Nehru Gram Bharati (Deemed to be University)

Faculty of Arts

Department of Geography

B. A. Geography: 3 Years Semester Course Outline, 2019-20

Department of Geography

Nehru Gram Bharati (Deemed to be University)

Kotwa- Jamunipur- Dubawal, Prayagraj- 221505

About University

Nehru Gram Bharati (Deemed to be University) occupies an esteemed place among the rural universities of India for over decades now. Established on 27th June 2008, it is one of the promising institutes in the State of Uttar Pradesh situated at the fertile alluvial land of northern (left) bank of river Ganges in the heart of the triangle constituted by joining the villages Kotwa - Jamunipur – Dubawal, Prayagraj. It was basically conceived by our Ist Prime Minister of India, Late Pt. Jawahar Lal Nehru, who laid the foundation stone of Nehru Gram Bharati on 26th July 1962 in the village of Rishi Durvasha Ashram, Kotwa-Jamunipur, Dubawal Complex of his phulpur constituency in Prayagraj District. His dream was translated into reality by Sri J.N. Mishra, who had a clear vision and dedication to the cause of upliftment of rural masses through education.

As on date, the campus has emerged as a prominent establishment of professional, technical education and traditional education for meeting the aspirations of youth from rural as well as urban areas. To begin with Rajiv Gandhi Degree College was established in the year 1996 and upgraded to Rajiv Gandhi Post Graduate College from the academic session 2000-01 which subsequently merged into the Nehru Gram Bharati (Deemed to be University) in 2008-09 after University Grants Commission recommended to the Ministry of Human Resource & Development for granting it Deemed to be University Status. The MHRD notified vide its gazette Notification no. F.9-42/2005-43(A) dated as 27th June 2008 bestowing the Deemed to be University status to Nehru Gram Bharati.

The Nehru Gram Bharati (Deemed to be University) is composed of six campuses encircling approximately 76 acres of land spread over within a radius of about 5 Kilometers. The campuses are as under:

Nehru Gram Bharati (Deemed to be University), Jamunipur Main Campus: The lush green campus has buildings for Administrative Office, Central Library, Faculty of Teacher Education, Arts, Science & Commerce. The Undergraduate Courses viz., Bachelor of Arts (in the subjects Ancient History, Pol. Science, Hindi, Geography, Education, Sanskrit, English, Sociology, Home Science, Economics, Music & Philosophy), Bachelor of Commerce, Bachelor of Science (In Physics, Chemistry, Zoology, Mathematics & Physics), Bachelor of Education(B.Ed.), Bachelor of Special Education (Hearing Impairment), Diploma in Special Education(D.Ed.Spl.Ed.[HI]), Bachelor of Elementary Education (B.El.Ed.), Diploma in Elementary Education (D.El.Ed.) are being offered in this campus. The Post Graduate Courses viz., Master of Arts (In Ancient History, Pol. Science, Hindi, Education, Sanskrit, English, Economics, Sociology, Home Science, Philosophy & Geography), Master of Commerce, Master of Science (In Physics, Chemistry, Zoology, Mathematics and Botany), Master in Education (M.Ed.), Master of Special Education in Hearing Impairment (M.Ed.Spl.Ed.[HI] are being offered in the campus.

More than 5000 students study in the university pursuing different courses in the different fields. We have spruced computer lab with internet facility & and more than 36000 books in the fully digitalized library. Regular university Bus services operate in and around Prayagraj and adjoining areas. We have several memorandums of understanding with different universities from India abroad. All courses are duly approved by statutory bodies like AICTE, BCI, RCI, NCTE and UGC etc.

Nehru Gram Bharati has a Research Centre at Shashi campus Jhuthi Tali, Prayagraj to conduct Research Programme in various discipline for Ph. D. Degree. Admissions to Doctoral Programme are made through Common Research Entrance Test (CRET). The Research work is in progress and the Programme is attracting quite a considerable number researchers. Since 2009 we are pursuing Research in different fields adopting a multi-collaborate approach on case to case basis. Currently more than 500 Research scholars are registered under Ph. D. Programme against which is more than 200 has been awarded Ph. D. Degree.

Students are appropriately guided through our Carrier Counseling Center and Placement Cell Computers with internet facility and adequate hostel facilities for Boys and Girls are available. Due to attention is paid for cultivating sports, culture and others extra-curricular activities. Efforts are also made to assist students for getting scholarships and fee refund from state/ Central Government. Research scholars are encouraged to submit research proposal to state and National funding agencies. NGB (DU) making its own niche in higher education and receiving generous appreciation and warm response it is desired that NGB would serve the students to enable them gain knowledge and acquire skill to succeed in career and life.

Salient Features of NGB (DU)

- *Job oriented academic programs*
- *Medium of instruction for all programs is both Hindi as well as English*
- *Choice based credit system in PG programs and semester system in UG programs*
- *Facility for earning while learning*
- *Modern infrastructure*
- *Green ambience campus*
- *Student counseling services*
- *Bus facility from nearby places*
- *Separate Hostels for boys and Girls*
- *Health centre and medical facility*
- *Campus placement*
- *Sports & co-curricular Activities*
- *Students welfare committee*
- *Well stocked Library & Digital Library*
- *Fully Wi-Fi Campus*
- *Open Auditorium for culture activities*

PREAMBLE

Progress in geography from traditional to modern began in 1950s almost coinciding with the launching of the Five Year Plans of Economic Development and expansion in research and teaching activities under the UGC's programme of development of different fields of physical and social sciences. Establishment of many universities and starting of Geography Departments brought in new talent and awareness for improvement of geography. Notable developments involving geographers in national reconstruction started with late Prof. P.C.Mahalanobis, founder Director of the Indian Statistical Institute, taking initiative in holding a meeting of senior geographers of India and some from overseas (Prof. O.H.K. Spate was one among them) to identify important themes in geography and for application of statistics as a tool to analytical methods in geography. This was followed by setting up of a Regional Survey unit at the ISI to undertake studies in regional survey and planning with Professor A.T.A. Learmonth from Liverpool, U.K. and Professor V.L.S. Prakasa Rao as leaders of the team. The objectives and strategies of the national economic development formulated in the perspectives of development laid stress on minimization of regional imbalances in development and formation of macro-economic regions with strong agricultural and industrial base in those regions. Geographers played a key role in sharpening the tools and techniques of regional analysis and providing conceptional clarity to region or space as the fundamental viewpoint of geography.

Along with the expansion of Geography in the University Departments, several national and regional Associations were formed to expand research and communication in Geography. The 21st Geographical Congress, organized under the aegis of International Geographical Union (IGU) was held in 1968 in Delhi under the President ship of Professor S.P. Chatterjee, with pre and post Congress symposia held in different parts of the country. At the initiative of the ICSSR, a National Association of Geographers, India (NAGI), was established in 1973 to facilitate interaction among the geographers across the regions, identify thrust areas of research and teaching, explore new dimensions of research with a view to make concerted efforts for the development of the subject.

The NAGI headquarter was located at Indian Statistical Institute (ISI) Delhi with Prof. C.D. Deshpande as the first President of NAGI. One of the recent developments is

the establishment of Bhoovigyan Vikas Foundation in 2000. The aim of the foundation is to associate Geography with other earth sciences, disseminate the geographical knowledge among researchers. At present, based on available information, Geography is being taught in 96 universities. The institutions where extensive use of geographical knowledge is being made are, however, few specialized ones like National Bureau of Soil Survey & Land Use Planning (NBSS & LUP), National Atlas and Thematic mapping organization (NATMO), Indian National Cartographic Organisation (INCA), Survey of India, Census of India, National Remote Sensing Association (NRSA), Indian Space Research Organisation (ISRO), Central Arid Zone Research Institute (CAZRI), Centre for Earth Science Studies(CESS) etc. However, various voluntary agencies have used geographical knowledge for research, fieldwork, teaching and development programmes. Geography is specially popular with the candidates appearing in Civil Services and other competitive examinations. For instance, the data tabulated by UPSC (UPSC Annual Report 1998-99), on the number of candidates who appeared and qualified in each of the optional subjects prescribed in Civil Services examination 1997, indicated that geography was the 4th most preferred subject chosen by the candidates out of 52 optional subjects; after History, Public Administration and Anthropology. This has created a demand for geography teachers in private coaching centres for competitive examination.

