Semester4

Course Code	Course Title	Course ID	L (Hrs)	T (Hrs)	P (Hrs)	L Credits	T Credits	P Credits	Credits	MARKS TI	MARKS TE	MARKS PI	MARKS PE	MARKS Total
Core Course(s)														
CC-A10	Introductory Climatology (Theory)	240/GEO/CC401	3	1	0	3	1	0	4	30	70	-	-	100
CC-A11	Statistical Methods in Geography (Theory)	240/GEO/CC402	3	1	0	3	1	0	4	30	70	-	-	100
CC-A12	Statistical Methods in Geography (Practical)	240/GEO/CC403	0	0	8	0	0	4	4	-	-	30	70	100
Minor/Vocational Course(s)														
MIC/VOC-4	One from Pool								4					100
Ability Enhancement Course(s)														
AEC-4	One from Pool								2					50
Value-added Course(s)														
VAC-3	One from Pool								2					50
Total Credits									20					500

Internship is to be done during summer break after 4th Semester; Marks will be added in 5th Semester.

New Delhi.
- SinghRL&RanaPBSingh(1991),"PrayogtmakBhugolkeMoolTatva",Kalyani Publishers, New Delhi.
- Singh,R.L.andSingh,RanaP.B.(1993),"ElementsofPracticalGeography",(Hindiand English editions). Kalyani Publishers, New Delhi.
- Singh R. L. and Singh R. P. B. (1999), "Elements of Practical Geography", KalyaniPublishers.
- Singh,R.L.(2006),"FundamentalsofPracticalGeography",ShardaPustakBhawan, Allahabad.
- SharmaJ.P.(2010),"PrayogicBhugol",RastogiPublishers.Meerut.
- Singh,RL&Dutta.PK(2012),"PrayogatmakBhugol",CentralBookDepot, Allahabad.

240/GEO/CC401

Semester-IV
Introductory Climatology

CourseCode:**CC-A10(Theory:CorePaper)**
CourseId:**240/GEO/CC401**

Programme/Class:B.A. Year:2 Semester:IV Credit:04(3+1+0)L+T+PHrs/Week	TotalMarks:	100
ExaminationTime:3Hours	EndSemesterExam:	70 Marks
Course Outcome:- 1. Understand the elements of climate. different atmospheric phenomena and climate change. 2. Learn the interaction between the atmosphere and the earth's surface. Understand the importance of the atmospheric pressure and winds. 3. To analyze the dynamics of the Earth's atmosphere and global climate. Assessing the role of man in global climate change. 4. Learn to associate climate with other environmental and human issues. Approaches to climate classification.	InternalAssessment: Attendance Assignment SessionalExam	30 Marks 5 5 20
InstructionsforPaper-Setter:-Question 1 is compulsory comprising sevensub-parts spread overtheentiresyllabus(twomarksforeachsub-part),tobeanswerediin15-20words.There Will be eight longquestions,twofromeachunit.Thecandidatehastoanswerfourlongquestions, at least one question from each unit. All questions carry equal marks.		

UNIT–I

Weather and climate: elements and type, Atmospheric composition and structure: Insolation and temperature: variation with altitude, latitude and season, factors and distribution, heat budget, temperature inversion.Temperature anomaly.

UNIT-II

Atmospheric pressure and winds: Winds, forces affecting winds, general circulation, Jet streams, El-nino,La-nino, Humidity : Evaporation, condensation, fog and clouds, precipitation .

UNIT-III

Air masses: concepts and classification; atmospheric disturbances; tropical and extra tropical cyclones and anticyclone; Mechanism of monsoon.

UNIT–IV

Climatic region: classification of Koppen and Thornthwaite: Climatic Issues: Climate changes, Global warming, Green House effect, Heat wave .

Suggested Reading:

- Barry R. G. and Carleton A. M., (2001),"Synoptic and Dynamic Climatology", Routledge, UK.

