



## KÉ HOẠCH TRIỂN KHAI HỌC PHẦN PLAN OF COURSE IMPLEMENTATION

## DANANG CAMPUS

- 1. Tên học phần/Course name: Discrete Mathematics
- 2. Thời gian triển khai: Học kỳ: SUMMER 2023 (50% Social Contructivism)

3. Lịch triển khai môn học

Committee   Comm		Slot		knai mon nọc	Traditional / Social Contructivism:	Group
Propositional Equivalences Doubtiffer Doubti	Week		Topic	Content		Round
Treditates   Countries   Section   Treditional   Section   Secti	01:08/05-14/05	1			Traditional	
Negating Nested Quantifiers  Logically inference  Logically inference of compositional Logic Logically inference of monotonic compositions to compositions of the composition of the com						
Negating Nested Quantifiers  Segriculty Inference  Logically Inference		2		Quantifiers	SC01_DN[02] R1_Quantification expresses the extent to which a predicate is true over a	A-1
Negating Nested Quantifiers  Segriculty Inference  Logically Inference			[1] Logic	Nested Quantifiers: introduction, translating	R2_We will often want to consider the negation of a quantified expression. How is	B-2
Display Interesce   Traditional   Traditiona				Negating Nested Quantifiers	R3_Nested quantifiers commonly occur in mathematics and computer science. How to	C-3
Second Complete   Traditional   Traditiona	02:15/05-21/05	3		Logically Inference	ase frested quantifiers to express mathematical statements and/or Engish sentences.	
Review II-3 with MC (multi choices questions) Progress Test I [00 minutes, 30 questions) The Growth of Functions The Growth of The Growth of Functions					Traditional	
Review 1.21 with MC (multi choices questions)  Progress Test 1 (00 minutes, 30 questions)  Algorithms  Algorithms  Complexity of					SC02_DN[04] R1_How many ways to combine Two, or more, sets?	D-1
Review II-3 with MC (multi choices questions) Progress Test I [00 minutes, 30 questions) The Growth of Functions The Growth of The Growth of Functions		4	[2] Basic Structures			E-2
Review [1-2] with MC (multi choices questions)  Fractitional  Fractional  Traditional					R3_Sequence is an important data structure in computer science. Give two ways to	L-2
Progress Test 1 (50 minutes, 30 questions)  Progress Test 2 (50 minutes, 30 questions)  Progress Test 2 (50 minutes, 30 questions)  Progress Test 3 (50 minutes)  Progress Test 3				·	describe the terms of a sequence?	F-3
Discuss  Algorithms  The Growth of Functions  The Growth of Functions  The Growth of Functions  Complexity of Algorithms  Traditional  Integer Representations, Greatest Common Divisors  teast Common multiples, Sprines  Traditional  Modular Exponentiation  Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating president on the Applications of Congruences; Cryptography  Hashing, generating presi	03:22/05-28/05	5	Test 1		Traditional	
Complexity of Algorithms  Traditional  Integers and Division, Greatest Common Divisor Least common multiples, Primes Integer and Division, Greatest Common Divisor Least common multiples, Primes Integer Representations: Algorithms  Modular Exponentiation Applications of Congruences: Cryptography Hashing, Benerating pseudo-random numbers  Applications of Congruences: Cryptography Hashing, Benerating pseudo-random numbers  Integer Representations: Algorithms  Review (1-4) with MC Progress Test 2, 627; 35-90  Popular Division  Progress Test 3, 627; 35-90  Popular Division  Progress Test 3, 627; 35-90  Pricks and Connected mess  Progress Test 3, 627; 35-90  Pricks and Connected mess  Progress Test 3, 627; 35-90  Pricks and Connected mess  Pricks and Connected mess  Pricks and Connected mess  Pricks and Connected mess  Pricks and PostTix form  Pricks and PostTix form  Progress Test 3, 627; 35-90  Pricks and PostTix form  Progress Test 3, 627; 35-90  Pricks and PostTix form  Progress Test 3, 627; 35-90  Pricks and PostTix form  Progress Test 3, 1627; 15-90  Progress Test 3, 1627; 1					_	
Complexity of Algorithms  Complexity of Algorithms  Integers and Division, Greetest Common Divised Least common multiples, Primes Integer Representations: Algorithms  Modular Exponentiation  Applications of Congruences: Cryptography  Applications of Congruences: Cryptography  Applications of Congruences: Cryptography  Bashing, Benerating pseudo-random numbers  Isal Mathematical induction  Review (3-4) with MC  Progress Test 2, 627; 15-63  Progress Test 2, 647; 25-63  Progress Test 3, 647; 25-63  Progress		6	[3] Algorithms	Algorithms		A-1
Complexity of Algorithms				The Growth of Functions	R2_Prove that in the the worst case, for an increasing array, the binary search algorithm	B-2
Integers and Division, Greatest Common Divisors   Common Divisor					R3_The bubble sort and the insertion sort are two basic sorting algorithms. Analyze the	C-3
Second common multiples, Primes   Integer Representations   Integer Representations   Integer Representations   Integer Representations   Applications of Congruences: Cryptography   Hashing, generating pseudo-random numbers   12,000 per					worst-case complexity of two those algorithms?	
