The following will be the scheme of M.A./ M.Sc. Part – I examination for the branch of Statistics :

M.A./ M.SC. PART –I EXAMINATION

Scheme of Examination : -

Paper I - Probability Theory and Sampling
For M.Sc. (Part-I) (One Paper – 3 hours – 100 marks)
For M.A. (Part-I) (One Paper – 3 hours – 75 marks)

Paper II - Linear Models
For M.Sc. (Part-I) (One Paper – 3 hours – 100 marks)
For M. A. (Part-I) (One Paper – 3 hours – 75 marks)

Paper III - Distribution Theory and Estimation
For M.Sc. (Part-I) (One Paper – 3 hours – 100 marks)
For M.A. (Part-I) (One Paper – 3 hours – 75 marks)

Paper IV - Planning and Analysis of Experiments
For M.Sc. (Part-I) (One Paper – 3 hours – 100 marks)
For M.A. (Part-I) (One Paper – 3 hours – 75 marks)

Paper V - Practical based on Paper I to IV
For M.Sc. (Part-I) (3 hours – 100 marks)
For M.A. (Part-I) (3 hours – 100 marks)

Distribution of marks for paper V :-

- 80 marks for practical examination consisting of two sessions each of 3 hours duration.
- 20 marks for journal and viva-voce.

Teaching Hours : -

- The syllabus of each Theory paper should be covered in 120 hours in one academic year i.e. 60 hours per term, consisting of 4 hours per week for each paper.
- There will be one Seminar of One - hour duration per paper per week.
- Eight hours of practical consisting of Two practical sessions of 4 hours per week per batch.
- Each batch for practical consists of Ten students.
- Two hours of practical session of teaching of Statistical Software per week per batch.

Paper – I
Module – I - Probability Theory

Prerequisites : 1. Real Analysis
2. Set Theory

	Unit -1 (15 Lectures)	Book & Page Numbers
i)	Sample Space : and relevance of Probability theory	Feller: Pp: 1-6
ii)	Various definitions, Properties of Probability, Basic formulas	Rohatagi: Pp :1-25
iii)	Combination of events, the realization of m among n events	Feller : Pp:98-100 106-111
iv)	Conditional Probability, Independent events (Stochastic independence) Bayes theorem.	Feller: Pp:114-28
v)	Occupancy Problems on runs and recurrent events	Feller : Pp :38-49

	Unit -2 (15 Lectures)	Book & Page Numbers
i)	Generating functions, convolutions, compound distributions	Feller : Pp :265-278
ii)	Branching Process.	Medhi: Pp :362-377
iii)	Characteristic Function.	Bhat: Pp : 132-146

	Unit -3 (15 Lectures)	Book & Page Numbers
i)	Probability inequalities, Basic inequality Markov , Chebychevs, Cauchy Schawartz, Jensen, Holder, Minkowski.	Rohatagi: Pp :158-60
ii)	Modes of convergence, Weak Law of Large Number Strong Law of Large Number Central Limit theorem	Rohatagi: Pp:256-305

	Unit -4 (15 Lectures)	Book & Page Numbers
i)	Markov chains	Ross : Pp:163-200 Medhi: Pp:54-90

References Books

1. Bhat B.R. (1985) - Modern Probability Theory

2. Feller W. (1972) - Introduction to Probability Theory and its Applications, Vol –I (3rd Edition)
3. Medhi J (1994)- Sochastic Processes (2rd Edition)
4. Ross S.M (1993) - Introduction to Probability Models
5. Rohatgi V.K. & Saleh A.K. Md. Ehasanes (2001) - An Introduction to Probability and Statistics.

