Syllabus Geography (Programme)

2018

CBCS Syllabus for 3-Year Undergraduate
General Course in GEOGRAPHY

1. Introduction

The syllabus for Geography at undergraduate level using the Choice Based Credit system has been framed in compliance with model syllabus given by UGC.

The main objective of framing this new syllabus is to give the students a holistic understanding of the subject giving substantial weightage to both the core content and techniques used in Geography. The syllabus has given equal importance to the two main branches of geography – Physical and Human.

The ultimate goal of the syllabus is that the students at the end are able to secure a job. Keeping in mind and in tune with the changing nature of the subject, adequate emphasis has been given on new techniques of mapping and understanding of the subject.

The syllabus has also been framed in such a way that the basic skills of subject are taught to the students, and everyone might not need to go for higher studies and the scope of securing a job after graduation will increase.

While the syllabus is in compliance with UGC model curriculum, but since it did not offer much choice on electives in Physical Geography, one more elective “Soil and Biogeography” has been added.

This new syllabus will train undergraduates to get jobs in the information and technology areas as there is great demand for preparation of digital maps and storage and retrieval of geospatial data.

2.1 Credit Distribution across Courses for General Programme

Course Type		Total Papers	Theory + Practical	Theory*+Tutorials
Core Courses	4 papers each from 3 disciplines of choice	12	12*4 =48 12*2 =24	12*5 =60 12*1=12
Elective Courses	2 papers each from 3 discipline of choice including interdisciplinary papers	6	6*4=24 6*2=12	6*5=30 6*1=6
Ability Enhancement Language Courses		2	2*2=4	2*2=4
Skill Enhancement Courses		4	4*2=8	4*2=8
Totals		24	120	120

*Tutorials of 1 Credit will be conducted in case there is no practical component

All Pass courses will have 3 subjects/disciplines of interest. Student will select 4 core courses each from discipline of choice including Geography as one of the disciplines. Student will select 2 core courses each from discipline of choice including Geography as one of the disciplines.

Student may also chose Skill Enhancement courses in Geography.

2.2Choices for Discipline Specific Electives

Discipline Specific Elective – 1 to 4	
SPGEO**/501/DSE-1A**	SPGEO **/504/DSE-2**
Hydrology and Oceanography	Soil and Biogeography
Urban Geography	Population Geography

2.3Choices for Skill Enhancement Courses

Skill Enhancement Courses	
SPGEO **/304/ SEC-1**	SPGEO **/404/SEC- 2**
Computer Basics	Computer Applications
SPGEO **/504/ SEC-3**	SPGEO **/604/SEC- 4**
Remote Sensing	Geographical Information System

3. Syllabus for Core Subject

3.3 SPGEO/101/C-1A: Physical Basis of Earth

Physical Basis of Earth **6 Credits**

Unit 1: Earth: Origin and Evolution

1. Origin of Earth (Nebular Hypothesis of Laplace)
2. Geological Time Scale and Geological History of the Earth
3. Isostasy: Origin of the concept, Theories of Airy and Pratt, Isostatic Adjustments,
4. Internal Structure of the Earth: Seismological Evidences, Physical, chemical and seismic properties of Earth layers.

Unit 2: Tectonic Theories and Processes

1 Continental Drift Theory of Alfred Wegener
2 Palaeo-magnetism and Sea Floor Spreading
3 Plate Tectonic Theory; Plate Composition, Plate Movement, Plate Margins, Triple Junctions.
4 Tectonic Processes in relation to Plate Tectonics; Oro-genesis, Earthquake, Vulcanicity

Unit 3: Process Geomorphology

1 Evolution of landforms on Uniclinal, Folded and Faulted Strata
2 Landscape Evolution Models: Davis, Penck and Hack
3 Climatic Geomorphology: Basic concepts,
4 Hillslopes: Genesis and Morphology

Reference Books

- Bloom A. L., 2001: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms,
  Prentice-Hall of India, New Delhi.
- Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
- Christopher son, Robert W., (2011), Geo-systems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
- Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.

- Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
- Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
- Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
- Thornbury W. D., 1969: Principles of Geomorphology, Wiley.

3.4 SPGEO/201/C-1B: Human Geography

Human Geography

6 Credits

Unit 1: Nature and Principles

1. Nature and scope and recent trends. Elements of Human Geography
2. Approaches to the study of Human Geography; Resource, Locational, Landscape, Environmental
3. Evolution of humans. Concept of race and ethnicity
4. Space, society and cultural regions (language and religion)

Unit 2: Society, Demography and Ekistics

1. Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies
2. Population growth and distribution, population composition; demographic transition model
3. Rural house types in India
4. Types and patterns of rural settlements

Reference Books

- Bergman, E.F (1995): Human Geography-Culture, Connections and Landscape, Prentice Hall, New Jersey
- Chisholm. (1975): Human Geography, Penguin Books, Hermondsworth.
- Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
- Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
- Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
- Norton. W. (2001): Human Geography, 4th Edition Oxford University press, Oxford