- Barry R. G. and Corley R. J., (1998),"Atmosphere, Weather and Climate", Routledge, New York.
- Critchfield H. J., (1987),"General Climatology", Prentice-Hall of India, New Delhi.
- Gupta L S(2000),"Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya", Delhi Vishwa Vidhyalaya, Delhi
- Lal, D S (2006),"Jalvayu Vigyan", Prayag Pustak Bhavan, Allahabad.
- Lutgens F. K., Tarbuck E. J. and Tasa D., (2009),"The Atmosphere: An Introduction to Meteorology", Prentice-Hall, Englewood Cliffs, New Jersey.
- Oliver J. E. and Hidore J. J., (2002), "Climatology: An Atmospheric Science", Pearson Education, New Delhi.
- Singh, S (2009),"Jalvayu Vigyan", Prayag Pustak Bhawan, Allahabad.
- Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill.
- Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad.

240/GEO/CC402

Semester-IV
Statistical Methods in Geography

CourseCode:**CC-A11(Theory: Core Paper)**
CourseId:**240/GEO/CC402**

Programme/ Class: B.A. Year:2 Semester: IV Credit:04(3+1+0)L+T+PHrs/Week	TotalMarks:	100
ExaminationTime:3Hours	EndSemesterExam:	70 Marks
Course Outcome:- 1. Understand the significance of statistics in geography. 2. Recognize the importance and application of Statistics in Geography. 3. Interpret statistical data for a holistic understanding of geographical phenomena. 4. Understand the significance of correlation and regression.	InternalAssessment: Attendance Assignment SessionalExam	30 Marks 5 5 20
Instructions for Paper-Setter:-Question 1 is compulsory comprising sevensub-parts spread overtheentiresyllabus(twomarksforeachsub-part),tobeansweredin15-20words.There Will be eight long questions,twofromeachunit.Thecandidatehastoanswerfourlongquestions, at least one question from each unit. All questions carry equal marks.		

UNIT–I

Statistics: Meaning, Significance in Geography, Data: Sources, type, organization, Tabulation, Frequency distribution and data series , Graphical representation (Histogram, Frequency polygon and Ogive) ,Sampling: types and significance.

UNIT-II

Measures of central tendency: Mean Median and Mode; Partition values: Quartile, Decile and Percentile.

UNIT-III

Measures of dispersion: Range, Mean deviation ,Quartile davition, and Standard deviation; Coefficient of variation.

UNIT–IV

Correlation and regression: Karl Pearson's method and Spearman's Rank Correlation method. Significance testing of correlation. Regression analysis. Linear step regression.

SuggestedReading:

- Bart James E and Gerld M.Barber, (1996),"Elementary Statistics for Geographers, The Guieford Press, London.
- Eldon, D., (1983),"Statistics in Geography: A Practical Approach", Blackwell, London.
- Cressie, N.A.C., (1991),"Statistics for Spatial Analysis", Wiley, New York.
- Gregory, S., (1978),"Statistical Methods and the Geographer (4th Edition)", Longman, London.
- Haining, R.P., (1990),"Spatial Data Analysis in the Social and Environmental Science", Cambridge University Press, Cambridge.
- Mc Grew, Jr. and Cahrles, B. M., (1993),"An Introduction to Statistical Problem Solving in Geography", W.C. Brocan Publishers, New Jersey. 7.
- Mathews, J.A., (1987),"Quantitative and Statistical Approaches to Geography: A Practical Manual Pergamon", Oxford.
- Pal, S.K., (1998),"Statistics for Geo-scientists : Techniques and Applications", Concept Publishing Company, New Delhi.

240/GEO/CC403

Semester-IV

Statistical Methods in Geography

CourseCode:**CC-A12(Practical: Core Paper)**

CourseId:**240/GEO/CC403**

Programme/Class:B.A. Year:2 Semester: III Credit:04(0+0+8)L+T+PHrs/Week	TotalMarks:	100
ExaminationTime:4Hours	EndSemester Pract. Pract.writtenExam: Viva-voce	70Marks 50 Marks 20 Marks
Course Outcome:- 1. Learn the importance of use of data in geography. 2. Know about different types of diagram. 3. Learn to use tabulation of data. 4. Gain knowledge about association and correlation.	InternalAssessment: Attendance Pract.Assign./Pract. File/record	30Marks 5 25
Note & Instructions for Paper-Setter:- At least **twenty exercises** are to be prepared covering all the topics. The question paper will be set from the content of entire syllabus. A boardoftwo externalexaminers shallconduct the PracticalExamination.Theanswercopies of the students will be checked by external and internal examiners on the day of examination. In the end semester practical examination, **Part-I the lab test** will consist of 5 MCQtypequestionscarrying2markseach(5questionx2marks=10marks).**Part-II** thelabtest shall comprise of eight questions in all with at least two questions from each unit (4 question x 10 marks= 40 marks.		

