TEACHING PLAN OF D.G (2016-2017)

Debika Ghoshal

Paper	Topic	Year	Hons.	Time/Date	No. Of Class	Teaching Method	Reference
PAPER-II	Unit-1: Syllabus of Paper-II Group-A(Real Analysis) discuss, Define different type of numbers, recall previous study	2016	1st Year	01/08/16	1	Discussion about Topic and Board Work	➢ S.K.Mapa: Introduction to Real Analysis ➢ Maity and Ghosh: Differential Calculus
	Unit-2: Real Number, Set in R	2016	1st Year	08/08/16-03/09/16	11	Board Work	
	Unit-3: Sequence and Series	2016	1st Year	05/09/16-19/11/16	15	Board Work	
	Unit-4: Limit and Continuity	2017	1st Year	21/11/16-02/01/17	12	Board Work	
	Unit-5: Differentiability and MVT (Mean Value Theorem)	2017	1st Year	07/01/17-18/02/17	10	Board Work	

Paper	Topic	Year	Hons.	Time/Date	No. Of Class	Teaching Method	Reference
PAPER-III	Unit-1: Syllabus of Paper-III Group-A(Linear programming and Game theory) discuss	2016	2nd Year	01/08/2016	1	Discussion about Topic and Board Work	➢ P.M.Karak: Linear Programming
	Unit-2: Inequation, formation of problems from daily life involving inequations , slack and surplus variables, definition of L.P.P., canonical, standard and matrix form of L.P.P., solution of L.P.P. by graphical method. Basic solutions , feasible solution and basic feasible solutions, degenerate and non-degenerate B.F.S, vectors, bases and dimension, convex sets, convex hull, convex cone, convex polyhedral and simplexes, hyperplane, polytype, polyhedral , separating and supporting hyperplanes. The collection of all feasible solution of a L.P.P. constitutes a convex set whose extreme point correspond to its B.F.S. The objective function has its	2016	2nd Year	02/08/16-06/09/16	10	Board Work	➢ G.Hadly: Linear Programming ➢ J.G.Chakraborty and P.R.Ghosh: Linear Programming and Game Theory ➢ H.A. Taha: Operations Research ➢ S.D.Tanna: Operations Research

	optimum value at an extreme point of the convex polyhedron generated by the set of feasible solutions, a B.F.S to a L.P.P. corresponds to an extreme point of the convex set of solutions, if the objective function assumes its optimal value at more than one extreme points, then every convex combination of these extreme points also gives the optimal value of the objective function. If the L.P.P. admits an optimal solution then at least one B.F.S must be optimal. Reduction of a F.S to B.F.S						
	<u>Unit-3:</u> Theory of simplex method, feasibility and optimality conditions. The algorithm. Unbounded solution, alternative optimal. Two phase method. Charne's Big-M method, degeneracy in L.P.P. and its resolution. Cycling (definition only), duality, The dual of the dual is primal, weak and strong duality theorems , solutions of the dual (primal) from the simplex table of the primal (dual)	2016	2nd Year	13/09/16-22/11/16 28/11/16-Class Test (20 Marks)	8	Board Work	

	Unit-4: Transportation and assignment problems. Formulation of balanced and unbalanced problems and their optimal solutions. Travelling salesman Problems and their solutions.	2016-2017	2nd Year	29/11/16-03/01/17	7	Board Work	
	Unit-5: Game theory: concept of game problems, rectangular game. Pure strategy and mixed strategy, saddle point, optimal strategy and value of the game, dominance, fundamental theorem of rectangular games, various methods (graphical method and dominance) of solving rectangular games	2017	2nd Year	09/01/17-06/02/17 Up to 20/02/17 Discuss about the problems 06/03/17-Class Test (20 marks)	8	Board Work	

Paper	Topic	Year	Hons.	Time/Date	No. Of Class	Teaching Method	Reference
PAPER-IV	Unit-1: Syllabus of Paper-I V (Tensor Calculus) discuss	2016	2nd Year	06/08/2016	1	Discussion about Topic and Board Work	➢ M.C.Chaki: A text book of Tensor Analysis
	Unit-2: Spaces of n-dimension, Transformation of coordinates, contravarient and convarient vectors, Scalar invariants, mixed tensor, The Kroneckar delta, symmetric and Skew symmetric tensor	2016	2nd Year	13/08/16-03/09/16	4	Board Work	➢ M.C.Chaki: A text book of Tensor Analysis
	Unit-3: Addition, subtraction, outer product, contraction, inner multiplication, Quotient Law	2016	2nd Year	10/09/16-01/10/16	3	Board Work	➢ M.C.Chaki: A text book of Tensor Analysis
	Unit-4: The line element and the metric tensor, Riemannian space, conjugate or reciprocal tensor	2016	2nd Year	05/11/16-03/12/16	5	Board Work	➢ M.C.Chaki: A text book of Tensor Analysis

