

Table 4: Summary of Course Information



1	Course Name:	System Paradigms																																																																																																																																																																																																			
	Course Code:	CTEC3002																																																																																																																																																																																																			
	Course Classification:	Elective (core)																																																																																																																																																																																																			
2	Synopsis:	The system paradigms module introduces students in-depth exploration of system paradigms, which are the underlying frameworks that shape the development and operation of complex systems. Students will learn about various paradigms, their historical evolution, key principles, and applications across different fields.																																																																																																																																																																																																			
3	Name(s) of Academic Staff:	1	Sherylaidah Samsuddin																																																																																																																																																																																																		
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4	Semester and Year offered:	Year Offered	3	Semester	3	Remarks:																																																																																																																																																																																															
5	Credit Value:	3																																																																																																																																																																																																			
6	Pre-requisite/ co-requisite (if any):	None																																																																																																																																																																																																			
7	Course Learning Outcomes (CLO)	<table border="1"> <tr> <td>CLO1</td> <td>Describe the fundamental concepts and principles of various system paradigms. (C1,PLO1)</td> </tr> <tr> <td>CLO2</td> <td>Explain the way information technology systems can represent stakeholders using different architecture. (C2,PLO2)</td> </tr> <tr> <td>CLO3</td> <td>Demonstrate a procurement process for software and hardware acquisition. (A3,PLO9)</td> </tr> <tr> <td>CLO4</td> <td>Use appropriate technologies to improve and discover the cause of performance problems in a system. (P3,PLO6)</td> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										CLO1	Describe the fundamental concepts and principles of various system paradigms. (C1,PLO1)	CLO2	Explain the way information technology systems can represent stakeholders using different architecture. (C2,PLO2)	CLO3	Demonstrate a procurement process for software and hardware acquisition. (A3,PLO9)	CLO4	Use appropriate technologies to improve and discover the cause of performance problems in a system. (P3,PLO6)																																																																																																																																																																																		
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8	Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment Methods	<table border="1"> <thead> <tr> <th rowspan="2">Course Learning Outcomes</th> <th colspan="11">Programme Learning Outcomes (PLO)</th> <th rowspan="2">Teaching Methods</th> <th rowspan="2">Assessment Methods</th> </tr> <tr> <th>PLO 1</th> <th>PLO 2</th> <th>PLO 3</th> <th>PLO 4</th> <th>PLO 5</th> <th>PLO 6</th> <th>PLO 7</th> <th>PLO 8</th> <th>PLO 9</th> <th>PLO 10</th> <th>PLO 11</th> </tr> </thead> <tbody> <tr> <td>CLO1</td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Lecture, Tutorial</td> <td>Test, Final Exam</td> </tr> <tr> <td>CLO2</td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Lecture, Tutorial</td> <td>Test, Final Exam</td> </tr> <tr> <td>CLO3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td>Lecture, Tutorial</td> <td>Assignment</td> </tr> <tr> <td>CLO4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Lecture, Tutorial</td> <td>Assignment</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td>Mapping with MQF Cluster of Learning Outcomes</td> <td>C1</td> <td>C2</td> <td></td> <td></td> <td></td> <td>C3D</td> <td></td> <td></td> <td>C4A</td> <td></td> <td></td> <td></td> <td colspan="2" rowspan="3"></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										Course Learning Outcomes	Programme Learning Outcomes (PLO)											Teaching Methods	Assessment Methods	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	CLO1	√												Lecture, Tutorial	Test, Final Exam	CLO2		√											Lecture, Tutorial	Test, Final Exam	CLO3									√				Lecture, Tutorial	Assignment	CLO4						√							Lecture, Tutorial	Assignment																																																													Mapping with MQF Cluster of Learning Outcomes	C1	C2				C3D			C4A																															
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9	Transferable Skills (if applicable)	(Skills learned in the course of study which can be useful and utilized in other settings) <table border="1"> <tr> <td>1</td> <td>Cognitive skills</td> </tr> <tr> <td>2</td> <td>Personal Skills</td> </tr> <tr> <td>3</td> <td>Digital Skills</td> </tr> <tr> <td colspan="2">Open-ended response (if any)</td> </tr> <tr> <td>4</td> <td></td> </tr> </table>										1	Cognitive skills	2	Personal Skills	3	Digital Skills	Open-ended response (if any)		4																																																																																																																																																																																	
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Course Content Outline and Subtopics		CLO*	Learning and Teaching Activities**										Total SLT
			Face-to-Face (F2F)								NF2F Independent Learning (Asynchronous)		
			Physical				Online/ Technology-mediated (Synchronous)						
			L	T	P	O	L	T	P	O			
1	Introduction to System Paradigms - Definition and significance - Historical development and influential thinkers	1	2	2								2	
2	Principles of Various System Paradigms - Procedural programming - Object-oriented programming - Functional programming - Event-driven programming	1	2	2								2	
3	Comparison of System Paradigms - Impact of Paradigms on System Performance	1	2	2								2	
4	User-Centric Architecture in IT Systems - Principles of user-centered design (UCD) - Techniques for gathering user requirements - Case studies of user-centric IT systems	2	2	2								4	
5	Service-Oriented Architecture (SOA) - Introduction to SOA and its components - Benefits and challenges of implementing SOA - Examples of SOA in real-world applications	2	2	2								4	
6	Enterprise Architecture (EA) - Overview of enterprise architecture frameworks (e.g., TOGAF, Zachman) - Role of EA in strategic planning - Case studies of successful EA implementations	2	2	2								4	
7	System Lifecycle and Architecture - Phases of the system development lifecycle (SDLC) - How different architectures influence each phase - Best practices for aligning architecture with the system lifecycle	2	2	2								4	
8	Procurement Management in IT - Principles of IT procurement management - Best practices for IT procurement	3	2	2								4	
9	Risk Management in IT Projects - Identifying and mitigating risks in IT projects - Risk management frameworks	3	2	2								4	
10	IT Governance - IT governance frameworks (e.g., COBIT, ITIL) - Role of governance in IT procurement and performance testing	3	2	2								4	
11	AI and Machine Learning in IT - Overview of AI/ML applications in IT - Case studies of AI/ML improving system performance	4	2	2								2	
12	Cloud Computing Solutions - Benefits and challenges of cloud adoption - Best practices for cloud resource management	4	2	2								2	
13	Edge and IoT Computing - Architectures for edge and IoT deployments - Security and privacy considerations in edge computing	4	2	2								2	
14	Blockchain for IT Systems - Introduction to blockchain technology - Use cases for blockchain in improving system performance	4	2	2								2	

