



Course Specification

— (Bachelor)

Course Title: **Distributed Systems**

Course Code: **501554-3**

Program: **Bachelor of Computer Science**

Department: **Department of Computer Science**

College: **College of Computers and Information Technology**

Institution: **Taif University**

Version: **1**

Last Revision Date: **01-02-2024**



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A. General information about the course:

1. Course Identification

1. Credit hours: (3)

2. Course type

A. University College Department Track Others
 B. Required Elective

3. Level/year at which this course is offered: (9th Level)

4. Course general Description:

This course introduces the concepts and motivations of distributed systems, types of distributed systems, distributed system architectures, concept of process, communications and synchronization, distributed concurrency control, and distributed algorithms.

5. Pre-requirements for this course (if any):

Operating Systems (501453-3)

6. Co-requirements for this course (if any):

7. Course Main Objective(s):

- Define the fundamental concepts and goals of distributed systems.
- Describe the different types of distributed systems and different architectures.
- Define process concept, synchronization and communication.
- Understand the concept of distributed concurrency control and distributed algorithms.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	67%
2	E-learning	1	33%
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4	Distance learning		





3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	
3.	Field	-
4.	Tutorial	-
5.	Others (specify)	-
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define the basic concepts and goals of distributed systems.	K1	Lectures	Direct Quizzes / Homework Exams Indirect Course Exit Survey
1.2	Describe the different types of distributed systems and different architectures.	K1	Lectures	Direct Quizzes / Homework Exams Indirect Course Exit Survey
1.3	Define process concept, synchronization and communication.	K1	Lectures	Direct Quizzes / Homework Exams Indirect



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
				Course Exit Survey
1.4	Understand the concept of distributed concurrency control and distributed algorithms.	K1	Lectures	Direct Quizzes / Homework Exams Indirect Course Exit Survey
2.0	Skills			
3.0	Values, autonomy, and responsibility			
3.1				

C. Course Content

No	List of Topics	Contact Hours
1.	Course overview, Policies, Basic concepts of distributed computing systems	6
2.	Goals, characteristics and design issues of distributed systems	6
3.	Types of distributed systems	6
4.	Distributed systems architectures	6
5.	Communication and Synchronization	6
6.	Distributed Concurrency control	6
7.	Distributed Algorithms	9
Total		45





D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	HomeWorks/StudentParticipation- Attendance - Assignments	EveryWeek	10%
2.	Quizzes	Week 4 and 9 and 12	10%
3.	Mid-Term	Week 7	20%
4.	Project/ Final Labs Exam	Week 13	20%
5.	Final Examination	Week 16	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Required Textbooks	<ul style="list-style-type: none"> Distributed Systems: Principles and Paradigms Andrew S.Tanenbaum, Maarten Van Steen
Essential References	<ul style="list-style-type: none"> Distributed Systems: Concepts and Design Jean Dollimore, Tim Kindberg, George Coulouris
Supportive References	
Electronic Materials	http://www.scs.stanford.edu/17au-cs244b/notes/ . Lecture notes.
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ul style="list-style-type: none"> A Lecture room appropriate for maximum 25 students with a personal computer, a data show and a smart board.
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> Video projector / data show
Other equipment (depending on the nature of the specialty)	





F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	<ul style="list-style-type: none"> Students Faculty members Coordinator Council Curriculum Committees 	<ul style="list-style-type: none"> Course exit survey Feedback from Faculty members Feedback from Course Coordinator Feedback from council Feedback from Curriculum Committees
Effectiveness of Student assessment	<ul style="list-style-type: none"> Students Faculty members Coordinator Council Curriculum Committees 	<ul style="list-style-type: none"> Course exit survey Feedback from Faculty members Feedback from Course Coordinator Feedback from council Feedback from Curriculum Committees
Quality of learning resources	<ul style="list-style-type: none"> Students Faculty members Coordinator Council Curriculum Committees 	<ul style="list-style-type: none"> Course exit survey Feedback from Faculty members Feedback from Course Coordinator Feedback from council Feedback from Curriculum Committees
The extent to which CLOs have been achieved	<ul style="list-style-type: none"> Students Faculty members Coordinator Council Curriculum Committees 	<ul style="list-style-type: none"> Course exit survey Feedback from Faculty members Feedback from Course Coordinator Feedback from council Feedback from Curriculum Committees
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods(Direct, Indirect)





G. Specification Approval

COUNCIL /COMMITTEE	CS council
REFERENCE NO.	Meeting #11
DATE	07/03/2024