Recommended books for further reading

1. T. Cacoullos L: Exercises in Probability
2. Kathleen Subrahmaniam : A primer in Probability

Module –II - Sampling

Prerequisites : 1. Simple random sampling
2. Introduction of Stratified random sampling

	Unit -1 (15 Lectures)	Book & Page Numbers
i)	Stratified random sampling. Optimum, proportional,Neyman Allocation.	Chocran: Pp: 89-111
ii)	Comparison of variance (opt),Var(prop),Var(rand). collapsed strata, Number of strata, strata boundaries	Chocran: Pp: 115-121
iii)	Post stratification, estimation of population proportion. Allocation with more than one item	Chocran: Pp: 127-138
iv)	Systematic sampling-procedure. Advantage over simple random sample. Properties of the estimate. variance in terms of ρ_w, Comparison of systematic sampling with Simple random sample without replacement.	Chocran: Pp: :205-208
v)	Systematic sampling and stratified sampling and their comparison	Chocran: Pp: 209-214
vi)	Systematic sampling in population with linear trend,	Chocran: Pp: 214-217
vii)	Use of centrally located sample; method of end correction; balanced systematic sample; estimation of pop. Mean when N=nk+c.	
viii)	Circular systematic sampling; Variance of sample mean; method inter penetrating sample.	

	Unit -2 (15 Lectures)	Book & Page Numbers
i)	Ratio estimation - properties of estimate of R ;	

	Confidence intervals; Comparison of ratio estimate with mean per unit.	Chocran: Pp: 150-157
ii)	Bias in ratio estimate. Hartley Ross exact result for bias. Ratio estimate in stratified sampling. Separate, combined.	Chocran: Pp: 158-178
iii)	Regression estimate with preassigned b; Regression estimate when b is computed from sample, Comparison of regression Estimate with Ratio estimate and mean per unit. Regression estimate in stratified sampling : Separate, combined	Chocran: Pp: !89-200

	Unit -3 (15 Lectures)	**Book & Page Numbers**
i)	Cluster sampling	Chocran: Pp: 233-240
ii)	Jessen's result. Relation between optimum size of cluster and cost. cluster sampling for proportion	Chocran: Pp: 240-247
iii)	Cluster sampling when clusters are of unequal size.	Chocran: Pp: 249-250
iv)	Multi stage – Two stage sampling.(srswr-srswor) estimation of population mean and variance of the estimate and its estimate cost function; optimum value of m=size of second stage sample.	Chocran: Pp: 274-278 Chocran: Pp: 283-285

	Unit -4 (15 Lectures)	**Book & Page Numbers**
i)	Two stage sampling for proportion.	Chocran: Pp: 279-280
ii)	PPS sampling.-wr; methods of obtaining a sample .(a)cumu. Total method b) Lahiris method Properties of the estimator	Mukhopadhyay : Pp: 182-187
iii)	PPsWOR Hansen Hurtwitz estimator ; variance of it; Yates and Grundy estimator;	Mukhopadhyay : Pp: 196-200
iv)	Hortvitz Thompson estimator for pop total. Its variance	Mukhopadhyay : Pp: 201-202
v)	Double sampling (two phase) for stratification.	
vi)	Non-sampling errors; non-response.	Chocran: Pp: 327-333

References Books

1. Chocran W.G.: Sampling techniques
2. Parimal Mukhopadhyay : Theory and Methods of Survey Sampling
3. Murthy M.N.: Sampling theory and Methods
4. Sukhatme,P.V.and Sukhatme B.V. : Sampling theory of Surveys and applications

(a) Recommended books for further reading

1. Leslie Kish : Survey sampling : John Wiley & Sons
2. Williams : Sampler on Sampling

Data Site & Case Studies are listed under paper V
Software : SAS, SPSS, MINITAB.
Seminar : Case Studies listed in the paper to be discussed and brief summary should be prepared.

PAPER – II

LINEAR MODELS

Prerequisites :

1. Basic operations, determinants, inverse and rank of a matrix, canonical forms.
2. Solving linear equations, generalized inverse.
3. Partitioned matrices, its determinant and inverse.
4. Eigenvalues and Eigenvectors of a matrix.
5. Vector spaces.