	Unit-5: Christoffel symbols and their law. Convarient differentiation of sum and product. Divergence of a vector, Laplacian of a scalar invariant. Curvature tensors and Ricci tensor, covariant curvature	2016-2017	2nd Year	10/12/16-14/01/17	5	Board Work	➢ M.C.Chaki: A text book of Tensor Analysis
	Unit-6: Previous year Question paper discussion and solution	2017	2nd Year	21/01/17-25/03/17	10	Board Work	

Paper	Topic	Year	Hons.	Time/Date	No. Of Class	Teaching Method	Reference
PAPER-VIII	Unit-1: Syllabus of Paper-VIII Group-B(Elements of Computer Science), Discuss about Computer	2016	3rd Year	01/08/2016	1	Discussion about Topic and Board Work	➢ M.Pal: FORTRAN 77 with Numerical and Statistical Analysis ➢ D.E.Etter: Structured FORTRAN 77 for Engineers and Scientists
	Unit-2: Fundamentals of Computer	2016	3rd Year	06/08/16-13/08/16	4	Board Work	➢ C.Xavier: FORTRAN 77 and Numerical Methods
	Unit-3: Algorithm and Flow Chart	2016	3rd Year	21/08/16-29/08/16	4	Board Work	
	Unit-4: Boolean Algebra and Application and Number system	2016	3rd Year	05/09/16-01/10/16 With Class Test (20 Marks)	6	Board Work	
	Unit-5: Programming language	2016	3rd Year	03/10/16	1	Board Work	
	Unit-6: Control Statements, Two dimensional arrays, Arithmetic statement	2016	3rd Year	07/11/16-12/11/16	2	Board Work	
	Unit-7: Programming in FORTRAN 77	2016	3rd Year	19/01/15-23/02/15	5		

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PAPER-VIII	Unit-1: Syllabus of Paper-VIII Group-C(Computer Practical), Discuss about typing details in Computer	2016	3rd Year	27/08/2016	1	Discussion about different types of programs and practical work in computer	➢ M.Pal: FORTRAN 77 with Numerical and Statistical Analysis ➢ D.E.Etter: Structured FORTRAN 77 for Engineers and Scientists
	Unit-2: General Programs ❖ Area of triangle, circle ❖ Maximum and minimum among three and n numbers ❖ Roots of a quadratic equation ❖ G.C.D and L.C.M ❖ Testing of Prime numbers ❖ Split a number into two digits ❖ ${}^{n}P_{r}$ and ${}^{n}C_{r}$	2016	3rd Year	03/09/16-19/11/16	10		➢ C.Xavier: FORTRAN 77 and Numerical Methods
	Unit-3: Problems on Matrices ❖ Addition, Subtraction ❖ Product ❖ Trace, Transpose	2016	3rd Year	26/11/16-10/12/16 Discuss about various problems 12/12/16	6 1		

	Unit-4: Problems on Strings ❖ Number of words in a string ❖ Palindrome testing ❖ Upper to Lower case and vice-versa ❖ Sorting names ❖ Name of a person in short form	2016-2017	3rd Year	17/12/16-07/01/17	6		
	Unit-5: Problems on Numerical methods ❖ Interpolation by Lagrange's and Newton forward difference methods ❖ Roots of Bisection, Regula-Falsi, Fixed point iteration, Newton-Rapshon method ❖ Integration by Trapezoidal and Simpson 1/3 method ❖ Solution of Gauss-Seidal and Runge-Kutta methods	2017	3rd Year	14/01/17-18/02/17	10		
	Unit-6: Problems on Statistical methods ❖ Mean, Median and Mode for simple and grouped frequency distribution ❖ Standard deviation and Mean deviation ❖ Correlation and Regression	2017	3rd Year	25/02/17-11/03/17 18/03/17-Class Test	4 1		