Hashing, generating pseudo-random numbers in 3, low to encrypt messages using classical ciphers?  [S.a) Mathematical induction Review [3-4] with MC Progress Text 2.a (25', 15G) Recursive: Definitions, Algorithms Recursive: Definitions, Recursive: Definitions, Definitions, Recursive: Definitions of parts of the graph search recursive: Decisions tree  Paths: Cream of the graph search recursive: Definitions of parts of the graph search recursive: Decisions tree  Prefix code and Huffman tree Decisions tree  Recursive: Definitions of parts of the graph search recursive: Decisions tree  Recursive: Definitions of parts of the graph search recursive: Decisions tree  Recursive: Definitions of parts of the graph search recursive: Decisions tree  Recursive: Definitions of parts of the graph search recursive: Decisions tree  Recursive: Definitions of parts of the graph search recursive: Decisions tree  Recursive: Definitions of parts of the graph search recursive and deges of parphitic recursive and deges of parts training and receive of the graph search recursive and parts of the graph search recursive and parts of the graph sear	04:29/05-04/06			Least common multiples, Primes	Traditional	
Hashing, generating pseudo-random numbers in the progress of pseudorandom numbers and to do hashing?  (S.al) Mathematical induction Review [3-4] with MC Progress Test 2.a (257, 154)  Recursive: Definitions, Algorithms Recursive: Definitions, Review (1) with MC Progress Test 2.b (407, 256)  13 Graphs: Terminology, Special Types Representing Graphs Re			gers		SCOA DNIGO DA It is important to be able to find modular exponentiation. How to use	D-1
Hashing, generating pseudo-random numbers in 3, low to encrypt messages using classical ciphers?  [S.a] Mathematical induction Review [3-4] with MC Progress Test 2.a (257, 156)  [S.a] Mathematical induction Review [3-4] with MC Progress Test 2.a (257, 156)  [S.a] Mathematical induction Review [3-4] with MC Progress Test 2.a (257, 156)  [S.a] Mathematical induction Recursive: Definitions, Algorithms Recursive: Definitions, Definitions, Review [3-4] with MC Progress Test 2.b (407, 256)  [S.a] Mathematical induction Recursive: Definitions, Algorithms Recursive: Definitions, Algorithms Recursive: Definitions, Algorithms Recursive: Definitions, Progress Test 2.b (407, 256)  [S.a] Mathematical induction Recursive: Definitions, Algorithms Recursive: Definitions, Progress Test 2.b (407, 256)  [S.a] Mathematical induction Recursive: Definitions of paths and progress test 2.b (407, 256)  [S.a] Mathematical induction Recursive: Definitions of paths and progress test 2.b (407, 256)  [S.a] Mathematical induction Recursive: Definitions of paths and progress and properties Recursive: Definitions of paths and progress definitions of paths and paths and circuit traversing each adee of the graph sexting each dependent of the graph sexty once?  [S.a] New Year (154, 154, 154, 154, 154, 154, 154, 154,			[4] Into	<u> </u>	the binary expansion to compute modular exponentiation efficiently?	