Module -I

	Unit -1(15 Lectures)	**Book & Page Numbers**
i)	Linear parametric function and its estimability, Gauss markoff theorem, Interval estimates and test of hypothesis, fundamental theorems on conditional error ss, Test of $\Lambda\beta=d$, generalized least squares.	Kshirsagar: pp: 1-118 and 333-342

	Unit -2 (15 Lectures)	**Book & Page Numbers**
i)	Analysis of variance, fixed effect models :	Kshirsagar: pp: 161-309

i. One – way classification model
ii. Two – way classification model with and without interaction effect, one observation per cell and r

observations per cell. Tukey's test for non additivity.

iii. Two – way classification model with and without interaction effect with unequal number of observations per cell.
iv. Multiway classification model.
v. Nested classification models.

	Unit -3 (15 Lectures)	**Book & Page Numbers**
i)	Liner regression models, subset selection, Stepwise regression: Forward selection, backward elimination and stepwise. Orthogonal polynomials	Kshirsagar: pp: 119-142 Draper & Smith:pp: 327-342

Unit -4(15 Lectures)

i)	Simultaneous Confidence Intervals: Scheffe's , Bonferroni and Tukey's interval.	Kshirsagar: pp: 195-207

Module -II

	Unit -1 (15 Lectures)	**Book & Page Numbers**
i)	Analysis of variance with random and mixed effect models: Estimation and testing of variance components in one-way, two-way and multiway classification models. ANOVA method.	Kshirsagar: pp: 377-395
ii)	Assumptions and box-cox transformations in the Analysis of Variance: q-q plot, use of skewness and kurtosis,Bartlett's test for equality of variances, Levene's test. Regression diagnostics: Analysis of residuals, definition of ordinary and Studentized residuals, their properties and use in regression diagnostics. Influence Analysis, Cook's distance.	Wang and Chow: pp: 335-357

	Unit -2 (15 Lectures)	**Book & Page Numbers**
i)	Analysis of Covariance: Model, BLUE, ANOCOVA table, testing of hypothesis, use of ANOCOVA for missing observation.	Kshirsagar: pp: 311-332

Unit -3 (15 Lectures)

i)	Analysis of Categorical data : Loglinear models, Contingency tables.	Agresthi: pp:36-69 & 314-356
ii)	Logistic regression: Example, model, MLE of parameters, Iterative procedure to solve likelihood equations, multiple regressors.	Hosmer & Lemeshow:pp:1-34

	Unit -4 (15 Lectures)	**Book & Page Numbers**
i)	Sensitivity Analysis.	Chattterjee & Haddi: pp: 1-59
ii)	Ridge regression: Ill conditioned matrix, need of ridge regression, biased estimator, Mean square error. Bias and MSE of ridge estimator, ridge trace method.	Wang and Chow: pp: 285-295

References Books : Matrix theory

1. Healy M.J.R. : Matrices for Statistics
2. Hohn Franz E : Elementary Matrix Algebra
3. Searle S.R. : Matrix Algebra useful for Statistics,
4. Shantinarayan : Textbook of Matrices

References Books : Linear Models

1. Kshirsagar A.M. : A course in Linear Models
2. Draper N.R & Smith H : Applied Regression Analysis.
3. Song GUI Wang and S.C Chow: Advanced Linear Models.
4. David W Hosmer and Stanley Lemeshow: Applied Logistic regression.
5. Agresthi: Categorical data analysis.
6. Chattterjee and Haddi: Sensitivity Analysis
7. Hosmer L and Lemeshow . :- Applied logistic regression.

(b) Recommended books for further reading

1. Bishop: discrete data analysis.
2. Cox, D. R. : Analysis of binary data.
3. Chaterjee and Price: Regression Analysis with examples
4. Finney D, J :- Statistical methods in biological assays.
5. Graybill F.A :- An introduction to linear statistical models Vol. I.
6. Montgomery D.C. & Peck B.A. :- Introduction to linear regression analysis.
7. Rao C.R :- Linear statistical inference and its applications.

8. Searle S.R :- Linear models.
9. Seber G.A.F :- Linear regression analysis.
10. Sen A & Srivastava M. :- Regression analysis. Springer.
11. Scheffe H :- Analysis of variance.