About the Department (*Vision & Mission*)

It gives me immense pleasure to lead the family of more than 150 students and staff in the Department of Geography, Nehru Gram Bharati (Deemed to be University) Prayagraj (U.P.). The department has grown immensely during the last few years in terms of number of students. The University is situated in a sub-tropical monsoon climate area near the confluence of river *Ganga, Yamuna* and extinct *Sarswati* in Prayagraj. The University faced number of obstacles in last twelve years including socio-economic backwardness, political instability, insurgency and financial crisis. Despite of such challenges it has endured through changing time and has stood as an exemplary institution for higher education in rural area of Prayagraj.

Geography as an academic discipline in the Nehru Gram Bharati (Deemed to be University) was introduced in 2009. The Philosophy of Geography is to equip the student with theoretical and practical knowledge of the interrelationship between physical and human environment. Hence, the Programme is designed in such a way that the student

will understand, utilize and effectively manage their environment and become a responsible citizen. Despite of being from the rural background, student's participation and their keen interest in academic and extracurricular activities has provided the cataclysm to foster more proactive measures for academic development. The department of Geography has developed through time in terms of number of students, faculties and infrastructural facilities. Today the department is well equipped with the GIS and Remote Sensing lab, Cartographic lab, Water analysis lab, Earth & Soil lab and Computer lab., classrooms, conference halls with multimedia facilities, staff offices, separate toilets for staff and students (male and female), computer room, examination & records room, central and departmental libraries with e-journal and e-book facilities and four wheeler vehicle for the field survey. The physical infrastructure of the department is sufficient to support the Post Graduate and Ph. D. students in near future. With the availability of present infrastructure in the department, we are looking forward to initiate PG Diploma Course in GIS and Remote Sensing and Geoinformatics. The facility of e-library has also facilitated the e-learning resources for the students. Very soon new and applied aids of e-learning would be available to all the students and staff. The department also provides equal opportunity to each and every student irrespective of gender, community, region or belonging. **The teaching and non teaching staffs of the department are specialized in different fields of Geography. The academic staffs of the department are well trained to guide the students in the fields of Climatology, Geomorphology, Biogeography, Rural Geography, Health/Medical Geography, Urban and Regional Planning, Environmental Hazard, Political Geography, Surveying, Population Studies, Hydrology, Remote Sensing and Geographic Information System (GIS).**

The subject Geography is full of career opportunity and the Career Counselling committee of the department is working hard to address the career related problems of the students and ensure their good placement. The faculties work hard to train the students through the designed programme in such a way that they are capable of serving in varied areas such as civil services, demography, health, women and child development, urban, rural and regional development and planning, ministries, Non Governmental Organizations, Community Based Activities as well as in any private sector. The training of Geographical Information System and remote sensing has made the students well equipped in digital cartography which has helped them in getting employment in various

sectors from micro level to the global. I take pride on all the students of the department and wish that they excel in the field they choose for their future.

The objectives of the Department are as following:-

i. To provide training in the principles of geographic ideas or knowledge as applicable in various spheres of life.

ii. To foster awareness of and concern about economic, social, political, ecological, and spatial interdependences in the physical and human environment.

iii. To enable students acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.

iv. To create new patterns of behaviour of individuals and interactions between groups and society as a whole towards the environment.

v. To provide students with opportunities to acquire the necessary applied skills that will enable them pursue career in areas like Environmental Impact Assessment, Geographic Information System (GIS), Remote Sensing, Metrological Station (IAF), Cartography, Surveying, Urban planning, Rural Development, Medical/Health geography etc. Such knowledge and skills will enable geography students to fit into many areas of both public and private sectors of the economy.

vi. To create diverse educational experiences fostering a deep understanding of sustainability at all the levels in the World.

Vision for the department for the next five years

The department has developed its own research unit with state of art facilities in terms of the laboratories, library, computer lab etc. The teaching and non teaching staffs of the department are specialized in different fields of Geography. The staff strength has kept on increasing in quality and area of specialization. The facility of e-library, GIS lab, Cartographic lab, Water analysis lab, Earth & Soil lab and Computer lab has facilitated for the students. The academic staffs of the department are well trained to guide the students in the fields of geography.

Proposed roadmap for teaching and research for the next five years

The student's participation and keen interest in academic and extracurricular activities provide the catalysm to us in fostering more proactive measures for academic development. Career opportunity in Geography is very to be start. The Career

Counselling committee of the department is working hard to address the career related problems of the students and ensure their good placement, may be also used for this. I wish all the students of the department to excel in the field they choose for their future. Last but not least, students are the only treasures we have, so don't hesitate to meet me anytime.

Programme Introduction

Three Programme B. A., M.A. and Ph. D. run in the department.

Structure of B.A. Programme

The six semester (three years) B.A. Degree Programme of in Department of Geography, Nehru Gram Bharati (Deemed to be University) Prayagraj (U.P.). The B.A. Semester Ist, Semester IInd, Semester IIIrd and Semester IVth examinations in Geography will comprise two theory papers each and one practical examination each where as B.A. Semester Vth and Semester VIth will comprise three theory papers each and one practical examination each. Theory paper will be of three hours duration and will carry 60 marks as the maximum marks. The practical examination will be of six hours duration (in two parts of three hours duration) and will carry 50 marks as the maximum marks for Semester Ist, Semester IInd, Semester IIIrd and Semester IVth and 75 marks for Semester Vth and Semester VIth. The practical examination will be conducted by one internal and one external examiner. It is obligatory to pass in the aggregate marks of the theory examination and in the practical examinations separately. The Internal assessment will carry 15 marks in each theory papers. About programme, the students would understand the development of the subject and delve around issues suited to the needs of the contemporary world. The students would learn to use geographic understanding of various sub fields such as physiography, resources, global economic systems, socio- cultural aspects, rural and urban milieu, environmental and disaster studies and mapping methods. The geography graduates will be well informed citizens who can play immense role in the civil society too. They will be able to pursue wide range of careers as planners, administrators, academicians, and managers.

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ORDINANCES AND REGULATION

B.A. Degree Programme

1. The Degree of Bachelor of Arts

The Nehru Gram Bharati (Deemed to University) may confer the Degree of Bachelor's Programme on Such candidates who, being eligible for admission to the under Graduate Degree Programme, have received regular instruction in the prescribed course of study, passed successfully relevant examinations and being otherwise suitable by virtue of their character, have fulfilled such other condition as may be laid down from time to time by the appropriate authorities.

2. The Curriculum and Duration of Studies

A. (i) The Curriculum of study of the Bachelor's Degree shall comprise of courses set out in Annexure B.

(ii) The Departmental Committee shall prescribe the detailed content of various of study, if required before the beginning of each session. The Departmental Committee can make changes in the optional papers/subjects, subjects to the availability of teaching facility/ faculty.

B. The curriculum of study for the B.A. Degree shall be spread over Six Semesters.

3. Requirement for Admission

A. Registration:

Registration

(i) Candidates of Bachelor Degree shall first be admitted to the first semester upon the reopening of the University after summer vacation every year.

(ii) Subsequent Registration

A candidate, who fails to clear a regular course of study during any of the second, third, fourth fifth and six semesters may be registered in the appropriate term of any subsequent year to the semester concerned but within such time as enables him, to compete the study of all semester comprising Bachelor Degree Programme within a maximum period of five years from the date of his/her registration for the first semester.

B. Minimum Qualification for Admission

(i) Admission to the Bachelor Degree Programme of study shall be open to those candidates who have passed the 10+2 pattern as recognized by the University. Admission shall be made according to merit subject to the fulfilment of eligibility requirement as determined by the University and availability of seats in B.A. Programme.

C. Conditions of Admission:

(i) No application for registration to the First Semester shall be entertained unless it is accompanied by:

(a) A duly migration of scholastic record of the candidate, commencing from the Intermediate or equivalent examination.