Second Part						E-2
Recursive: Definitions, Algorithms Progress Test 2.a (25', 15d)  Recursion searching/sorting Enumerating problem Enumeration path propers problem Enumerating problem Enumeration path propers problem Enumeration path propers problem Enumerating problem Enumeration path propers problem Enumerating problem Enumeration path prop					R3_How to encrypt messages using classical ciphers?	F-3
Recursive: Definitions, Algorithms  Recursion: Searching/Sorting	05:05/06-11/06	9	st2.c		Traditional	
Formula problem   R3   Using recursion to list/enumerate the bit strings, combinators?					SCOR DNI(10) P1. Can we solve a problem by reducing it to an instance of the same	A-1
Section   Page   Enumerating problem   R3   Using recursion to list/enumerate the bit strings, combinators?		10	[5.b] Recursion		problem with smaller input? Give simple examples?	
12   Section   12   Section   13   Section   14   15   Section   15   Section   15   Section   16   Section   16   Section   17   Section   18   Section						B-2 C-3
12   Section   12   Section   13   Section   14   15   Section   15   Section   15   Section   16   Section   16   Section   17   Section   18   Section	<b>06</b> :11/06-18/06	11	i] ting			
Graphs: Terminology, Special Types Representing Graphs Representing obsessible to degraph starting at a vertex and returning to it by traversing each edge of the graph starting at a vertex and returning to it by traversing each edge of the graph starting at a vertex and returning to it by traversing each edge of the graph starting at a vertex and returning to it by traversing each edge of the graph starting at a vertex and returning to it by traversing each edge of the graph starting at a vertex and returning to it by traversing each edge of the graph starting at a vertex and returning to it by trav					Traditional	
Graphs: Terminology, Special Types Representing Graphs Representing Represented the whether it is possible to draw two graphs in the same way?  Scor_DN[14] Rt_Gree definitions of paths, circuits and connectedness in graphs? Representing Graphs Representing Graphs and connectedness in graphs? Representing Graphs and connectedness in graphs? Representing Graphs and connectedness in graphs? Representing Graphs and connectedness in graphs Represented on the same vary and connectedness in graphs? Representing Graphs and connectedness in graphs and connectedness in graphs and connectedness in graphs and connectedness in graphs? Representing Graphs and circuit represents and circuit represents and circui					traditional	
Representing Graphs R2_How many ways to represent graphs? Discuss about their pros and cons? Graph isomorphism R3_Can we determine the spossible to draw two graphs in the same way?  Paths, Circuits and Connectedness R3_Can we determine the spossible to draw two graphs in the same way?  Paths, Circuits and Connectedness R3_Can we determine the spossible to draw two graphs in the same way?  Paths, Circuits and Connectedness R3_Can we determine to graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edge of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edges and properties of the graph exactly once?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edges on that an text on can be easily located?  R3_Can we travel all edges of a graph starting at a vertex and returning to it by traversing each edges on the tr						
Graph Isomorphism   R3_Can we determine whether it is possible to draw two graphs in the same way?						D-1
Hamilton path and circuit  Shortest Path Problems Dijkstra's Algorithm Traditional	5/06	13				E-2 F-3
Hamilton path and circuit  Shortest Path Problems Dijkstra's Algorithm Traveling Salesperson Problem  Is Progress Test 3.a (40′, 25q) Discuss  Trees: terminologies and properties Blinary search tree Decisions tree Decisions tree Prefix code and Huffman tree Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS Minimum Spanning Trees: PRIM  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC Progress Test 3.b (25′, 15q) FINAL Test (60′ minutes, 50 questions)  Progress Test 3.b (25′, 15q) FINAL Test (60′ minutes, 50 questions)  Traditional	-90/			Paths, Circuits and Connectedness		A-1
Hamilton path and circuit  Shortest Path Problems Dijkstra's Algorithm Traveling Salesperson Problem , Review [7] with MC Progress Test 3.a (40′, 25q) Discuss  Trees: terminologies and properties Binary search tree Decisions tree Prefix code and Huffman tree Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS Minimum Spanning Trees: PRIM Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC Progress Test 3.b (25′, 15q) Final Test (60′ minutes, 50 questions)  Ra_Can we find the simple paths and circuits that contain every vertex of the graph exactly once?  Ra_Can we find the simple paths and circuits that contain every vertex of the graph exactly once?  Ra_Can we find the simple paths and circuits that contain every vertex of the graph exactly once?  Traditional  Traditional  Traditional  Traditional  Traditional  Ra_Can we find the simple paths and circuits that contain every vertex of the graph exactly once?  Traditional  Traditional  Traditional  Ra_Can we find the simple paths and circuits that contain every vertex of the graph exactly once?  Traditional  Traditional  Traditional  Ra_Can we find the simple paths and circuits that contain every vertex of the graph exactly once?  Traditional	7:19		[7] Grap	Euler path and circuit		B-2