Data Site & Case Studies are listed under paper V

Software : SAS, SPSS, MINITAB.

Seminar : Case Studies listed in the paper to be discussed and brief summary should be prepared.

PAPER-III

DISTRIBUTION THEORY AND ESTIMATION

Module –I : DISTRIBUTION THEORY.

Prerequisites : 1. Fitting of distributions
2. S- Curve
3. Order Statistics from continuous distribution.

Unit -1 (15 Lectures) **Book & Page Numbers**

i) Distribution functions Rohatgi : pp:40-57

ii)	Decomposition of D.F, Jordan Decomposition theorem	Bhat : pp:72-80

Unit -2 (15 Lectures) **Book & Page Numbers**

i)	Functions of Random variable	Rohatgi : pp:57-68)
ii)	Moment & generating function	Rohatgi : pp:69-85)

Unit -3 (15 Lectures) **Book & Page Numbers**

i)	Standard distributions : discrete and continuous	(Bhat : pp:132-137)
ii)	Characterization of some distribution	(Rohatgi : pp:180-255)

Unit -4 (15 Lectures) **Book & Page Numbers**

i)	Distribution of order statistics Extreme value theory	David : pp:13-25 & 33-49-
ii)	Generation of random sample from different distribution	Ross: pp:

Module –II –ESTIMATION

Unit -1 (15 Lectures) **Book & Page Numbers**

i)	Problem of point Estimation, Unbiased, Consistency, sufficiency ,Completeness and Ancillarity, UMVUE	Rohatgi : pp:354-391 Lehmann : Pp:83-146
ii)	Method of moments and maximum Likelihood Invariance, Minimaxity and Admissibility.	Shao: pp:261-299

Unit -2 (15 Lectures)

Book & Page Numbers

i)	Confidence Sets	Shao: pp:471-527
ii)	Equivariance	Lehmann: pp: 147-223

Unit -3 (15 Lectures)

i)	Non-parametric Estimation, Generalized Estimating Equations, Jacknife and Bootstraps Estimator	Shao : pp:319-383
ii)	Loss function, risk functions, Bayes and minimax method	Shao: pp:231-245

Unit -4 (15 Lectures) **Book & Page Numbers**

i) Lower bounds for the variance of an Estimator — Rohatgi: pp:391-424

ii) Large sample properties of estimators — Lehmann :pp: 429-443

Section 1.02 References Books

1. Bhat , B.R.(1988) : Modern Probability Theory.
2. David H.A (1981): Order Statistics
3. Jun Shao (2005): Mathematical Statistics.
4. Lehmann, E.L.and George Casella(1998) :- Theory of point estimation
5. Rohatgi V.K.and Ehsanes Saleh A.K.(2001) : An introduction to probability theory and Statistics.
6. Ross S.M :- Introduction to Probability Models

(a) Recommended books for further reading

1. Ferguson T.S.(1967) : Mathematical statistics
2. Johnson N.L. & Kotz S. : Distribution in statistics
   a) Discrete distribution
   b) Continuous univariate distribution-I
   c) Continuous univariate distribution-II
3. Lee, A.J. : U- statistics – Theory and practices
4. Lehmann, E.L. : Notes on the theory of estimation
5. Rao, C.R : Linear statistical inference and its applications
6. Rohatgi V.K.(2001) : Statistical inference.
7. Sturat A and Ord J.R.(1987) :- Kendall's advanced theory of statistics Vol-I
8. Zacks, S.(1971) : The theory of statistics inference.

Data Site & Case Studies are listed under paper V

Software : SAS, SPSS, MINITAB.

Seminar : Case Studies listed in the paper to be discussed and brief summary should be prepared.

