

I	Course Code	MA 5006								
II	Course Title	Representation Theory								
III	Credit Structure	<table style="border: none; width: 100%;"> <tr> <td style="text-align: center;">L</td> <td style="text-align: center;">T</td> <td style="text-align: center;">P</td> <td style="text-align: center;">C</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">4</td> </tr> </table>	L	T	P	C	3	1	0	4
L	T	P	C							
3	1	0	4							
IV	Prerequisites (If any)	Algebra, Linear Algebra								
V	Course Content	<p>Groups, subgroups, normal subgroups, Quotient groups, Group action, orbit stabilizer theorem, Burnside Lemma, Linear Representations of finite groups and examples, subrepresentations, irreducible representations, Tensor product of two representations, Symmetric square and alternating square. Character of a representation, Schur's lemma, Orthogonality relations for characters, decomposition of regular representation, Number of irreducible representations, canonical decomposition of a representation, Product of two groups, Induced representations, representations of compact group. Group algebra, modules over group algebra, decomposition of group algebra, Mackey's irreducibility criterion, introduction to mod p representations.</p>								
VI	Text/References	<ol style="list-style-type: none"> 1. Linear Representations of Finite Groups, J. P. Serre, Translated from French by Leonard L Scott, Springer-Verlag 2. Algebra, Serge Lang, Revised Third Edition. 3. Algebra, David S. Dummit and Richard M. Foote 4. Algebra, Michel Artin 								