopts a variety of teaching and learning strategies to ensure students develop both theoretical understanding and practical skills: 1. **Lectures (Theory Delivery)** ○ Provide foundational knowledge of PHP, and DataBase. ○ Use multimedia presentations and live coding demonstrations. 2. **Hands-On Laboratory Sessions** ○ Conduct practical exercises in computer labs to apply lecture concepts. ○ Guide students through coding tasks, debugging, and small projects. 3. **Project-Based Learning (PBL)**

	○ Assign individual and group projects (e.g., building a personal portfolio site). ○ Encourage creativity, problem-solving, and application of best practices. 4. **Active and Collaborative Learning** ○ Use pair programming, group discussions, and peer code reviews. ○ Encourage teamwork and knowledge sharing. 5. **E-Learning and Online Resources** ○ Integrate Learning Management Systems (LMS) for assignments, quizzes, and resources. ○ Provide supplementary tutorials, coding sandboxes (e.g., CodePen, JSFiddle), and video lessons. 6. **Formative Assessments and Feedback** ○ Use short quizzes, coding exercises, and in-class activities for continuous evaluation. ○ Provide timely feedback to help students improve progressively. 7. **Self-Directed Learning** ○ Encourage students to explore web development tools, online documentation, and communities. ○ Promote independent problem-solving and lifelong learning habits. 8. **Demonstrations and Case Studies** ○ Showcase real-world websites and applications to highlight best practices. ○ Analyze case studies of good vs. poor web design and coding practices.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understand PHP syntax, variables, data types, and operators	Introduction to PHP	Lecture + Hands-on coding	Short quiz + coding exercises
2	3	Apply control structures, loops, and functions in PHP	Introduction to PHP	Lecture + Lab work	Lab assignment

3	3	Explain client-server architecture and HTTP protocol	Web Development Basics	Lecture + Discussion	Quiz
4	3	Demonstrate request/response cycle, HTML & CSS basics, integrate PHP with HTML/CSS	Web Development Basics	Hands-on coding + Demo	Practical exercise
5	3	Create HTML forms and handle submissions with PHP	Form Handling and Validation	Lab work	Coding assignment
6	3	Validate and sanitize user input, display form errors	Form Handling and Validation	Lecture + Lab	Lab test
7	3	Explain relational databases and establish DB connection with PHP	Database Interaction	Lecture + Lab practice	Quiz + coding exercise
8	3	Execute SQL queries and retrieve results using PHP	Database Interaction	Hands-on lab	Coding project
9	3	Understand sessions, cookies, and manage user sessions	Session Management & Authentication	Lecture + Lab	Quiz + coding demo
10	3	Implement authentication, authorization, and secure session handling	Session Management & Authentication	Case study + Lab	Coding project

11	3	Perform file reading/writing, handle file uploads and validation	File Handling and Uploading	Lab work	Practical exercise
12	3	Manipulate file metadata, directory handling	File Handling and Uploading	Lecture + Lab	Coding assignment
13	3	Use APIs in PHP, make API requests	Working with APIs	Lecture + Demo	Quiz
14	3	Parse API responses (JSON/XML), integrate external APIs	Working with APIs	Lab work	Coding project
15	3	Present group project and reflect on learning outcomes	Project Presentations & Wrap-up	Group work + Discussion	Group presentation

11. Course Evaluation

- Continuous Assessment: Quizzes and lab exercises are conducted weekly to provide timely feedback and track progress.
- Project-Based Assessment: Both midterm and final projects assess students' ability to integrate theory into practical web development tasks.
- Participation: Students are encouraged to actively engage in labs, discussions, and peer reviews.

Flexibility: Evaluation methods may be adjusted to suit online or blended learning environments, ensuring fairness and accessibility.

- 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Welling, L., & Thomson, L. (2017). PHP and MySQL Web Development (5th ed.). Addison-Wesley.
Recommended books and references (scientific journals, reports...)	Freeman, E., & Robson, E. (2020). Head First HTML and CSS (2nd ed.). O'Reilly.

Electronic References, Websites	**W3Schools** *Description:* Educational website with interactive tutorials and examples for HTML, CSS, and JavaScript. *Link:* W3Schoos