PAPER –IV
PLANNING AND ANALYSIS OF EXPERIMENTS

Prerequisites : 1.Matrix Theory
2. Linear Models

Module –I Analysis of Experiments

	Unit -1 (15 Lectures)	Book & Page Numbers
i)	Brief history of statistical design. Strategy of experimentation. Some typical application of experimental design. Basic principles of design. Guidelines for designing experiments	Montgomery: pp: 1-20
ii)	Completely randomized design.-an example. Statistical analysis of CRD Model adequacy Checking. Practical interpretation of results. Sample computer output. Determining sample size. Discovering Dispersion effects The regression approach to the ANOVA. Nonparametric methods in the ANOVA.	Montgomery: pp: 60-125
iii)	The randomized block design-an example. Statistical analysis of RBD Model adequacy Checking. Practical interpretation of results. Sample computer output.	Montgomery: pp:126-144

	Unit -2 (15 Lectures)	Book & Page Numbers
i)	Generalized block design-an example Statistical analysis of GBD C-Matrix and its properties. Properties of design-Connectedness, Balance and Orthogonal. Optimality of block design : A,D,E-optimality	Chakrabarti: pp:17-21 Raghavarao: pp:48-55
ii)	Balanced incomplete block design, Group divisible design Partially Balanced incomplete block design, Lattice design.Statistical analysis of above design	Chakrabarti: pp:43-55 Raghavarao: pp:63-76

	Unit -3 (15 Lectures)	Book & Page Numbers
i)	Row-column design-an example Statistical analysis of Row-column design.	Chakrabarti: pp:21-24
ii)	Latin square design Youden square design Cross over design Graeco latin square design. Statistical analysis of above design	Chakrabarti: pp:39-43,47

	Unit -4 (15 Lectures)	Book & Page Numbers
8	Factorial design-an example Basic definitions and principles. The advantage of factorials.	Montgomery: pp:170-217 Chakrabarti: pp:60-61

The two factor factorial design.
The general factorial design.
Fitting response curves and surfaces.
Blocking in a factorial design

Module -II Design of Experiments

Unit -1 (15 Lectures) — Book & Page Numbers

i) The 2^k factorial design — Montgomery: pp:218-286
A single replicate of the 2^k design.
The addition of center points to the design

ii) Blocking a replicated 2^k factorial design — Montgomery: pp:287-302
Confounding in the 2^k factorial design. — Raghavarao: pp: 245-247
Partial confounding.

Unit -2 (15 Lectures) — Book & Page Numbers

i) Two level Fractional factorial designs. — Montgomery: pp:303-362
The one-half fraction of the 2^k design — Raghavarao: pp:273-275
The one-Quarter fraction of the 2^k design
Resolution-III designs.
Resolution-IV and V designs.

ii) The 3^k factorial design. — Montgomery: pp:363-391
Confounding in the 3^k factorial design. — Raghavarao: pp:274-276
Fractional replication of the 3^k factorial design.
Factorials with mixed levels

Unit -3 (15 Lectures) — Book & Page Numbers

i) Response Surface methodology — Montgomery: pp:427-472
The method of steepest ascent
Analysis of a second order response surface.
Experimental designs for fitting response surfaces

ii) Mixture experiments — Montgomery: pp:472-510
Evolutionary operation
Robust design.

Unit -4 (15 Lectures) — Book & Page Numbers

i) The Split –plot design-An example — Montgomery: pp:573-578
Statistical analysis of above design.

ii) Chemical balance weighing designs. — Raghavarao: pp:305-319
Hadamard Matrix and its relation to the above design. A,D, E optimality of above design

Reference Books :-

1. Montgomery D.C., Design and Analysis of Experiment 4th Edition.
2. Chakrabarti M.C. Mathematics of Design and Analysis of Experiment.
3. Raghavarao D. Construction and Combinatorial Problem in Design of Experiments.

Recommended Books for Further Reading

1. Das. M.M. and Giri N.C. : - Design and Analysis of Experiments.
2. Fisher R.A. : Design of Experiments.
3. John A.C. :- Experiments with Mixtures Design and Analysis of Mixture Data
4. Meyers R.H. :- Response surface methodology
5. Shah K.R and Sinha B.K. : - Theory of Optimal Designs.

Data Site & Case Studies are listed under paper V

Software : SAS, SPSS, MINITAB.

