Semester	III
Paper Number	
No.of credits	5 + 1
Paper Title	**CC-10:AdvancedResearchMethodologyinEducation– II**
Theory/Composite	Composite
No. of periods assignedperweek	5 Theoryand1Practicum
Coursedescriptive/ objective	Oncompletionofthiscourse,thestudentswillbeableto: • Understand the role and use of statistics in educational research. • Testhypothesesbyusingdifferentstatisticaltechniques. • Select the appropriate statistical methodsin educational research. • Usecomputersfordataanalysis. • Developabilitytouse statisticalmethodsforanalysisof research data. • Analyse quantitative data of educational research based on types of measurement. • Analyzequalitativedataineducationalresearch.
Syllabus	**Module1:(30 marks)** **UnitI:StatisticsinEducationalResearch** • DefinitionandneedofStatisticsinEducational research • ScalesofMeasurement:Nominal,Ordinal,Ratioand Interval • NormalProbabilityCurve:An Introduction • CentralLimit theorem • PopulationMean,Samplemeananditsestimation • ParametricandNon-ParametricTesting:Introduction **UnitII–NPC,SignificanceofthemeanandComputerAided Research Techniques** • NormalProbabilityCurve o Definition o SkewnessandKurtosis o Characteristics o PracticalApplications • NormalDistribution,'t'Distribution,'F'Distributionandχ^2-Distribution. • Testofsignificance–ConfidenceLimit,significancetesting and interpretation.

	• ConceptofErrors-TypeIandTypeII,Onetailedandtwo tailed tests. • UseofcomputersforDataAnalysis o EncodingandDecodingdata o UsingEXCEL,SPSS,NVivo o InterpretationofData **UnitIII:DescriptiveStatistics** • OrganizationofData o Meaningofdata o Methodsof organizingdata ▪ Statisticaltables ▪ RankOrder ▪ Frequency Distribution (Concept, construction,Intervals,Range,Classes, cumulative frequency, and cumulative percentage frequency) • GraphicalRepresentationofData o Graphicaldistributionofungrouped:bargraph,bar diagram, circle graph of pie diagram, pictograms, line graphs o Graphical distribution of grouped data: histogram, frequencypolygon,cumulativefrequencygraphand ogive (cumulative frequency percentage curve) • Measuresofcentraltendency:mean,median,modeof grouped and ungrouped data • Measuresofrelativeposition–Quartiles,Deciles, Percentile, percentile rank and standard score • Measures of variability: range, quartile deviation, average deviationandstandarddeviationofungroupedandgrouped data **UnitIV:InferentialStatistics,CorrelationandRegression** • Parametrictesting o z-test o t–test(two-tailedandone-tailedtest) o AnalysisofVariance(ANOVA) o AnalysisofCovariance(ANCOVA) o MultivariateAnalysisofVariance (MANOVA) • Non-Parametrictesting o ChiSquaretest(testofindependence,goodness-of-fit test) o Mediantest o Sign Test o Kruskal-Wallistest/H-test o Mann-WhitneyUtest • Correlation and Regression o Productmoment Method

	○ RankDifferenceMethod ○ ScatterDiagram Methods ○ PartialCorrelation ○ MultipleCorrelation ○ BiserialCorrelation ○ PointbiserialCorrelation ○ RegressionequationandRegressionAnalysis ○ Predictionanditsuse **Module2:(30 marks)** Preparation of Dissertation Proposal Report and Seminar Presentationwithtitle,Significanceofthestudy,briefreviewof related studies, research question/objectives/hypotheses, study design and/or probable analysis, and educational implication (Follow APA).
Mode of Transaction	Lecture, Discussion, CaseStudy, Experiments, Problem solving, Documentary, Report,Useof Computer Software Technologies
Practicum	Thestudentsmayundertakeanyoneofthefollowingactivities: • A critical assessment of statistical techniques used in a research report • Preparation of graphicalrepresentationsof data obtained in a research study • Selection and description of appropriate statistical technique(s) for answering a researchquestionor for testing a given hypothesis • AnalysisofdatausingStatisticalPackageslikeSPSS, Excel etc
Readings	**ReferenceBooks** • Agarwal,Y.P.(1998).StatisticalMethods,Sterling,New Delhi. • BestJ.W.(1986).ResearchinEducation,NewDelhi: Prentice Hall of India Pvt. Ltd. • Fraenkel, J. R., Wallen, N.E. (1983). How to Design and EvaluateResearchinEducation,Singapore:McGrawHill, Inc. • Garrett,H.E.(1973).Statisticsinpsychologyand Education, Vakils, Feffer and Simon, Bombay. • Gupta,Santosh(1983).ResearchMethodologyand StatisticalTechniques, NewDelhi: Deep and Deep Publisher. • K.V.S.Sharma,StatisticsmadeSimpleDoitYourselfon PC;NewDelhi,PrenticeHallofIndiaPrivateIndia Limited, 2001.

	• Kaul,Lokesh(1984).MethodologyofEducational Research, New Delhi: Vikas Publications. • Kurtz,A.K.andMayoS.T.(1980).StatisticalMethodsin Education and Psychology, Narola, New Delhi. • Rajamanikram, M. (2001). Statistical Methods in PsychologicalandEducationalResearchNewDelhi, Concept Publishing Company. • Srivastava,G.N.P.(1994).AdvancedResearch Methodology, New Delhi: Radha Publications. • Willis, Jerry W. (2007). Foundations of Qualitative Research:InterpretiveandCriticalApproaches.SAGE Publication.
Evaluation	Practicum:20Marks ContinuousInternalAssessment:20 marks **Module1:** End-SemesterTheoryExamination:30marks **Module2:** **30 marks (Internal):** Preparation of Research Proposal (15 Marks) WrittenProposalanditsPresentation(15Marks)
PaperStructurefor End Semester	**FullMarks:**30 **Time:**1.5Hours **CommonInstructions:** • Answersshouldbebasedoncriticalreflection(knowledge, comprehension, application, analysis, synthesis and evaluation) • Forquestionsbasedonnumericals,step-by-stepexplanation of the process and formula used and interpretation of the result along with educational implications is required • Candidatesarerequiredtogivetheiranswersintheirown words as far as practicable • Technicaltermsshouldbedefinedandexplainedwith clarity, precision, accuracy, breadth, depth and logic **I.** **CriticalEssaywithNumericalProblems:**Answer**any two** questions out of four questions (2 x 10 = 20) **II.** **CriticalShortNoteswithNumericalProblems:** Answer**anytwo**questionsoutoffourquestions(2x5 =10)

	III. **CriticalEssay:**Answer**anytwo**questionsoutoffour questions (2 x 10 = 20) **IV.** **CriticalShortNotes:**Answer**anytwo**questionsoutof four questions (2 x 5 = 10)