(b) Original migration of a candidate who has been a regular student in any Institution at any time prior to making application for registration in the Faculty.

(c) Original migration certificate if the candidate is not enrolled in this University or if enrolled, his enrolment has been cancelled. Provided that if a candidate is unable to produce any of the documents other than the marks sheet of the graduate examination at the time of seeking admission in the concerned Faculty before admission committee, he shall undertake to submit them within one month or within such further period as the University authorities may prescribed; and the admission, if any of such candidate shall until the submission of the aforesaid documents, be deemed to be provisional.

(ii) Candidate shall give also a written undertaking to the effect that:

(a) He/ She shall exclusively devote his/her time to the study of courses prescribed for Bachelor Degree and in particular he/she shall not offer any other course leading to a degree of any description whatsoever, not shall he/she undertake any remunerative work, though with the prior permission of the Faculty, he/she may join certificate of or diploma courses in any foreign language.

(b) He/ She shall abide by the provision of NGB (DU) Act, Statutes, Ordinances, Regulations and Rules that are framed or may be framed there under and the orders of Officers and authorities of the University and the concerned Faculty from time to time.

4. Fees

The students pursuing Bachelor Degree Programme of study shall have to pay fee as may be prescribed by the University from time to time.

5. The course of study, scheme of examination, result and promotion are covered in the regulation, and are given below.

REGULATIONS

1. B.A. Programme has been divided in six semesters in three years. This is a full time course study. The odd semester would run between July to December and even semester between January to June. Two consecutive (one odd + one even) semester constitute one academic year.

2. There will be minimum 14 and maximum 20 papers /courses (Subject) in the entire whole programme.

3. Each Paper has equal weightage. Each Paper will have 75 marks or 3 credits and with practical 50 marks or 2 credits respectively.

7. Each semester shall have minimum 90 day of teaching, exclusion of holidays, admission and examinations.

SCHEME OF EXAMINATION

1. The evaluation scheme of examination consists of three parts: Internal Assessment (IA), Mid Semester Exam (MSE) and End Semester Examination (ESE). Internal assessment includes Assignments, Presentations, Seminars, Quizzes, Case studies, Viva, Unit test, Group activities /Discussion, etc. The internal assessment will contribute 20% and the Semester and examination will contribute 80% to the total marks.

2. There shall be continuous assessment of the student in each paper. The paper instructor shall hold a maximum of three and minimum of one internal test /assignment /presentation, etc. In the case of three, best two would be considered.

3. In case of semester examination, there shall be no binding on the number of external paper setters/examiners. The remuneration for these courses would be at par with such courses been run in other Department of the University.

4. The details of theory papers and practical examination courses are given below:

The B.A. Semester Ist, Semester IInd, Semester IIIrd and Semester IVth examinations in Geography will comprise two theory papers each and one practical examination each where as B.A. Semester Vth and Semester VIth will comprise three theory papers each and one practical examination each. Theory paper will be of three hours duration and will

carry 60 marks as the maximum marks. The practical examination will be of six hours duration (in two parts of three hours duration) and will carry 50 marks as the maximum marks for Semester Ist, Semester IInd, Semester IIIrd and Semester IVth and 75 marks for Semester Vth and Semester VIth. The practical examination will be conducted by two internal and one external examiner. It is obligatory to pass in the aggregate marks of the theory examination and in the practical examinations separately. The Internal assessment will carry 15 marks in each theory papers.

PROGRAMME LEARNING OUTCOMES IN COURSE (After 3 Years)

- The learning outcome is to prepare the students of B.A. degree in Geography, to understand the development of the subject and delve around issues suited to the needs of the contemporary world. It covers a wide range of papers covering various themes and also maintains uniformity of structure across universities in the country. Geography being interdisciplinary in nature integrates learning derived from all basic and applied sciences/social sciences.
- Students of the B.A. degree in Geography will learn to use geographic understanding of various sub fields such as physiography, resources, global economic systems, socio- cultural aspects, rural and urban milieu, environmental and disaster studies and mapping methods.
- They are trained to read and interpret maps, prepare transect charts and thematic atlas.
- They are also able to read and analyse weather phenomenon through weather maps and charts.
- Students will acquire scientific methodology of data handling, hypothesis generation, testing and analysis.
- After the completion of the course, students will also gain knowledge of various technological applications through study of Remote Sensing and Geographic Information Science.
- The curriculum also provides an opportunity to digitally produce maps and modelling applications.

- The students also learn hand on skills to prepare building disaster plans, community disaster preparedness and also awareness creation.
- They will also develop an understanding of global issues from economic, social, environmental and political perspectives, which has relevance in further studies all across the globe.
- They also develop effective communication skills, team work, travel exposure and zeal of investigation and exploration.
- The learners can greatly contribute to the subject through teaching, research and field oriented studies.
- The students will also be able to pursue a career in spatial planning, sustainable practices, environmental and resource management.
- The geography graduates will be well informed citizens who can play immense role in the civil society too. They will be able to pursue wide range of careers as planners, administrators, academicians, and managers.

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Structure of B.A. Programme

B.A. First Year
SEMESTER I

Paper Code	Explanation	Paper Title	Credits	Theory Paper	Internal Marks	Practical	Total Marks
GEOB 101	Theory (3 Credits)	Physical Geography - Earth System	3	60	15		75
GEOB 102	Theory (3 Credits)	Physical Geography – Atmospheric System	3	60	15		75
GEOB 103	Practical (2 Credits)	Analysis of Geographical Data and Graphical Representation	2			50	50
Total			8	120	30	50	200

SEMESTER II

Paper Code	Explanation	Paper Title	Credits	Theory Paper	Internal Marks	Practical	Total Marks
GEOB 104	Theory (3 Credits)	Human Geography	3	60	15		75
GEOB 105	Theory (3 Credits)	Economic Geography	3	60	15		75
GEOB 106	Practical (2 Credits)	Field Work - Surveying and Mapping	2			50	50
Total			8	120	30	50	200

B.A. Second Year
SEMESTER III

Paper Code	Explanation	Paper Title	Credits	Theory Paper	Internal Marks	Practical	Total Marks
GEOB 107	Theory (3 Credits)	Regional Geography of World: Asia, Europe, North America and Australia	3	60	15		75
GEOB 108	Theory (3 Credits)	Regional Study of Developed and Developing Countries: USA and China	3	60	15		75
GEOB 109	Practical (2 Credits)	Map Projection and Weather Map	2			50	50
Total			8	120	30	50	200

SEMESTER IV

Paper Code	Explanation	Paper Title	Credits	Theory Paper	Internal Marks	Practical	Total Marks
GEOB 110	Theory (3 Credits)	Geography of India- I	3	60	15		75
GEOB 111	Theory (3 Credits)	Geography of India- II	3	60	15		75
GEOB 112	Practical (2 Credits)	Elementary Statistics	2			50	50
Total			8	120	30	50	200

B.A. Third Year

SEMESTER V

Paper Code	Explanation	Paper Title	Credits	Theory Paper	Internal Marks	Practical	Total Marks
GEOB 113	Theory (3 Credits)	History of Geographical Thought	3	60	15		75
GEOB 114	Theory (3 Credits)	Earths Dynamic System	3	60	15		75
GEOB 115	Theory (3 Credits)	Climatology	3	60	15		75
GEOB 116	Practical (3 Credits)	Map Information	3			75	75
Total			12	180	45	75	300

SEMESTER VI

Paper Code	Explanation	Paper Title	Credits	Theory Paper	Internal Marks	Practical	Total Marks
GEOB 117	Theory (3 Credits)	Population Geography	3	60	15		75
GEOB 118	Theory (3 Credits)	Agricultural Geography	3	60	15		75
GEOB 119	Theory (3 Credits)	Remote Sensing and Geographical Information System	3	60	15		75
GEOB 120	Practical (3 Credits)	Field Study, Field Trip and Report Writing	3			75	75
Total			12	180	45	75	300
	Grand Total= Ist Sem. 200 + IInd Sem 200 + IIIrd Sem 200 + IVth Sem 200 + Vth Sem 300 + VIth Sem 300 = 1400 MM and Total Credits = 56						

B.A. First Year
SEMESTER I

Paper Code	Explanation	Paper Title	Paper No.	Credits	Number of Lectures
GEOB 101	Theory	Physical Geography - Earth System	I	3	45
GEOB 102	Theory	Physical Geography – Atmospheric System	II	3	45
GEOB 103	Practical	Analysis of Geographical Data and Graphical Representation		2	30

Physical Geography - Earth System

Theory **GEOB 101**

UNIT-I

Meaning, scope and development of physical geography; origin of the earth –Theories of Kant, Laplace, Chamberlin, James Jeans.

