TRƯỜNG ĐẠI HỌC FPT

DANANG CAMPUS

KẾ HOẠCH TRIỂN KHAI HỌC PHẦN
PLAN OF COURSE IMPLEMENTATION

1. Tên học phần/*Course name: Discrete Mathematics*

2. Thời gian triển khai: Học kỳ: Fall 2024 (60% SC)

3. *3. Lịch triển khai môn học*

Topic	Session	nSlot	Content	Traditional/ SC	MARK
1. Logic	1	1	0 Introduction 1.1 Propositional Logic (1.1 and 1.2, skip the topic on Logic Circuits)	Traditional	AS1
	2		1.2 Propositional Equivalences (1.3, skip the topic on Satisfiability)		
	3		1.3 Predicates (1.4)		
	4	2	1.3 Quantifiers	Social Constructivism	
	5		1.4 Nested Quantifiers: introduction, translating (1.5)		
	6		1.4 Negating Nested Quantifiers		
	7	3	1.5 Rules of Inference for Propositional Logic (1.6)	Social Constructivism	
	8		1.5 Rules of Inference for Quantified Statements		
	9		2.1 Introduction to sets		
2. Basic Structures	10	4	2.2 Set operations	Social Constructivism	
	11		2.3 Introduction to functions (2.3, skip the topic on Partial Functions)		
	12		2.3 Inverse Functions and Compositions of Functions		
	13	5	2.4 Sequences (2.4, skip the topic on Recurrence relations)	Traditional	
Progress Test 1	14		2.4 Summations		
	15		**Review**		
3. Algorithms	16	6	**Progress Test 1**	Traditional	TE1
	17		3.1 Algorithms		AS2
	18		3.2 The Growth of Functions		
	19	7	3.3 Complexity of Algorithms (3.3, skip the topics on Matrix multiplication, Algorithmic Paradigms)	Social Constructivism	
4. Integers	20		3.4 The Integers and Division (4.1)		
	21		3.4 Applications of Congruences (4.5, and the topic on Classical Cryptography 4.6)		
	22	8	3.5 Primes (4.3)	Social Constructivism	
	23		3.5 Greatest Common Divisors		
	24		3.6 Integer Representations (4.2)		
	25	9	3.6 Algorithms for Integer Operations	Social Constructivism	
	26		3.6 Modular Exponentiation		
5. Induction and Recursion	27		4.1 Mathematical Induction (5.1)		
	28	10	4.2 Strong Induction (5.2)	Traditional	
	29		4.3 Recursive Definitions (5.3)		
	30		4.3 Structural Induction		

	31	11	4.4 Recursive Algorithms (5.4)	Social Constructivism	
	32		4.4 Recursion and Iteration, Merge Sort		
6. Counting	33		5.1 Basic Counting Principles (6.1)		
	34	12	5.1 More Complex Counting Problems	Traditional	
	35		7.1 Recurrence Relations (8.1, skip the topic on Dynamic programming)		
	36		7.3 Divide-and-Conquer Algorithms and Recurrence Relations (8.3)		
Progress Test 2	37	13	**Review**	Traditional	
	38		**Progress Test 2**		TE2
7. Graphs	39		9.1 Graphs and Graph Models (10.1)		AS3
	40	14	9.2 Graph Terminology and Special Types of Graphs	Social Constructivism	
	41		9.3 Representing Graphs (10.3)		
	42		9.3 Graph Isomorphism		
	43	15	9.4 Paths and Circuits (10.4)	Social Constructivism	
	44		9.4 Connectedness		
	45		9.5 Euler path and circuit (10.5)		
	46	16	9.5 Hamilton path and circuit	Social Constructivism	
	47		9.6 Shortest Path Problem (10.6)		
	48		9.6 The Traveling Salesperson Problem		
8. Trees	49	17	10.1 Introduction to Trees (11.1)	Social Constructivism	
	50		10.1 Properties of Trees		
	51		10.2 Decisions tree and Binary Search tree (11.2)		
	52	18	10.2 Prefix code and Huffman tree	Social Constructivism	
	53		10.3 Tree Traversal (11.3)		
	54		10.3 Prefix and Postfix form		
	55	19	10.4 Spanning Trees (11.4)	Social Constructivism	
	56		10.4 Depth First and Breadth First Searchs		
	57		10.5 Minimum Spanning Trees (11.5)		
	58	20	10.5 Algorithms for Minimum Spanning Trees	Traditional	
Progress Test 3	59		**Review**		
	60		**Progress Test 3**		TE3
			FINAL EXAM: 60 Minutes, 50 MC questions		

Người phê duyệt/*Approver* *GĐCS/Campus's Director*	Người kiểm tra/*Reviewer* *TBĐT/Head of Academic Affairs Board)*	Người lập/*Creator*
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