Seminar : Case Studies listed in the paper to be discussed and brief summary should be prepared.

PAPER –V
Practical - Section –I
Based on Paper I and Paper II

Contents of this Section tobe covered as given in the Data site and case studies with help of Statistical Software like SAS, SPSS, MINITAB etc.

Practical - Section –II
Based on Paper III and Paper IV

Contents of this Section to be covered as given in the Data site and case studies with help of Statistical Software like SAS, SPSS, MINITAB etc.

Reference Books : **Statistical Software**

1. Carver R.H. & others Data analysis with SPSS.
2. Cody R.P. & Smith J.H. Applied Statistics and the SAS programming language.
3. Darren Georage and Paul Mallery SPSS for windows.
4. Spencer N.H.(2004) SAS Programming, the one day course.
5. Practical Statistical for experimental biologists.
6. Random A and Everitt R.S. : A handbook of statistical analysis using
7. Nom o' Rowke, Larry Hatcher, Edward J. Stepansk : A Step by step approach using SAS for univariate and multivariate Statistics (2nd Edition)
8. A step by Approach using SAS for unvariate and multivariate Statistics-2nd Edition by Nom O' Rourke, Larry Hatcher Edward J. Stepansk. SAS Institution. Inc. Wily.
9. Data. Statistics and Decision Models with Excel Donald L. Harmell, James F.Horrell.

Data Site :

http://www.cmie.com/ - time series data (paid site)
www.mospi.nic.in / websitensso.htm (national sample survey site)
www.mospi.nic.in /cso_test.htm (central statistical organization)
www.cenrusindia.net (cenrus of India)
www.indiastat.com (paid site on India statistics)
www.maharashtra.gov.in /index.php (Maharashtra govt.site)
www.mospi.gov.in (government of India)

Case studies :

1. A.C Rosander : Case Studies in Sample Design
2. Business research methods – Zikund (http://website, swlearning.com)

3. C. Ralph Buncher 21 and Jia-Yeong Tsay : Statistical in the Pharmaceutical Industry
4. Contempory Marketing research – carl McDaniel, Roges Gates.
   (McDaniel, swcollege.com)
5. Edward J Wegmes g. Smith : Statistical Methods for Cancer Studies
6. Eugene K. Harris and Adelin Albert : Survivorship Analysis for Clinical Studies
7. Marketing research – Zikmund
   (http://website.swlearing.com)
8. Marketing research – Naresh Malhotra
   (http://www.prenhall.com /malhotra)
9. http://des.maharashtra.gov.in (government of maharashtra data)
10. Richard G. Cornell :Statistical Methods for Cancer Studies
11. Stanley H. Shapiro and Thomas H.Louis Clinical Trials
12. William J. Kennedy, Jr. and James E. Gentle. Statistical Completing
13. Case Studies in Bayesion Statistics vol. VI
    Lecture notes in Bayesion Statistics number 167 (2002)
    Constantine, Gatsonis Alicia, Carriquary Andrew, Gelman
14. Wardlow A.C (2005) Practical Statistical for Experimental bilogoists
    (2nd Edition)

Given below are some sources for public domain software in statistics:

1. Open Source Software – The Silent Revolution, Editorial By N.V. Joshi. Current Science Volume 89 Number 10, 25, 2005 (This is gives good and useful background material that will help readers develop a perspective on this issue).
2. http://users.aol.com/johnp71/javasta2.html - gives locations of many free packages.
3. www.statistics.com – another channel to addresses of downloadable packages
4. http://freestatistics.altervista.org/stat.php
5. ADE: Statistical Software for Multivariate Analysis and Graphical Display.
   URL: http://phil.univ-lyon.fr/ADE-4/
   Size:13.6 MB
6. DATAPLOT : Software for Scientific, Statistical Analysis, and Non-Linear Modeling.
   URL: http://www.itl.nist.gov/div898/software/dataplot/homepage.html
   Size: 22.6 MB
7. INSTAT: General Statistical Package particular amied at Analysis of Climatic Data.
   URL: http://www..rdg.ac.uk/ssc/software/instatt/instat.html
   Size: 36.5 MB
8. KYPLOT: An Integrated Environment for Data Analysis and Visualization.
   URL: http://www.qualest.co.jp/japanses/link/link.html,
   Size: 4.8 MB
9. OPENSTAT: Software particularity aimed at Students in Social Sciences.
   URL: http://www.statpages.org/miller/openstat
   Size: 1.3 MB
10. TANAGRA: Data Mining Software for Research and Education
    URL : http://eric.univ-lyon.fr/~ricco/tanagra/index.html
    Size: 2.55 MB
11. VISTA : Statistical Visualization highly Dynamic and very Interactive
    URL: http://forrest.psych.unc.edu/research/index.html

