

### Academic Calender July-Dec 2015

#### Lesson Plan

Week	Dates	Days	Lecture Schedule	List of Holidays
1st	20/07/2016-23/07/2016	4	Total Days: 100	List of Holidays
2nd	25/07/2016-30/07/2016	6	Holidays : 08	Sem. Break:11 oct.-16oct.2016
3rd	01/08/2016-06/08/2016	6	Total Teaching Days: 92	Aug. 15: Independence day
4th	08/08/2016-13/08/2016	6		Aug. 25: Janmashtami
5th	16/08/2016-20/08/2016	5		Sep. 12: Id-ul-Zuha
6th	22/08/2016-27/08/2016	5		Oct. 02: M.Gandhi B'Day
7th	29/08/2016-03/09/2016	6		Oct. 11: Dussehra
8th	05/09/2016-10/09/2016	6		Oct. 12: Muharram
9th	13/09/2016-17/09/2016	5		Oct. 30: Diwali
10th	19/09/2016-24/09/2016	6		Oct. 14: Guru Nanak B'Day
11th	26/09/2016-01/10/2016	6		
12th	03/10/2016-08/10/2016	6		
13th	10/10/2016-15/10/2016	1		
14th	17/10/2016-22/10/2016	6		
15th	24/10/2016-29/10/2016	6		
16th	31/10/2016-05/11/2016	6		
17th	07/11/2016-12/11/2016	6		

Department : Mathematics  
Course : B.Sc.(Physical Sciences)  
Semester : III(Sec: A+B+C)  
Subject : Algebra (MAPC-311)  
Teacher : Dr. Md. Sanam Suraj

#### Teaching Schedule (July-Dec. 2015)

Number of Class/Week: 5 Theory+1 Tutorial

Week	Topics	Remarks
1st	<ul style="list-style-type: none"> <li>★ Introduction to "GROUPS"</li> <li>★ Abelian and nonabelian group</li> <li>★ Examples of various group <ul style="list-style-type: none"> <li>● the group <math>Z_n</math> of integers under addition modulo <math>n</math></li> <li>● the group <math>U(n)</math> of integers under multiplication modulo <math>n</math></li> </ul> </li> </ul>	
2nd	<ul style="list-style-type: none"> <li>★ Introduction to "GROUPS" continued...</li> <li>★ The general linear group <math>GL(N, \mathbb{R})</math></li> <li>★ Example 1-20: page:42-46[1]</li> <li>★ Exercise: page:51-54[1]</li> <li>★ Order of Group, Order of an element</li> </ul>	<p>[1] Contemporary Abstract Algebra J A Gallian, 4th edition J A Gallian, 4th edition</p>

Week	Topics	Remarks
3rd	<ul style="list-style-type: none"> <li>★ The cyclic group</li> <li>★ Subgroup, Center of group, Centralizer of group</li> <li>★ Group of symmetries of (i) an isosceles &amp; equilateral triangle</li> <li>★ (ii) a rectangle</li> <li>★ Exercise: page:65-69[1]</li> </ul>	
4th	<ul style="list-style-type: none"> <li>★ The group of Quaternions</li> <li>★ Exercise: page:65-69[1] continued...</li> <li>★ Cyclic group continued...</li> <li>★ Exercise: page:79-82[1]</li> </ul>	Assignment: 1
5th	<ul style="list-style-type: none"> <li>★ The permutation group</li> <li>★ Order of permutation</li> <li>★ Exercise: page:107-110[1]</li> <li>★ Cosets</li> </ul>	Test:1st
6th	<ul style="list-style-type: none"> <li>★ Lagrange's Theorem</li> <li>★ Normal subgroup: definition &amp; examples</li> <li>★ Quotient group</li> <li>★ Exercise: page:142-145[1]</li> <li>★ Introduction to Rings</li> </ul>	
7th	<ul style="list-style-type: none"> <li>★ Rings continued...</li> <li>★ Commutative and Non-commutative rings &amp; examples</li> <li>★ The ring <math>Z_n</math>, Ring of Quaternions</li> <li>★ Rings of Matrices</li> </ul>	
8th	<ul style="list-style-type: none"> <li>★ Rings continued...</li> <li>★ Polynomial rings &amp; rings of continuous functions</li> <li>★ Example: page: 226-230[1]</li> <li>★ Exercise: page: 230-232[1]</li> </ul>	
9th	<ul style="list-style-type: none"> <li>★ Rings continued...</li> <li>★ Subrings</li> <li>★ Exercise: page: 230-232[1]</li> <li>★ Ideals</li> <li>★ Introduction to Integral domains</li> <li>★ Example: page:237-242</li> </ul>	Assignment: 3
10th	<ul style="list-style-type: none"> <li>★ Rings continued...</li> <li>★ Introduction to fields</li> <li>★ Characteristics of Rings</li> <li>★ Exercise: page: 242-244[1]</li> </ul>	Test: 2nd
11th	<ul style="list-style-type: none"> <li>★ Ideal continued...</li> <li>★ Exercise: page: 252-257[1]</li> </ul>	
12th	<ul style="list-style-type: none"> <li>★ Introduction to Vector Spaces</li> <li>★ Definition and Examples</li> <li>★ Example: page: 335-337[3]</li> </ul>	[2] C. W. Curtis: Linear algebra
13th	<ul style="list-style-type: none"> <li>★ Introduction to Subspaces</li> </ul>	Assignment: 3
14th	<ul style="list-style-type: none"> <li>★ Linearly independence</li> <li>★ Introduction to basis &amp; dimensions</li> <li>★ Examples and theorems</li> </ul>	

Week	Topics	Remarks
15th	<ul style="list-style-type: none"> <li>★ Introduction to linear transformation</li> <li>★ (i) on real vector spaces</li> <li>★ (i) on complex vector spaces</li> <li>★ Examples and theorems</li> </ul>	[3] Hoffman and Kunze: Linear algebra
16th	<ul style="list-style-type: none"> <li>★ Introduction to Rank and nullity</li> <li>★ Definition &amp; examples</li> <li>★ Theorems on kernel, rank &amp; nullity</li> </ul>	Test:3
17th	<ul style="list-style-type: none"> <li>★ Isomorphism theorem</li> <li>★ Problems and Examples</li> <li>★ Revision</li> </ul>	