Shortest Path Problems   Dijkstra's Algorithm   Traveling Salesperson Problem   Intervention of the progress Test 3. (a (40', 25q)   Discuss				Hamilton path and circuit		C-3
Trees: terminologies and properties  Binary search tree  Binary search tree  Decisions tree  Prefix code and Huffman tree  Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC Progress Test 3.b (25 ', 15q)  FINAL Test (60' minutes, 50 questions)  Trees: terminologies and properties of trees?  SCOB_DN[17] R1_Trees have been employed to solve problems in a wide variety of disciplines. Give some terminologies and properties of trees?  R2_How should items in a list be stored so that an item can be easily located?  R3_How the decisions should be made to find an object with a certain property in a collection of objects of a certain type?  Prefix code and Huffman tree  SCOB_DN[18] R1_How should a text be efficiently coded by bit strings using a tree?  R2_Ordered rooted trees are often used to store information. How many ways to visit each vertex of an ordered rooted tree to access data?  R3_How to convert an expression from infix form to postfix one?  SCOB_DN[18] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Review [8] with MC  Progress Test 3.b (25 ', 15q)  FINAL Test (60' minutes, 50 questions)	- 20			Shortest Path Problems	Chacty office.	0.3
Trees: terminologies and properties  Binary search tree  Binary search tree  Decisions tree  Prefix code and Huffman tree  Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC Progress Test 3.b (25', 15q) FINAL Test (60' minutes, 50 questions)  Trees: terminologies and properties of trees?  SCOB_DN[17] R1_Trees have been employed to solve problems in a wide variety of disciplines. Give some terminologies and properties of trees?  R2_How should items in a list be stored so that an item can be easily located?  R3_How should items in a list be stored so that an item can be easily located?  R3_How should items in a list be stored so that an item can be easily located?  R3_How should items in a list be stored so that an item can be easily located?  R3_How should remain a list be stored so that an item can be easily located?  R2_Orderd rooted tree to eccess of that an every early easily located?  R3_How to convert an expression from infix form to postfix one?  SC10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Review [8] with MC  Progress Test 3.b (25 ', 15q)  FINAL Test (60' minutes, 50 questions)	-05/	15				
Trees: terminologies and properties  Binary search tree  Binary search tree  Decisions tree  Prefix code and Huffman tree  Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC Progress Test 3.b (25', 15q) FINAL Test (60' minutes, 50 questions)  Trees: terminologies and properties of trees?  SCOB_DN[17] R1_Trees have been employed to solve problems in a wide variety of disciplines. Give some terminologies and properties of trees?  R2_How should items in a list be stored so that an item can be easily located?  R3_How should items in a list be stored so that an item can be easily located?  R3_How should items in a list be stored so that an item can be easily located?  R3_How should items in a list be stored so that an item can be easily located?  R3_How should remain a list be stored so that an item can be easily located?  R2_Orderd rooted tree to eccess of that an every early easily located?  R3_How to convert an expression from infix form to postfix one?  SC10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Review [8] with MC  Progress Test 3.b (25 ', 15q)  FINAL Test (60' minutes, 50 questions)	90/9		o.		Traditional	
Trees: terminologies and properties  Binary search tree  Binary search tree  Decisions tree  Decisions tree  Prefix code and Huffman tree  Tree Traversal Prefix and Postfix form  By Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC  Progress Test 3.b (25', 15q)  FINAL Test (60' minutes, 50 questions)  Traditional  Traditional  FINAL Test (60' minutes, 50 questions)  Traditional  Prefix solve problems in a wide variety of disciplines. Give some terminologies and properties of trees?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_How should items in a list be stored so that an item can be easily located?  R2_Dorderd rooted trees are often used to store information. How many ways to visit each vertex of an ordered rooted tree to access data?  R3_How to convert an expression from infix form to postfix one?  Sco1_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm Palm. How it works?  R3_A different algorithm to find minimum spanning	08:5	16	Test 3			
