

<b>Course Code</b>	MTH210		
<b>Course Name</b>	Discrete Structures		
<b>Credits</b>	4		
<b>Course Offered to</b>	UG		
<b>Course Description</b>	This is a basic course in discrete mathematics, tailored for students in the computer science and applied math program. The course is intended to give students an exposure to formal mathematical language, the notion of proofs, and basic discrete structures such as graphs and permutations, as well as discrete probability and the probabilistic method.		
<b>Pre-requisites</b>			
<b>Pre-requisite (Mandatory)</b>	<b>Pre-requisite (Desirable)</b>	<b>Pre-requisite(other)</b>	
	None		
*Please insert more rows if required			
<b>Post Conditions*(For suggestions on verbs please refer the second sheet)</b>			
<b>CO1</b>	<b>CO2</b>	<b>CO3</b>	<b>CO4</b>
Ability to understand and express ideas in a precise mathematical language.	Ability to come up with and write proofs via various proof techniques such as direct, contrapositive, contradiction, and induction.	Understand discrete structures such as graphs and basic combinatorial identities such as the binomial coefficients, the factorial function, etc. and their applications in counting discrete structures.	Be introduced to basic applications of discrete structures in computer science and mathematics.
<b>Weekly Lecture Plan</b>			
<b>Week Number</b>	<b>Lecture Topic</b>	<b>COs Met</b>	<b>Assignment/Labs/Tutorial</b>
1	Propositional and Predicate Calculus.	1 and 2	Weekly homework and tutorial.
2	Functions, Relations, Order	1 and 2	Weekly homework and tutorial.
3	Combinatorial Counting	1,2, 3 and 4	Weekly homework and tutorial.
4	Estimates and asymptotic notation.	1,2, 3 and 4	Weekly homework and tutorial.
5	Recurrences and solving recurrences	1,2, 3 and 4	Weekly homework and tutorial.
6	Graphs	1,2, 3 and 4	Weekly homework and tutorial.
7	Drawing graphs in the plane	1,2, 3 and 4	Weekly homework and tutorial.
8	Double counting	1,2, 3 and 4	Weekly homework and tutorial.
9	Number of spanning trees.	1,2, 3 and 4	Weekly homework and tutorial.
10	Finite projective planes	1,2, 3 and 4	Weekly homework and tutorial.
11	Ramsey Theory	1,2, 3 and 4	Weekly homework and tutorial.
12	Generating functions	1,2, 3 and 4	Weekly homework and tutorial.
13	Probabilistic method	1,2, 3 and 4	Weekly homework and tutorial.
*Please insert more rows if required			
<b>Weekly Lab Plan</b>			
<b>Week Number</b>	<b>Laboratory Exercise</b>	<b>COs Met</b>	<b>Platform (Hardware/Software)</b>
*Please insert more rows if required			
<b>Assessment Plan</b>			
<b>Type of Evaluation</b>	<b>% Contribution in Grade</b>		
Homework	0		
Quiz	0		
Mid-sem	30		
Mid-sem	30		
End-sem	40		
*Please insert more row for other type of Evaluation			
<b>Resource Material</b>			
<b>Type</b>	<b>Title</b>		
Textbook			
Textbook	Invitation to Discrete Math, Jiri Matousek and Jaroslav		
Reference	Discrete Mathematics, Elementary and Beyond.		