15																			
16																			
17																			
18																			
19																			
20																			
SUB-TOTAL SLT:																			98
Continous Assesement		%	Face-to-Face (F2F)				NF2F Independent Learning for Assessment (Asynchronous)												
			Physical		Online/ Technology- mediated (Synchronous)														
1	Test	20%	2				2												
2	Assignment	40%					8												
3																			
4																			
5																			
SUB-TOTAL SLT:																			12
Final Assesement		%	Face-to-Face (F2F)				NF2F Independent Learning for Assessment (Asynchronous)												
			Physical		Online/ Technology- mediated (Synchronous)														
1	Final Exam	40%	2				8												
2																			
3																			
4																			
5																			
SUB-TOTAL SLT:																			10
SLT for Assessment:																			22
GRAND TOTAL SLT:																			120
A	% SLT for F2F Physical Component: [Total F2F Physical / (Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]																		50.00
B	% SLT for Online & Independent Learning Component: [(Total F2F Online + Total Independent Learning) / (Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]																		50.00
C	% SLT for All Practical Component: [% F2F Physical Practical + % F2F Online Practical]																		0.00
C1	% SLT for F2F Physical Practical Component [Total F2F Physical Practical / (Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]																		0.00
C2	% SLT for F2F Online Practical Component [Total F2F Online Practical / (Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]																		0.00

Please tick (v) if this course is **Industrial Training/ Clinical Placement/ Practicum** using 50% of Effective Learning Time (ELT)

Note:

* Indicate the CLO based on the CLO's numbering in Item 8

** For ODL programme: Courses with mandatory practical requirements imposed by the programme standards or any related standards can be exempted from complying to the minimum 80% ODL delivery rule in the SLT.

11	Identify special requirement or resources to deliver the course (e.g., software, nursery, computer lab, simulation room etc)	N/A
12	References (include required and further readings, and should be the most current)	1. Lowdermilk, T., & Rich, J. (2022). User-Centered Design: A Developer's Guide to Building User-Friendly Applications. O'Reilly Media. 2. Brewer, J. L., & Dittman, K. C. (2022). Methods of IT project management (4th ed.). Purdue University Press. 3. Hardy, G. (2021). The IT Governance Handbook: Managing and Controlling Information Technology in the Modern Enterprise. IT Governance Publishing.
13	Other additional information (if applicable)	N/A

Note: Number of PLO indicated is purely for illustration purposes only and the number is subjected to the curriculum design.