UNIT-II

Geological history of earth; interior of the earth; Rocks; isostasy, earth's movements - endogenetic and exogenetic, volcanic and earthquakes;

UNIT-III

Major landforms: mountains, plateaus and plains; weathering; drainage pattern; landforms formed by running water, wind and glacier.

UNIT-IV

Depth zones of the oceans continental shelf, continental slope, deep sea plains and ocean deeps.

UNIT-V

Bottom relief of Atlantic and Indian Oceans; salinity; tides; ocean currents; coral reefs.

Books Recommended

1. Barry, R. G. and Chorley, R. J. (1998): Atmosphere, Weather and Climate. Routledge, London.
2. Bryant, H. Richard (2001): Physical Geography Made Simple, Rupa and Company, New Delhi.
3. Bunnett, R.B. (2003): Physical Geography in Diagrams, Fourth GCSE edition, Pearson Education (Singapore) Private Ltd.
4. Garrison, T. (1998): Oceanography, Wordsworth Company., Belmont.
5. Lake, P. (1979): Physical Geography (English and Hindi editions), Cambridge University Press, Cambridge.
6. Leong Goh Cheng (2003): Certificate Physical and Human Geography, Oxford University Press, New Delhi.
7. Monkhouse, F.J. (1979): Physical Geography. Methuen, London
8. Singh, S. (2003): Physical Geography. (English and Hindi editions.). Prayag Pustak Bhawan, Allahabad;
9. Trewartha, G.T., Robinson, A.H., Hammond, E.H., and Horn, A.T. (1976/1990): Fundamentals of Physical Geography, 3rd edition. MacGraw-Hill, New York.

10. Strahler, A.N. and Stahler, A.M. (1992): Modern Physical Geography. John Wiley and Sons, New York.

11. Wooldridge, S.W. and Morgan, R.S. (1939): The Physical Basis of Geography- An Outline of Geomorphology. Longman, London. Recent edition and Reprint.

Physical Geography – Earth Atmospheric System

Theory **GEOB 102**

UNIT-I

Composition and structure of the atmosphere; Insolation; Temperature: vertical and horizontal distribution;

UNIT-II

Pressure and pressure belts; Winds: planetary, periodic and local.

UNIT-III

Monsoons; humidity and rainfall; Koeppen & Thonthwaite classification of world climates; Major climatic types- equatorial, monsoon, Mediterranean, west European and Savanna types.

UNIT-IV

Abiotic and biotic components of the biosphere; characteristics and types of ecosystem; biosphere as an ecosystem; biotic succession.

UNIT-V

Man and biosphere, distribution and dispersal of plants; biome types– equatorial rainforest, monsoon, savanna and temperate grassland biomes.

Books Recommended

1. A. Holmes and D.L. Holmes: Principles of Physical Geology, ELBS.
2. A.N. Strahler and A.H. Strahler: Modern Physical Geography, John Wiley and Sons, New York.
3. F. Press and R. Siever: The Earth, W. H. Freeman and Co., San Francisco.
4. M.J. Bradshaw et.al.: The Earth's Changing Surface, ELBS.
5. J.S. Gardner: Physical Geography, Harper Row and Co.
6. R.H. Bryant: Physical Geography, W.H. Allen and Co.
7. Savindra Singh: Physical Geography, Prayag Pustak Bhawan, Allahabad.
8. Savindra Singh: Bhautik Bhoogol,Vasundhara Prakashan, Gorakhpur
9. G.T. Trewartha and L.A. Horn: An Introduction to Climate, McGraw Hill and Co.
10. H.J. Critchfield: General Climatology, Prentice Hall of India, New Delhi.
11. D.S. Lal: Climatology, Sharda Pustak Bhawan, Allahabad.
12. Savindra Singh: Climatology, Prayag Pustak Bhawan, Allahabad
13. M.G. Gross: Oceanography, A View of the Earth, McGraw Hill and Co.
14. R.C. Sharma and M.Vatal: Oceanography for Geographers, Chaitanya Publishing House, Allahabad.
15. Healey Cox and Moors: Biogeography, Blackwell and Co.
16. Wytts: Principles of Biogeography, McGraw Hill & Co.
17. Savindra Singh: Environmental Geography, Prayag Pustak Bhawan,

Allahabad.
18. Savindra Singh: Paryavarana Bhoogol, Prayag Pustak Bhawan, Allahabad
19. Savindra Singh: Jalvayu Vigyan , Prayag Pustak Bhawan, Allahabad
20. Daya Shankar Lal: Jalvayu Vigyan avam Samudra Vigyan, Sharda Pustak Bhawan, Allahabad

Analysis of Geographical Data and Graphical Representation

Practical **GEOB 103**

Section A: Analysis of Geographical Data

1. Classification of spatial data; geographical data matrices; concept of measurement scales -nominal, ordinal, interval and ratio; concept & Types of variable independent dependent, discrete continuous; map scales - representative fraction (RF).
2. Statistical methods: (i) frequency distribution - class intervals, frequency, frequency density, cumulative and relative frequency; (ii) measure of central tendencies; mean, weighted mean, median, mode; (iii) measure of dispersion --range, quartile, mean deviation, standard deviation, variance and coefficient of variation.
3. Transformation and combination of data- linear scale, standard score (Z score), rank order, Range standardization.

Section B: Graphical Representation

1. Scales and coordinate systems: arithmetic and logarithmic scale, Cartesian coordinates, polar coordinates.
2. Line graphs, circular graph, logarithmic graphs and scatter graphs; compound line and bar graphs, divided circles, divided rectangles and triangular graphs.
3. Histograms, frequency curves, pyramids, block piles, hythergraph and climograph.

Books Recommended

1. S. Gregory: Statistical Methods and Geographer, Longmans and Co.Londan
2. M.R. Spingel: Theory and Problems of Statistics, McGraw Hill International.
3. N.M. Downie and R.W. Heath: Basic Statistical Methods, Harper Row and Co.
4. F.F. Goxton and L.J. Cowden: Applied General Statistics, Prentice Hall of India.
5. T.P. Kanitkar and S.V. Kulkarni: Surveying and Levelling, Part I, Ava Prakashan.
6. B.C. Punamia: Surveying, Standard Book House.
7. R.L. Singh: Prayogatmak Bhoogol ke Tatwa, Tara Publications, Varanasi.
8. R.C. Tiwari evm S.Tripathi: Abhinav Prayogatmak Bhoogol, Prayag Pustak Bhawan, Allahabad
9. R.L. Singh: Elements of Practical Geography, Kalyani Publication, New Delhi
10. A.K. Sarkar: Practical Geography-A Systematic Approach, Orient Longman, Kolkata, 1997.
11. G.R.P. Lawrence: Cartographic Methods, Methuen, London, 1968.

SEMESTER II
Human Geography

Paper Code	Explanation	Paper Title	Paper No.	Credits	Number of Lectures
GEOB 104	Theory	Human Geography	I	3	45
GEOB 105	Theory	Economic Geography	II	3	45
GEOB 106	Practical	Field Work - Surveying and Mapping		2	30

Theory **GEOB 104**

UNIT-I

Nature, scope and development of human geography; Branches of human geography; man and environment relationship - determinism, possibilism Neo determinism and probabilism.

UNIT-II

Approaches - ecological, spatial, behavioural and welfare; Evolution of man; Classification of races; Characteristics of races and their broad distribution.

UNIT-III

Human adaptation to environment: Eskimo, Masai and Bushman; Primitive people of India: Tharu, Naga and Bhil.

