I – Academic Planner

A. Teaching Plan (Year : _2020-21_____ Semester: (Odd)

Teacher's Name ___Dr. GOPA KARMAKAR_____

Department__STATISTICS_____

S. No.	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1	32377908	Econometrics	DSE 2B	Introduction: Objective behind building econometric models, nature of econometrics, model building, role of econometrics	13-8-2020	14-8-2020
				General linear model (GLM).Estimation under linear restrictions.(Theory and practicals)	19-8-2020	3-9-2020
				Multicollinearity: Introduction and concepts, detection of multicollinearity, consequences, tests and solutions of multicollinearity (Theory and practicals)	4-9-2020	16-9-2020
				Autocorrelation: concept, consequences of autocorrelated disturbances, detection and solution of autocorrelation. (Theory and practicals)	19-9-2020	30-9-2020
				Generalized least squares estimation, Aitken estimators. (Theory and practicals)	1-10-2020	8-10-2020
				Heteroscedastic disturbances: Concepts and efficiency of Aitken estimator with OLS estimator under heteroscedasticity. Consequences of heteroscedasticity. Tests and solutions of heteroscedasticity. (Theory and practicals)	9-10-2020	16-10-2020
				Structural and Reduced form models. (Theory and practicals)	19-10-2020	22-10-2020
				Autoregressive and Lag models. (Theory and practicals)	23-10-2020	4-11-2020
				Dummy variables, Qualitative data. Specification error. (Theory and practicals)	5-11-2020	11-11-2020
				Difficulties and Presentations	12-11-	19-11-

					2020	2020
2	32371109	Calculus	Core	Integral Calculus: Review of integration and definite integral. Differentiation under integral sign	18-11-2020	25-11-2020
				Double integral, change of order of integration, transformation of variables	26-11-2020	3-12-2020
				Beta and Gamma functions: properties and relationship between them.	5-12-2020	12-12-2020
				Higher Order Differential Equations: Linear differential equations of order n, Homogeneous and non-homogeneous linear differential equations of order n with constant coefficients, Different forms of particular integrals.	14-12-2020	11-01-2021
				Linear differential equations with non-constant coefficients, Reduction of order method. The Cauchy-Euler's equation of order n, Legendre's linear equation.	13-01-2021	25-01-2021
				Formation and solution of a partial differential equations. Equations easily integrable. Linear partial differential equations of first order. Non-linear partial differential equation of first order and their different forms. Charpit's method.	27-01-2021	15-02-2021
				Homogeneous linear partial differential equations with constant coefficients. Different cases for complimentary functions and particular integrals.	17-02-2021	1-03-2021
				Difficulties and Presentations	3-03-2021	4-03-2021

B. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	**1) Google classroom** **2) Conducting online classes series & Microsoft Teams session** **3) Industry Applications of Statistics** **4) Masters in Statistics session**
Type / Nature (FDP/Webinar/Workshop etc.)	Webinar
Organizing In-charge	**1) Kirori Mal College** **2) Kirori Mal College** **3) Department of Statistics, KiroriMal College** **4) Department of Statistics, KiroriMal College**

Details regarding invited Resource Person		**1) Google Team 2) Microsoft Teams 3) Mr. Hemant Mundhra 4) Ms. Aarushi Kapoor**			
Nature of Participation (e.g. Invited Speaker, Participant etc.)		**Participant**			
Date/s	**1) 08/08/2020**	**Timing/s**	**1) 10:30 to 1:30**	**Mode**	**Online/ Hand -on**
Date/s	**2) 21/08/2020, 04/09/2020 & 12/09/2020, 1/10/2020, 4/12/2020 3) 7/11/2020 4) 7/11/2020**	**Timing/s**	**2) 3:00 pm – 4:00pm, 3:00 pm – 4:00pm,11 am- 12:30 pm, 3:00 pm – 4:00pm,, 3:00 pm – 4:00pm,respectively 3) & 4) 10.00 a.m. onwards**	**Mode**	**Online**

C. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
568	B.Sc(Hons) Statistics	32371109	Integral calculus upto beta ,gamma functions. (**Assignment)**	13-01-2021 ,Wednesday	21-01-2021
568	B.Sc(Hons) Statistics	32371109	**Total course (Test**)	3-03-2021 Wednesday	4-03-2021
568	B.Sc(Hons) Statistics	32377908	Objective behind building econometric models upto Multicllinearity(**Assignment)**	10-9-2020, Thursday	12-9-2020
568	B.Sc(Hons) Statistics	32377908	Total course **(TEST)** except dummy variables	11-11-2020, Wednesday	18-11-2020

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**

I – Academic Planner

A. Teaching Plan (Year : ___2020-2021_____ Semester: (Even)

Teacher's Name __DR. GOPA KARMAKAR_____

Department____STATISTICS_____

S. No.	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1	32371202	Algebra	Core	Review of algebra of matrices, theorems related to triangular, symmetric and skew symmetric matrices, idempotent matrices, Hermitian and skew Hermitian matrices, orthogonal matrices, singular and non-singular matrices and their properties. Trace of a matrix, unitary, involutory and nilpotent matrices. Practical work	3.4.2020	Week 2
				Adjoint and inverse of a matrix and related properties. Practical work.	Week 2	Week 3
				Rank of a matrix, row-rank, column-rank, standard theorems on ranks, rank of the sum and the product of two matrices. Practical work	Week 3	Week4
				Row reduction and echelon forms, the solution of matrix equations AX=B, linear independence, Applications of linear equations, inverse of a matrix. Practical work.	Week 4	Week 5
				Generalized inverse (concept with illustrations). Practical work	Week 5	Week6
				Partitioning of matrices and simple properties. Practical work	Week 6	Week 7
				Characteristic roots and Characteristic vector, Properties of characteristic roots, Cayley Hamilton theorem. Practical work	Week7	Week8
				Quadratic forms, Linear orthogonal transformation and their digitalization. Practical work	Week8	Week9
				Definition, properties and applications of determinants for 3rd and higher orders, evaluation of determinants of order 3 and more using transformations. Symmetric and Skew symmetric determinants, Circulant determinants, Jacobi's Theorem, product of determinants. Use of determinants in solution to the system of linear equations.	Week9	Week 10
				Statement of the fundamental theorem of algebra and its consequences. Relation between roots and coefficients or any polynomial equations.	Week11	Week 12
				Solutions of cubic and biquadratic equations when some conditions on roots of equations are given. Evaluation of the symmetric polynomials and roots of cubic and biquadratic equations.	Week13	Week 14
				Problem solving	Week14	Last day of practical
2	32371403	Statistical Quality Control	Core	Index Numbers: Definition, construction of index numbers and problems thereof for weighted and unweighted index numbers including Laspeyre's, Paasche's, Edgeworth-Marshall and Fisher's. Average of Price Relatives. Practical work.	23.1.2020	Week 5
				Chain index numbers, conversion of fixed based to chain based index numbers and vice-versa. Criteria of Good Index Numbers. Consumer price index numbers. Concept(only introduction) of Index of Industrial and Agricultural production. Practical work.	Week 6	Week 11

				Base shifting, splicing and deflating of index numbers. Practical work.	Week 12	Week 14
				Practical :Construction and interpretation of statistical control charts - .X-bar & R-chart and.X-bar & s-chart	Week 7 of practical class	Week 8 of practical class
				Practical: Construction and interpretation of statistical control charts np-chart and.p-chart	Week 9 of practical class	Week 10 of practical class
				Practical: Construction and interpretation of statistical control charts: c-chart and. u-chart	Week 11 of practical class	Week 12 of practical class
				Practical: Single sample inspection plan: Construction and interpretation of OC, AQL, LTPD, ASN, ATI, AOQ, AOQL curves	Week 12 of practical class	Week 13 of practical class
				Practical: Calculation of process capability and comparison of 3-sigma control limits with specification limits.	Week 14 of practical class	Last day of practicals

B. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
568	B.Sc.(Hons) Statistics	32371202	Review of Algebra of matrices to Rank of matrices **(Assignment**)	2nd week of June	Two weeks after giving the assignment
568	B.Sc.(Hons) Statistics	32371202	Echelon forms, partitioning of matrices, generalized inverse and characteristic roots. **(Test)**	3rd week of July	Three weeks after the test
568	B.Sc.(Hons) Statistics	32371403	Beginning to chain indices (Assignment)	3rd week of February	Two weeks after giving the assignment

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**