UNIT–I

Sources of data: Tally bar, Construction of frequency distribution table, Data Series inclusive and exclusive: Graphical representation of frequency distribution table: Bar graph, Line graph, Histogram, Frequency polygon and Ogive; pie diagram , Scatter diagram, Regression analysis: construction of regression equations and regression line.

UNIT-II

Centrographic techniques: Mean centre, Median centre and Standard distance: Measures of inequality: Lorenz curve, Location quotient and Crop combination: Weaver's method. Nearest Neighbor Analysis:

Note: Any Statistical Software Package (SPSS, MS Excel, etc.) may be used for practice.

Suggested Reading:

- AnsonR.and OrmellingF.J. (1994),"International Cartographic Association: Basic Cartographic", Vol.Pregmen Press.
- D.R.Khullar(2022),"PracticalGeography",KalyaniPublisher,NewDelhi.
- D.R.Khullar(2024),"PhysicalGeographyandPracticalGeography",KalyaniPublisher, New

Delhi.
- GuptaK.K. and Tyagi,V.C.(1992),"WorkingwithMap,SurveyofIndia",DST, New Delhi.
- MishraR.P.andRamesh,A.(1989),"FundamentalsofCartography",Concept,NewDelhi.
- Monkhouse,F.J.andWilkinson,F.J.(1985),"MapsandDiagrams",Methuen,London.
- Raisz,E.(1962),"GeneralCartography",JohnWileyandSons,NewYork.5thedition.
- Rhind D.W. and Taylor D. R. F., (eds.) (1989), "Cartography:Past,PresentandFuture", Elsevier, International Cartographic Association.
- RobinsonA.H.(2009),"ElementsofCartography",JohnWileyandSons,NewYork.
- Sarkar,A.(2015),"Practical geography: A systematic approach",Orient BlackSwanPrivate Ltd., New Delhi.
- SinghRL&RanaPBSingh(1991),"PrayogtmakBhugolkeMoolTatva",Kalyani Publishers, New Delhi.
- Singh,R.L.andSingh,RanaP.B.(1993),"ElementsofPracticalGeography",(Hindiand English editions). Kalyani Publishers, New Delhi.
- Singh R. L. and Singh R. P. B. (1999), "Elements of Practical Geography", KalyaniPublishers.
- Singh,R.L.(2006),"FundamentalsofPracticalGeography",ShardaPustakBhawan, Allahabad.
- SharmaJ.P.(2010),"PrayogicBhugol",RastogiPublishers,Meerut.
- Singh,RL&Dutta,PK(2012),"PrayogatmakBhugol",CentralBookDepot, Allahabad.
- Bart James E and Gerld M.Barber, (1996),"Elementary Statistics for Geographers, The Guieford Press, London.
- Eldon, D., (1983),"Statistics in Geography: A Practical Approach", Blackwell, London.
- Cressie, N.A.C., (1991),"Statistics for Spatial Analysis", Wiley, New York.
- Gregory, S., (1978),"Statistical Methods and the Geographer (4th Edition)", Longman, London.
- Haining, R.P., (1990),"Spatial Data Analysis in the Social and Environmental Science", Cambridge University Press, Cambridge.
- Mc Grew, Jr. and Cahrles, B. M., (1993),"An Introduction to Statistical Problem Solving in Geography", W.C. Brocan Publishers, New Jersey.
- Mathews, J.A., (1987),"Quantitative and Statistical Approaches to Geography: A Practical Manual Pergamon", Oxford.
- S.K., (1998),"Statistics for Geoscientists : Techniques and Applications", Concept Publishing Company, New Delhi.