UNIT-IV

Growth of population; Distribution of population; Major human agglomerations; Types of Migration; migration problems and planning Trends of Urbanization.

UNIT-V

Rural settlements: characteristics, types and regional pattern; Urban settlements: evolution, functional types, patterns, classification; and morphology; Rural houses in India: types, classification and regional pattern.

Books Recommended

1. Chisholm, M. (1985): Human Geography, 2nd edition, Penguin Books, London.
2. De Blij, H.J.(1996): Human Geography: Culture, Society and Space,. 2nd edition. John Wiley and Sons, New York,
3. Fellman, J. D., Arthur, G., Judith, G., Hopkins, J. and Dan, S. (2007): Human Geography: Landscapes of Human Activities. McGraw-Hill, New York. 10th edition.
4. Haggett, P. (2004): Geography: A Modern Synthesis. 8th edition, Harper and Row, New York.
5. Hussain, M. (1994): Human Geography, Rawat Publications, Jaipur.
6. Johnston, R. J., Gregory, D., Pratt, G. and Watts, M. (2009): The Dictionary of Human Geography. 5th edition, Basil Blackwell Publishers, Oxford.
7. Kaushik, S.D. and Sharma, A.K. (1996): Principles of Human Geography (in Hindi), Rastogi Publication, Meerut.

8. Norton, W. (2008): Human Geography, Oxford University Press, New York. 5th ed.
9. Singh, K. N. and Singh, J. (2001): Manav Bhugol. Gyanodaya Prakashan, Gorakhpur. 2nd edition.
10. Singh, L.R. (2005): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad
11. Smith, D. M.(1977): Human Geography- A Welfare Approach, Edward Arnold (Publishers) Ltd., London
12. Stoddard, R.H., Wishart, D.J. and Blouet, B.W. (1986): Human Geography. Prentice-Hall, Englewood Cliffs, New Jersey.

Economic Geography

Theory **GEOB 105**

UNIT-I

Meaning and approaches to economic geography; Main concepts of economic geography; Resource: concept and classification; Resource conservation.

UNIT-II

Natural resources: soil, forest and water; Mineral resources: iron ore and bauxite; Power resources: coal and petroleum; Principal crops: wheat, rice and cotton.

UNIT-III

Agricultural regions of the world (Derwent Whittlesey); Theory of agricultural location (Von Thunen); Theory of industrial location (Weber); Major industries: iron and steel, and cotton textiles.

UNIT-IV

World transportation: major trans-continental railways, and sea routes; WTO and International trade: patterns and trends; Major trade blocs: EEC, ASEAN; Effect of globalization on developing countries.

UNIT-V

Cultural and social processes - social interactions, social groups and organization; diffusion of cultures; cultural hearths; major cultural realms, major religions of the world.

Books Recommended

1. Alexander, J. W. (1988): Economic Geography. Prentice-Hall, New Delhi,.
2. Bryson, J., Henry, N., Keeble, D. and Martin, R. (eds.) (1999): The Economic Geography Reader: Producing and Consuming Global Capitalism. John Wiley and Sons, Inc, New York.
3. Clark,G. L., Gertler, M. S. and Feldman, M. P. (eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, USA.
4. Coe, N. (2007): Economic Geography: A Contemporary Introduction. Blackwell Publishers, Inc., Massachusetts.
5. Gautam, A. (2006): Aarthik Bhugol Ke Mool Tattava, Sharda Pustak Bhawan, Allahabad.
6. Guha, J. S. and Chattoraj, P.R. (2002): A New Approach to Economic Geography: A Study of Resources. The World Press Private Limited, Kolkata.
7. Hanink, D. M. (1997): Principles and Applications of Economic Geography: Economy, Policy, Environment. John Wiley and Sons, Inc, New York.
8. Hartshorne, T. A. and Alexander, J. W. (1988): Economic Geography (3rd revised edition) Englewood Cliff , New Jersey, Prentice Hall
9. Hudson, R. (2005): Economic Geographies: Circuits, Flows and Spaces. Sage Publications, London.

10. Knowles, R, Wareing, J. (2000): Economic and Social Geography Made Simple, Rupa and Company, New Delhi.
11. Sokal, Martin 2011. Economic Geographics of Globalisation: A short Introduction. Cheltenham, UK: Edward Elgar.

Field Work - Surveying and Mapping

Practical **GEOB 106**

1. Plane Table Survey:
(i) Preparation of map by radial and intersection methods
(ii) Resection (Three-point problem)
(a) Tracing paper or mechanical method, (b) Geometrical method, (c) Trial and error method (inside and outside the triangle)
2. Map Scales –RF, construction of plain, comparative diagonal scale
3. Prismatic Compass Survey:
(i) Preparation of map by open traverse (field book)
(ii) Preparation of map by closed traverse (field book, correction of bearing and removal of closing error).

Books Recommended

1. T.P. Kanitkar and S.V. Kulkarni: Surveying and Levelling, Part I, Avad Prakashan.
2. B.C. Punamia: Surveying, Standard Book House.
3. R.L. Singh: Prayogatmak Bhoogol ke Tatwa , Tara Publications, Varanasi.
4. R.C. Tiwari evm S. Tripathi: Abhinav Prayogatmak Bhoogol, Prayag Pustak Bhawan, Allahabad.
5. R.L. Singh: Elements of Practical Geography, Kalyani Publication, New Delhi
6. A.K. Sarkar: Practical Geography-A Systematic Approach, Orient Longman, Kolkata, 1997.
7. G.R.P. Lawrence: Cartographic Methods, Methuen, London, 1968.

B.A. Second Year

SEMESTER III

Paper Code	Explanation	Paper Title	Paper No.	Credits	Number of Lectures
GEOB 107	Theory	Regional Geography of World: Asia, Europe, North America and Australia	I	3	45
GEOB 108	Theory	Regional Study of Developed and Developing Countries: USA and China	II	3	45
GEOB 109	Practical	Map Projection and Weather Map		2	30

Regional Geography of World: Asia, Europe, North America and Australia

Theory **GEOB 107**

UNIT-I

Concept of region in geography; systematic vs regional geography, types and classification of regions (formal and functional); Criteria of delimitation and characteristics of natural, cultural, economic and political regions.

UNIT-II

Asia in the context of world; structure; relief; drainage; climate; natural vegetation and soils; spatial distribution of population; economic base; Regional studies of south, south–east, east and west Asia.

UNIT-III

Europe: Physical, economic and demographic characteristics; Regional studies of British Isles, Eastern, Western and Mediterranean realm.

UNIT-IV

North America: Physical, economic and demographic set up; Regional studies of North America.

UNIT-V

Australia: Physical, economic and demographic set up; Regional studies of Australia.

Books Recommended

1. R. Hartshorne : Perspective on Nature of Geography.
2. R. Minshull : Regional Geography - Theory and Practice.
3. G.B. Cressey : Asia's Land and People.
4. W.G. Lant, O.H.K. Spate and C. Fisher: Changing map of Asia.
5. N. Ginsberg (ed.) : The Pattern of Asia.
6. J Kole: A Geography of the World's Major Regions, Routledge, London, 1996.
7. H.J. Deblij: Geography: Regions and Concepts, John Wiley, New York, 1994
8. R.H. Jakson & L.E. Hudman: World Regional Geography :Issues for Today, John Wiley New York, 1991.
9. G.H. Minshull: Western Europe, odd and & Stoughton, NY. 1984.
10. J.H. Patterson: Geography of Canada and the United States, Oxford University Press, 1985.
11. J.P. Kole: Latin America-Economic and Social Geography, Poutter worth, USA, 1975
12. S.P. Dickonson et al: The Geography of the Third World, Routledge, London, 1996
13. P. Gourow: The Terrified World: Longman, London, 1980

14 P.W. Ward & A Miller World Regional Geography: A Question of Place John Willey, NY, 1989.

Regional Study of Developed and Developing Countries: USA and China

Theory **GEOB 108**

UNIT-I

Concepts, bases and characteristics of developed and developing countries; Indicators and Levels of development: Developed, Developing, Under-developed, and Least-developed worlds.