Size: 4.1 MB

12. WINIDAMS : Software Package for the Validation, Manipulation and Statistical Analysis of Data.
    URL: http://www.unesco.org/idams
    Size: 7.1 MB
13. Am: Software for Analyzing Data from Complex Samples. Especially Large-Scale Assessments.
    URL: http://www.am.air.org
    Size: 21.1 MB
14. ARC : Statistical Analysis Tool for Regression Problems.
    URL: http://www.stat.umn.edu/arc
    Size: 2.6 MB
15. EASYREGINT : Software for Various Economics Estimation and Testing Tasks.
    URL: http://econ.la.psu/~hbierens/easyreg.html
    Size : 21.1 MB
16. EPIINFO : Software for Epidemiological Statistics.
    URL: http://www.cdc.gov.epiinfo
    Size: 39.5 MB
17. G7: Software for Regression Analysis.
    URL: http://www.inform.umd.edu/EdRes/Topic/Economics/EconData/pdg.html
    Size: 4.9 MB
18. GRETL : Econometrics Package, including a Shared Library, a Command-line Client Progrm and a Graphical User Interface.
    URL: http://gretl.sourceforge.net
    Size: 7.0 MB
19. HLM: Software for Hierarchical Linear Modeling
    URL: http://www.ssicentralcom/html/index.html
    Size: 16.1 MB
20. IRRSTAT: Software for Basic Statistical Analysis of Experimental Data aimed primarily at the Analysis of Data from Agriculture Field Trials.
    URL: http://www.irri.org/science/software/irristat.asp
    Size:6. 7 MB
21. OPENEPI: Epidemiological Statistical for Public Health
    URL: http://www.openepi.com
    Size: 3.75 MB
22. STATEASY : Software for Multivariate Statistics
    URL: http://www.space.tin.it/scuola/odiciacc
    Size: 8.4 MB
23. VISICUBE : Data Exploration and Visual Data Analysis
    URL: http://www.scuola/odiciacc
    Size: 8.4 MB
24. XPREMES : Interactive software for general statistics and risk analysis
    URL: http://www.xtremes.de/xtremes/index-xtremes.html
    Size: 13.2 MB
25. PCP: A machine-learning program for supervised classification of patterns.
    URL: http://pcp.sourceforge.net

Size: 4.35 MB

26. Tetrad : A program for creating, simulating data from, estimating, testing , predicting with and searching for causal/statistical models of categorical(or ordinal) data and to linear models ("structural equation model's) with a Normal probability distribution, and to a very limited class of time series models.
    URL: http://www.phil.cmu.edu/projects/tetrad
    Size: 7.8 MB
27. WINSAAM :Windows implementation of SAAm, i.e system Analysis and Modeling Software.
    URL: http://www.winsaam/com/#winsaam
    Size: 17.9 MB
28. WINPEPI : Windows versions of the renowned PEPI suite of programs.
    URL: http://www.brixtonhealth.com/pepi4windows.html
    Size: 5.14 MB
29. DEMETRA : User-friendly interface to TRAMO/SEATS and X-12- ARIMA.
    URL: http://forum.europa.eu.int/Public/dsis/eurosam/info/data/demetra.html
    Size: 4.4 MB