Binary search tree  Decisions tree  Decisions tree  Prefix code and Huffman tree  Tree Traversal  Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC  Progress Test 3.b (25 ', 15q)  FINAL Test (60' minutes, 50 questions)  Binary search tree  R2_How should items in a list be stored so that an item can be easily located?  R3_How should sext be efficiently coded by bit strings using a tree?  R2_Ordered rooted tree to access data?  R2_Prefix and Postfix form  R2_Ordered rooted tree to access data?  R3_How to convert an expression from infix form to postfix one?  Sc10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm RRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Traditional						D-1
Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  R3_How to convert an expression from infix form to postfix one?  SC10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Review [8] with MC Progress Test 3.b (25 ', 15q) FINAL Test (60' minutes, 50 questions)  Traditional	/0/			Binary search tree		E-2
Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  R3_How to convert an expression from infix form to postfix one?  SC10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Review [8] with MC Progress Test 3.b (25 ', 15q) FINAL Test (60' minutes, 50 questions)  Traditional	07-16			Decisions tree	R3_What series of decisions should be made to find an object with a certain property in	
Tree Traversal Prefix and Postfix form  Spanning Trees: Depth First Search and BFS  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  R3_How to convert an expression from infix form to postfix one?  SC10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Review [8] with MC  Progress Test 3.b (25 ', 15q) FINAL Test (60' minutes, 50 questions)  Traditional	9:10/			Prefix code and Huffman tree	SC09_DN[18] R1_How should a text be efficiently coded by bit strings using a tree?	A-1
Spanning Trees: Depth First Search and BFS  Spanning Trees: Depth First Search and BFS  Minimum Spanning Trees: PRIM  Kruskal's algorithm for Minimum Spanning Trees  Review [8] with MC  Progress Test 3.b (25 ', 15q)  FINAL Test (60' minutes, 50 questions)  FINAL Test (60' minutes, 50 questions)  Spanning Trees: Depth First Search and BFS  Spanning Trees: Depth First Search and BFS  RC10_DN[19] R1_How many ways to find a connected subgraph with the minimum number of edges containing all vertices of the original simple graph?  R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?  R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm. Describe how it works and its difference compared to PRIM?  Traditional						B-2
19   Minimum Spanning Trees: PRIM   Review [8] with MC   Progress Test 3.b (25 ', 15q)   FINAL Test (60' minutes, 50 questions)   Progress Test 3.b (26 ', 15q)   FINAL Test (60' minutes, 50 questions)   Number of edges containing all vertices of the original simple graph?   R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?   R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm.   Describe how it works and its difference compared to PRIM?   Progress Test 3.b (25 ', 15q)   Traditional			∞	Prefix and Postfix form	R3_How to convert an expression from infix form to postfix one?	C-3
20 Progress Test 3.b (25 ', 15q) FINAL Test (60' minutes, 50 questions)  Traditional	10:17/07-23/07	19		Spanning Trees: Depth First Search and BFS	number of edges containing all vertices of the original simple graph?	D-1
20 Progress Test 3.b (25 ', 15q) FINAL Test (60' minutes, 50 questions)  Traditional				Minimum Spanning Trees: PRIM	R2_To find a spanning tree in a weighted graph such that the sum of the weights of the edges in the tree, we can use the algorithm PRIM. How it works?	E-2
20 Progress Test 3.b (25 ', 15q) FINAL Test (60' minutes, 50 questions)  Traditional				Kruskal's algorithm for Minimum Spanning Trees	R3_A different algorithm to find minimum spanning tree is Kruskal's algorithm.	F-3
FINAL Test (bu minutes, so questions)			:: as ::	Review [8] with MC		
FINAL Test (bu minutes, so questions)		20	Test 3.b≀ FINA			
Assignments (30%): A1 10%, A2 10%, A3 10%; Tests (30%): T1 10%, T2.a 5%, T2.b 5%, T3.a 5%, T3.b 5%; FINAL+phát biểu: điểm cộng,		As				

Người phê duyệt/Approver
GĐCS/Campus's Director
Họ tên/Name: Trần Ngọc Anh
Ngày/Date: 05/2023
Người kiểm tra/Reviewer
TBĐT/Head of Academic Affairs Board)
Người lập/Creator
CNBM/Head of department
Họ tên/Name: Họ tên/Name: Trần Ngọc Anh
Ngày/Date: 05/2023

03.02-BM/ĐH/HDCV/FPTU 1/0 1/1