UNIT-II

USA: Physical resource base: landforms, climate, soils, vegetation, power and mineral resources.

UNIT-III

USA: Cultural resource base: population, agriculture, industries, Agricultural and industrial regions of USA.

UNIT-IV

China: Physical resource base: landforms, climate, soils, vegetation, power and mineral resources.

UNIT-V

China: Physical resource base: landforms, climate, soils, vegetation, power and mineral resources, Agricultural and geographical regions of China.

Books Recommended

1. di Blij, H. and Muller, O. (1993): Geography: Regions and Concepts. John Wiley and Sons, New York..
2. Jackson, R. H. and Husman, L. E. (1991): World Regional Geography: Issues for Today. John Wiley and Sons, New York.
3. Jones, P. and Bryan, P. (1954): North America: An Historical, Economic and Regional Geography, Methuen and Company. Ltd, London.
4. Kolb, A. (1971): East Asia, China, Japan, Korea, Vietnam, Methuen, London.
5. Rai, Gayatri (2007): Vishwa Ka Pradeshik Bhugol, Mishra Trading Corporation, Varanasi
6. Sharma, P. R. (ed.) (1991): Perspectives on Third World Development. Rishi Publication, Varanasi.
7. Stamp, L. D. (1976): Asia: A Regional and Economic Geography, Methuen, London.

Map Projection and Weather Map

Practical **GEOB 109**

Map Projection: Conical: simple conic with one and two standard parallels, Bonne's; Cylindrical: simple and equal area; Zenithal (Polar case): equidistant and equal area. Weather Map: Weather symbols, Representation of atmospheric features, Interpretation of Indian daily weather maps (July, October and January).

Books Recommended

1. Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London.
2. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition.

3. Robinson, A., Sale, R. Morrison, J. and Muehrcke, P. C. (1984): Elements of Cartography, John Wiley and Sons, New York
4. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
5. Sharma, J. P. (2001): Prayogik Bhugol. Rastogi Publication, Meerut 3rd edition.
6. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi.

SEMESTER IV

Paper Code	Explanation	Paper Title	Paper No.	Credits	Number of Lectures
GEOB 110	Theory	Geography of India- I	I	3	45
GEOB 111	Theory	Geography of India- II	II	3	45
GEOB 112	Practical	Elementary Statistics		2	30

Geography of India- I

Theory **GEOB 110**

UNIT-I

Geology; Physiographic divisions; Drainage systems; Climate and climatic regions.

UNIT-II

Soil types and distribution; soil erosion and conservation; forests - types and their economic utilization.

UNIT-III

Minerals and power resources (iron ore, and coal); Multipurpose projects: Damodar Valley,
and Bhakhra Nangal; Irrigation.

UNIT-IV

Crops (rice, wheat, cotton, sugarcane, and tea); Agricultural regions; Green revolution and its consequences.

UNIT-V

Meso-regions of India (Karnataka plateau, and Uttarakhand) and their characteristics.

Books Recommended

1. Chauhan, P.R. and Prasad, M. (2003): Bharat Ka Vrihad Bhugol, Vasundhara Prakashan, Gorakhpur.
2. Farmer, B.H. (1983): An Introduction to South Asia. Methuen, London
3. Gautam, A. (2006): Advanced Geography of India, Sharda Pustak Bhawan, Allahabad
4. Johnson, B.L.C. (1963): Development in South Asia. Penguin Books, Harmondsworth
5. Krishnan, M.S. (1982): Geology of India and Burma, CAS Publishers and Distributors, Delhi.
6. Khullar, D.R. (2007): India: A Comprehensive Geography, Kalyani Publishers, New Delhi
7. Nag, P. and Gupta, S. S. (1992): Geography of India, Concept Publishing Company, New Delhi.
8. Rao, B.P. (2007): Bharat kee Bhaugolik Sameeksha, Vasundhara Prakashan, Gorakhpur.

9. Sharma, T.C. and Coutinho, O. (2003): Economic and Commercial Geography of India, Vikas Publishing House Private Ltd. New Delhi.
10. Singh, J. (2003): India: A Comprehensive Systematic Geography. Gyanodaya Prakashan, Gorakhpur.
11. Singh, J. (2001): Bharat: Bhougolik Aadhar Avam Ayam, Gyanodaya Prakashan, Gorakhpur.
12. Singh, R.L. (ed.) (1971): India: A Regional Geography. National Geographical Society of India, Varanasi.
13. Spate, O.H. K., Learmonth A. T. A. and Farmer, B. H. (1996): India, Pakistan and Sri Lanka. Methuen, London, 7th edition.
14. SukhwaI, B.L. (1987): India: Economic Resource Base and Contemporary Political Patterns. Sterling Publication, New Delhi.
15. Tiwari, R.C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad.
16. Wadia, D. N. (1959): Geology of India. Mac-Millan and Company, London and student edition, Madras.

Geography of India- II

Theory **GEOB 111**

UNIT-I

Irrigation, agriculture - trends and problems, dry land agriculture, agricultural regions, green and white revolution and agro-climatic regions.

UNIT-II

Population – distribution, growth, density, trends and problems; Road, rail and air transport; inland waterways, foreign trade.

UNIT-III

Industrial growth and development; industrial localization with reference to iron and steel, cotton textile, sugar, cement and chemical, and paper industries, Industrial regions.

UNIT-IV

Trends of Urbanization, urban problems, urban slums, urban policy, regional disparities in economic development, planning regions, multi-level planning bases of India federalism.

UNIT-V

Environmental pollution in India, Geography of Uttar Pradesh.

Books Recommended

1. R.L. Singh (ed.): India : A Regional Geography, NGSI, B.H.U., Varanasi 1971.
2. T.C. Sharma and O. Coutinho: Economic and Commercial Geography of India.
3. B.N. Sinha: Industrial Geography of India.
4. O.H.K. Spate and A.T.A. Learmonth: India and Pakistan.
5. D.N. Wadia : Geology of India.
6. R.C. Tiwari, Geography of India, Prayag Pustak Bhawan, Allahabad.
7 D.R. Khullar : India : A Comprehensive Geography, Kalyani Publishers, Ludhiana.
8. India Reference Annual 2006, Publication Division, Govt. of India, New Delhi
9. Ram Chandra Tiwari: Bharat Ka Bhoogol, Prayag Pustak Bhawan, Allahabad
10. C.B. Mamoria: Bharat ka Bhoogol, Sahitya Bhawan, Agra
11. Alka Gautam:Bharat Ka Bhoogol Sharda Pustak Bhawan, Allahabad
12. Bharat 2006: Publication Division, Bharat Sarkar, New Delhi

Elementary Statistics

Practical **GEOB 112**

Sources of data; classification and Tabulation of data; Measures of central tendency: mean, median and mode, and quartile; Measures of dispersion: mean deviation, standard deviation, Correlation (Karl Pearson and Spearman).

Books Recommended

1. Bhagwathi, V. and Pillai, R.S.N. (2003): Practical Statistics, Sultan Chand and Company, New Delhi
2. Ebdon, D. (1977): Statistics in Geography: A Practical Approach, Blackwell Publishers Inc., Massachusetts
3. Gregory, S. (1973): Statistical Methods and the Geographer, Longman, London.
4. Gupta, S.P. (1998): Advanced Practical Statistics, Sultan Chand and Company, New Delhi
5. Mahmood, A. (1986): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi
6. Zamir, A. (2002): Statistical Geography: Methods and Applications, Rawat Publications, Jaipur.

B.A. Third Year

SEMESTER V

Paper Code	Explanation	Paper Title	Paper No.	Credits	Number of Lectures
GEOB 113	Theory	History of Geographical Thought	I	3	45
GEOB 114	Theory	Earths Dynamic System	II	3	45
GEOB 115	Theory	Climatology	III	3	45
GEOB 116	Practical	Map Information		3	45

History of Geographical Thought

Theory **GEOB 113**

UNIT-I

Meaning and scope of geography; Changing philosophy of geography; Geography as an interdisciplinary science; Geography as social science; Geography as a synthesizing science; Explanations in Geography.

