



## SESSION PLAN


### Lecture

COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics


SESSION PARTICULARS		
#: 1	Title: Course Overview, Course Outline & Logic	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Over viewing course topics and outline
2	Discussing Propositions
3	Understanding ways of combining propositions using AND, OR, XOR, and NOT
4	Understanding NAND and NOR Operators
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**Prepared by:**  
Designation: Course Coordinator  
Name: Dr. Mahmoud Youssef

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Date: 21/1/2009

**Approved by:**  
Designation: Program Manager  
Name: Dr. Mahmoud Youssef

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**Lecture**

**Source Material**

Discrete Mathematics and its Applications by Kenneth H. Rosen, McGraw-Hill.

**Supplementary Material**

Discrete Mathematics by Johnson Baugh, ISBN: #0131277677, Pearson Education.

**Educational Resources**

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#### COURSE PARTICULARS

EC115(CR111)	Title: Discrete Mathematics
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#### SESSION PARTICULARS

#: 2	Title: Implication and Double Implications	Hrs: 2Hrs
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#### LEARNING OUTCOMES / ABILITIES GAINED\*

#	Outcome Description
1	Understanding ways of combining propositions using implications
2	Understanding double implication
3	Understanding and applying the precedence of logical operators
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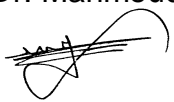
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EC115(CR111)	Title: Discrete Mathematics

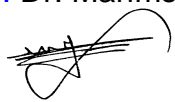
SESSION PARTICULARS		
#: 3	Title: Logical Equivalences	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Understanding propositional equivalence
2	Learning how to test for equivalence
3	Understanding Tautologies and Contradictions
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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics


SESSION PARTICULARS		
#: 4	Title: Translating English Sentences and Bit Operators	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Learning how to translate English phrases to propositional statements and vice versa
2	Learning how to apply logical operations to bit strings
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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics

SESSION PARTICULARS		
#: 5	Title: Predicates and Quantifiers	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Discussing the creation of propositions from propositional functions using quantifiers
2	Understanding universal and existential quantifiers
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EC115(CR111)	Title: Discrete Mathematics

SESSION PARTICULARS		
#: 6	Title: SETS	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Understanding sets
2	Studying the power sets
3	Applying Cartesian products
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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics

SESSION PARTICULARS		
#: 8	Title: Set Operations	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Understanding basic set operations
2	Understanding Set identities
3	Learning how to apply union and intersection operations
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#### COURSE PARTICULARS

EC115(CR111)	Title: Discrete Mathematics
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#### SESSION PARTICULARS

#: 9	Title: Functions	Hrs: 2Hrs
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#### LEARNING OUTCOMES / ABILITIES GAINED\*

#	Outcome Description
1	Understanding the basic concepts of functions
2	Differentiating One-To-One and ONTO functions
3	Understanding and learning how to compose functions and inverse of functions
4	Learning how to create graphs of functions
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MPC3/3-1

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#### COURSE PARTICULARS

EC115(CR111)	Title: Discrete Mathematics
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#### SESSION PARTICULARS

#: 10	Title: Relations	Hrs: 2Hrs
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#### LEARNING OUTCOMES / ABILITIES GAINED\*

#	Outcome Description
1	Learning how functions and relations are related
2	Understanding relations on a set
3	Understanding properties of relations
4	Learning how to combine relations
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## SESSION PLAN


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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics


SESSION PARTICULARS		
#: 11	Title: N-ary Relations and their applications	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Understanding N-ary relations
2	Learning how databases and relations are related
3	Applying operations on n-ary relations
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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics

SESSION PARTICULARS		
#: 12	Title: Representing relations	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Learning how to represent relations using matrices
2	Learning how to represent relations using directed graphs
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## SESSION PLAN

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#### COURSE PARTICULARS

EC115(CR111)	Title: Discrete Mathematics
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#### SESSION PARTICULARS

#: 13	Title: Introduction to Graphs	Hrs: 2Hrs
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#### LEARNING OUTCOMES / ABILITIES GAINED\*

#	Outcome Description
1	Learning the basic concepts of graphs
2	Differentiating and creating different types of graphs: simple, multi, pseudo, directed, directed multigrpah

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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics

SESSION PARTICULARS		
#: 14	Title: Trees	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1	Learning basic types of tree
2	Learning elements of trees
3	Understanding basic search techniques in trees
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COURSE PARTICULARS	
EC115(CR111)	<b>Title:</b> Discrete Mathematics

SESSION PARTICULARS		
<b>#:</b> 15	<b>Title:</b> Revision	<b>Hrs:</b> 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
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COURSE PARTICULARS	
EC115(CR111)	Title: Discrete Mathematics


SESSION PARTICULARS		
#: 16	Title: Final Exam	Hrs: 2Hrs

LEARNING OUTCOMES / ABILITIES GAINED*	
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