UNIT-II

Development of Geography in the ancient classical period; Contributions of Greek, Roman, Indian and Chinese scholars.

UNIT-III

Geography in the dark ages –contributions of Arab geographers; Period of renaissance age of explorations and discoveries and their impacts.

UNIT-IV

Development of Geography in the modern classical period; Rise of philosophical and scientific analysis in geography; Contributions of German, French, British, American and Russian schools of thought.

UNIT-V

Dichotomies in geography: physical vs human, systematic vs regional etc. Different approaches to the study of geography – areal differentiation, landscape, ecological and locational. Development of geography in the first half of the 20th century; fundamental concepts in physical, human, economic and settlement geography.

Books Recommended

1. Minshull: The Changing Nature of Geography
2. Dickinson: The Makers of Modern Geography.
3. Chisholn: Human Geography-Evolution and Revolution
4. D. Harvey: Explanations in Geography, Edward Arnold.
5. East and Wooldridge: The Spirit and Purpose of Geography.
6. P. Haggett: Geography: A Modern Synthesis
7. M. Hussain: Evolution of Geographical Thought, Rawat Publication, Jaipur.
8. R.D. Dixit: Geographical Thought, Prentice Hall of India Pvt .Ltd. New Delhi.
9. R. Hartshrone: Perspective on the Nature of Geography, Rawat Publication, Jaipur.
10. R.J. Chorley & P. Haggett: Models in Geography
11. Majid Hussain: Bhaugolik Vichardharaon ka Itihas, Rawat Pub., Jaipur
12. R.D. Dixit: Bhaugolik Vichardhara, Prentice Hall of India, Pvt .Ltd. New Delhi.

Earths Dynamic System

Theory **GEOB 114**

UNIT-I

Diastrophism; Origin of Continents, Ocean, Basins; Theories of Lothian Green, F.B. Taylor, A.G. Wegener; Plate Tectonic Theory; Isostasy; Volcanism and associated landforms.

UNIT-II

Folding and faulting; Formation of folded mountains; Theories of mountain building, geosynclinal theory of Kober.

UNIT-III

Thermal convection theory of Jeffreys, Convection current theory of Holmes, sliding continent theory of Daly, Plate Tectonic Theory.

UNIT-IV

Concept of cycle of erosion by W. M. Davis and W. Penck; Interruption in normal cycle of erosion and poly cyclic relief.

UNIT-V

Mass movement of rock wastes; Mecharism of coastal, ground water and periglacial processes and resultant landforms.

Books Recommended

1. A.L. Bloom: Geomorphology, Prentice Hall, New Delhi.
2. B.W. Sparks Geomorphology Longmans, London
3. C. Embleton and C.A. M.King: Glacial and Preiglacial Geomorphology, Edward Arnold Publishers, London
4. M.J. Bradshaw et. al: The Earths Changing Suface, ELBS,U.K.
5. R.J. Chorley, et. al. Geomorphology, Methuen, London.
6. R.J. Small: The Study of Landforms, Cambridge University Press, Cambridge.
7. Savindra Singh: Geomorphology, Prayag Pustak Bhawan, Allahabad
8. V.S.Kale and A. Gupta: Introduction to Geomorphology, Orient Longman Ltd. Hyderabad.
9. Savindra Singh Bhuakriti Vigyan,Vasundhara Prakashan, Gorakhpur.
10. D.S. Lal: Climatology, Sharda Pustak Bhawan, Allahabad
11. G.T. Trewartha and L.A. Horn: An Inroduction to Climate, International Studies.
12. H.J. Critchfield: General Climatology, Prentice Hall of India, New Delhi.
13. P.K. Das: Monsoons, National Book Trust, New Delhi
14. R.J. Chorley and R.G. Barry: Atmosphere, Weather and Climate, Mathuen & Co. Ltd. London.
15. Savindra Singh : Climatology, Prayag Pustak Bhawan, Allahabad.
16. Savindra Singh :Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad.

Climatology

Theory **GEOB 115**

UNIT-I

Meaning and scope of climatology; Atmosphere: Composition and structure; Insolation: determinants and distribution; Temperature: Controlling factors and Distribution; Processes of heating and cooling of the atmosphere.

UNIT-II

Heat budget of earth and atmosphere; Temperature change; Air stability and its importance;

Laws of Horizontal Motion and general Atmospheric Circulation, Monsoon, Jet Stream and their significance with reference to India

UNIT-III

Precipitation: Theories of Precipitation Formation, forms and types; Air Masses: classification and modification; Fronts: source regions, types and associated weather.

UNIT-IV

Cyclones: tropical and temperate; hurricanes; tornadoes; thunderstorm; Climatic classification: Köppen and Thornthwaite;

UNIT-V

Earthquakes and Tsunamis; Global Warming: causes and consequences; Climatic change: evidences and theories.

Books Recommended

1. Barry, R.G. and Carleton, M. (2001): Synoptic and Dynamic Climatology, Routledge, London.
2. Chorley, R.J. (2001): Atmosphere, Weather and Climate. Methuen, London.
3. Critchfield, H.J. (2002): General Climatology. Prentice-Hall of India, New Delhi..

4. Finch, J. C. and Trewartha, G. T.: Elements of Weather and Climate. Prentice-Hall, London.
5. Kendrew, W.C. (1998): Climatology. Edward Arnold, London. 5th edition.
6. Lal, D.S.(1986): Climatology. Chaitanya Publications, Allahabad.
7. Oliver, J.E. and Hidore, J.J. (2003): Climatology: An Atmospheric Science, Pearson Education Private Ltd, Patparganj, Delhi.
8. Robinson, P. J. and Henderson, S. (1999): Contemporary Climatology, 2nd edition, Pearson Education Ltd., Harlow, UK.
9. Singh, M.B. (1998): Jalvayu Avam Samudra Vigyan. Tara Book Agency, Varanasi.
10. Singh, M.B. (1999): Jalvayu Avam Jal Vigyan. Tara Book Agency, Varanasi,. 11. Singh, S. (2005): Climatology. Prayag Pustak Bhawan, Allahabad.
12. Singh, S. (2006): Jalvayu Vigyan. Prayag Pustak Bhawan, Allahabad

Map Information

Practical **GEOB 116**

Section A: Primary and Special Purpose

1. Topographical maps

(a) Scales of different topographical maps (b) Representation of reliefs: contours - types, intervals, slopes, characteristics and Patterns representation of important landforms by contours and their cross sections.

(c) Representation of physical and man-made features by conventional symbols. Description of topographical maps of different physical regions of India.

2. Weather Maps

(a) Representation of weather elements

(b) Reading of weather maps

© Preparation of weather map through given weather summaries.

3. Geological Map

(a) Representation of rock outcrops, bedding planes, dips and strikes, unconformity and faults.

(b) Drawing of cross sections and determination of dip angles and bed thickness.

© Interpretation of Geological Features.

Section B: Processing of mapped information

1. Analysis of Settlement- mean centre, standard distance, quadrate count method nearest neighbour method.

2. Analysis of Transport and Drainage network- measurement of length, Transport network, cyclometric number, B India and connectivity, matrix. Drainage network ordering, bifucation ration and length ratio, drainage density and drainagged district.

3. Analysis of Areas-Slope Indices and contract number measurement of area,

4. Analysis relief, profiles, areas height diagram, relative relief, slope analysis, altimetric and hypsometric analysis.

5. Inferential statistics-parametric and non parametric lists-population and sample, the null hypothesis, level of significance, one and two tailed tests, by type I and Type II errors procedure for conducting a statistical test, chi-square test, student's T test, variance test (F test).

Section C: Basics of Computer System

Starting word, creating, serving and inserting files; formatting pages, paragraphs and sections; Editing texts; Tabs and tables; Working with charts and graphs; Printing; Application in geographical mapping.

Books Recommended

1. A.H. Robinson et.al. : Elements of Cartography, John Wiley.
2. G.M. Bennison : An Introduction to Geological Structures and Maps, Edward Arnold, London.
3. G.C. Dickinson : Maps and Air Photographs, Edward Arnold, London.
4. J.S. Keates : Cartographic Design and Production, Longman, London.
5. M.S. David : Patterns in Human Geography, David Charles, Penguin.
6. N.M. Downie and R.W. Heath : Basic Statistical Methods, Harper Row and Co.
7. S. Gregory : Statistical Methods and Geographer, Longman, London.
8. T.W. Birch : Maps - Topographical and Statistical, Oxford University Press.
9. J.P. Sharma: Prayogatmak Bhoogol,Rastogi & Co. Meerut.
10. J. Singh,V.K. Srivastava & B.P. Rao: Baumikiya Manchitron ki Ruprekha,Vasundhara Prakashan, Gorakhpur .
11. R.C. Tiwari and Sudhaker Tripathi: Abhinav Prayogatmak Bhoogol, Pryag Pustak Bhawan, Allahabad.
12. R.L.Singh: Prayogatmak Bhoogol ke Mool Tatwa,Tara Publication,Varanasi.
13. Russel A.Stulz: Learn Microsoft Word 6.0 for Windows in a day BPB Publications, New Delhi.

SEMESTER VI

Paper Code	Explanation	Paper Title	Paper No.	Credits	Number of Lectures
GEOB 117	Theory	Population Geography	I	3	45
GEOB 118	Theory	Agricultural Geography	II	3	45
GEOB 119	Theory	Remote Sensing and Geographical Information System	III	3	45
GEOB 120	Practical	Field Study, Field Trip and Report Writing		3	45

Population Geography

Theory **GEOB 117**

UNIT-I

Nature and scope of population geography; Sources and types of population data: census, sample survey and vital registration system.

UNIT-II

World population: growth, causes and consequences; Factors affecting population distribution; Migration: types and determinants; Urbanization: trends and pattern.

UNIT-III

Population dynamics: fertility and mortality, age and sex structure; Occupational structure; Demographic transition theory; human resource development: indicators and patterns.

UNIT-IV

Population problems - over population, under population; optimum population; population planning and control -- theories of Malthus, Marx and Rostov.

UNIT-V

INDIA:- Population growth; Distribution of population; Density types; Population problems;

Population Policy; measures of population control in India.

Books Recommended

1. Chandna, R. C. (2006): Geography of Population. Kalyani Publishers, New Delhi.
2. Clarke, J.I. (1972): Population Geography. Pergamon Press, Oxford.
3. Demko, G.J., Rose, H.M., and Schnell, G.A. (1970): Population Geography: A Reader, McGraw Hill, New York.
4. Dube, K.K. and Singh, M.B.(1994): Jansankhya Bhoogol, Rawat Publications, Jaipur.
5. Garnier, B.J. (1993): Geography of Population. 3rd edition. Longman, London.
6. Jones, H. R. (1981): A Population Geography. Harper and Row, New York.
7. Peters, G. L. and Larkin, R.P. (1983): Population Geography: Problems, Concepts and Prospects. Kendall/Hunt, Dubuque, IA.
8. Trewartha, G.T. (1985): A Geography of Population: World Patterns. John Wiley and Sons, New York.
9. Zelinsky, W. (1966): A Prologue to Population Geography. Prentice Hall, New Jersey.

Agricultural Geography

Theory **GEOB 118**

UNIT-I

Meaning and scope of agricultural geography; Approaches to agricultural geography; Physical, cultural and institutional factors affecting agriculture.

UNIT-II

Crop concentration and crop diversification; Delineation of crop combination regions; Agricultural regions of the world; Detailed study of subsistence, plantation, commercial and mixed farming;

UNIT-III

Agricultural land-use and carrying capacity; Land use pattern with special reference to India; Measures of agricultural efficiency and agricultural productivity.

UNIT-IV

Agro-climatic regions of India, Green revolution in India; Second generation reforms in Indian agriculture.

UNIT-V

Land and institutional reforms; Organic and contract farming; Agricultural planning and policies in India.

Books Recommended

1. Dumont, R.(1970): Types of Rural Economy: Studies in World Agriculture, Douglas Manin, London Methuen.
2. Gregor, H. P. (1970): Geography of Agriculture. Prentice-Hall, New York. 3. Husain, M. (1996): Systematic Agricultural Geography, Rawat Publications, Jaipur.
4. Misra, R. P. (1967): Diffusion of Agricultural Innovations, University of Mysore, Mysore.
5. Mohammad, A.(1978): Studies in Agricultural Geography, Rajesh Publications, New Delhi
6. Morgan, W. B. and Norton, R.J.C. (1971): Agricultural Geography. Methuen, London.
7. Sauer, O. C. (1969): Agricultural Origins and Dispersals. MIT Press, Cambridge.
8. Shafi, M. (2006): Agricultural Geography, Pearson Education, New Delhi.
9. Sen, Sudhir (1975): Reaping the Green Revolution. Tata McGraw-Hill, New Delhi
10. Shafi, M.(2000): Agricultural Geography of South Asia, McMillan, Delhi
11. Singh, B.B. (1979) : Krishi Bhugol. Tara Publications, Varanasi.
12. Singh, J. and Dhillon, S.S. (2000): Agricultural Geography. Tata McGraw Hill, New Delhi.
13. Singh, S. (1994): Agricultural Development in India: A Regional Analysis, Kaushal Publications, Shillong.
14. Symons, L. (1967): Agricultural Geography. George Bell and Sons, London.
15. Tarrant J. R. (1974): Agricultural Geography. John Wiley and Sons, New York.

Remote Sensing and Geographical Information System

Theory **GEOB 119**

UNIT-I

Remote Sensing: Concept and Scope; Electro-magnetic Radiation: Characteristics, Spectral regions and Bands; Interaction with earth surface features and atmosphere; Spectral Signature.

UNIT-II

Types of Remote Sensing: Air borne and Space borne; Aerial photos: Types and Characteristics; Remote Sensing satellites: Platforms and sensors.

Unit III

Visual and Digital image processing techniques; Remote Sensing application in resource mapping and environmental monitoring.

UNIT-IV

FUNDAMENTALS OF GIS: Concepts and definitions; Evolution and development of GIS; Computer environment for GIS; GIS as decision support system.

UNIT-V

Application of GIS technology in utilities management and other fields-GIS in land information system, urban management, environmental of management and emergency response system; Adoption of GIS technology in India; GIS project designing and implementation, Future prospects of GIS.

Books Recommended

1. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London
2. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th edition. John Wiley and Sons, New York
3. Campbell, J.B. (2002): Introduction to Remote Sensing. 5thedition, Taylor and Francis, London.

4. Bhatta, B. (2010): Remote Sensing and GIS, Oxford University Press, New Delhi.
5. Nag Prithvish and Kudrat M. (1998): Digital Remote Sensing, Concept Publishing Company, New Delhi
6. S. Aronoff: Geographic Information Systems: A Management Perspective, D.D.L. Publication, Ottawa, 1989.
7. P.A. Burrough: Principles of Geographic Information Systems for Land Resource Assessment, Oxford University Press, New York, 1986.
8. D.R. Fraser, Taylor: Geographic Information Systems, Pergaman Press, Oxford, 1991.
9. D.J. Peuquet and D.F.Marble: Introductory Readings in Geographic Information Systems, Taylor & Francis, Washington, 1990.
10. J. Star and J Estes: Geographic Information Systems: An Introduction, Prentice Hall, England Cliff. New Jersey, 1994.
11. Marks S. Monmonier: Computer- Assisted Cartography, Prentice Hall, Englewood Cliff, New Jersey, 1982.
12. I. Heywood et al: An Introduction to Geographical Systems, Pearson Education, Ltd. New Delhi, 2002.
13. Christopher B. Jones: Geographical Information Systems and Computer Cartography, Addison Wealey Longman Ltd. England, 1997.

Field Study, Field Trip and Report Writing

Practical **GEOB 120**

Fieldwork: Meaning, types and objectives of fieldwork; Fieldwork methods and techniques;
Importance of fieldwork in geography, Field work-based report writing.
Field Trip: Uttarakhand, Vindhyan Plateau, Thar Desert, Coastal area.

THE END