- Pearce D. (1995): Tourism Today: A Geographical Analysis, 2nd edition, Longman Scientific & Technical, London
- Pickering K. and Owen A. A. (1997): An Introduction to Global Environmental Issues, 2nd edition Rutledge, London.
- Raw, M. (1986): Understanding Human Geography: A Practical Approach, Bell and Hyman. London
- Rubenstein, J.M. (2002), The Cultural Landscape, 7th edition, Prentice Hall, Englewood Cliffs
- Smith D M (1982): Human Geography: A Welfare Approach, Edward Arnold, London

3.4 SPGEO/301/C-1C: Maps and Diagrams

Maps and Diagrams

6 Credits

Unit-1: Scale and Cartograms

1. Construction of Linear and Comparative (Unit)
2. Cartograms: Circle, Square and Pie graph
3. Age-Sex Pyramid, Dependency Ratio
4. Population Maps and Diagrams: Population Density by Choropleth, Distribution by Dot and Sphere

Unit-2: Map Projections

1 Map Projections: Nature and Classification
2 Principles, Theories, Construction and Properties of select Map Projections: Simple Conical with one standard parallel, Cylindrical Equal Area, Polar Zenithal Stereographic

Unit-3: Surveying

1 Concepts and Principles: Angles, Bearing and Azimuths, Traversing, Radiation, Intersection
2 Prismatic Compass: Preparation of landuse maps by open and closed traverse; computations of compass traverse- Included Angle, Area of traverse
3 Levelling by Dumpy Level: Profile

Unit-4: Field Report

Each student will prepare an individual report based on primary data collected from field survey and secondary data collected from different sources for either a rural area (mouza) or an urban area (municipal ward) based on cadastral or municipal maps to study specific problems.
The duration of the field work shall not exceed 3 days

Report should be hand written with the following Tentative Chapter Schemes:

Preface & Acknowledgement
Introduction: Objective, Extent and Space Relations, Data sources and Methodology
Physical Environment: Lithology, Drainage, Slope, Climate, Soil, Vegetation etc.
Socio Economic Environment: Population Characteristics, Occupational Structure, Ethnic and Religions Composition, Per-Capita Income, any other aspects.
Problems and Prospects
Bibliography if any
Appendix: Survey Questionnaire(s), Additional Tables if any
Word Limit: 3000 (Excluding Tables and Appendix).

2. A copy of the bound report, duly signed by the concerned teacher, should be submitted

Reference Books

- Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press.
- Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
- Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
- Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
- Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
- Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
- Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
- Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

3.5 Instruction for Laboratory

- Practical works are to be completed in the classroom.
- Works are to be done in pencil and neatly hand written and signed by class teachers (No need of Final Sheets).
- Laboratory Note Books will be like those used in other laboratory bases science subjects.

List of Practical

A Project File, comprising one exercise each is to be submitted

1. Graphical construction of scales: Plain, comparative
2. Construction of projections: Polar Zenithal Stereographic, Simple conic with one standard parallel and Cylindrical Equal Area
3. Preparation of land use maps by open and closed traverse; computations of compass traverse- Included Angle, Area of traverse
4. Levelling by Dumpy Level: Profile
5. **Field Report**

   Report should be hand written with the following Tentative Chapter Schemes: Preface & Acknowledgement

   Introduction: Objective, Extent and Space Relations, Data sources and Methodology

   Physical Environment: Lithology, Drainage, Slope, Climate, Soil, Vegetation etc.

   Socio Economic Environment: Population Characteristics, Occupational Structure,Ethnic and Religions Composition, Per-Capita Income, any other aspects.

   Problems and Prospects

   Bibliography if any

   Appendix: Survey Questionnaire(s), Additional Tables if any

   Word Limit: 3000 (Excluding Tables and Appendix).

   A copy of the bound report, duly signed by the concerned teacher, should be submitted

3.5 SPGEO/401/C-1D: Economic Geography

Economic Geography

6 Credits

Unit 1: Agriculture System and Model

1.1 Concept of Agricultural Systems
1.2 Plantation Agriculture
1.3 Mixed Farming
1.4 Model in Agricultural Geography: Von Thunen Model

Unit 2: Industrial and Transport System

2.1 Location Factors; Role of transport in industrial location
2.2 Models of Industrial Location: Weber & Losch.
2.3 Industrial Regions: Asansol-Durgapur, Haldia
2.4 Transport Network: Accessibility and Connectivity, Role of WTO, EEC, SAARC in International Trade

Reference Books

- Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- Hodder B. W. and Lee Roger, 1974: Economic Geography, Taylor and Francis.
- Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- Wheeler J. O., 1998: Economic Geography, Wiley..
- Durand L., 1961: Economic Geography, Crowell.
- Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.
- Willington D. E., 2008: Economic Geography, Husband Press.
- Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford
- Baud-Bovy, M. and Lawson, F. (1977), “Tourism and Recreation Development”, The Architectural Press Ltd, CBI Publishing Company, Boston
- Boniface, B.G. and Cooper, C.P. (1987), “The Geography of Travel & Tourism”, Heinemann Professional Publishing, Oxford.
- Burton, R. (1991), “Travel Geography”, Pitman Publishing, London.

- Butler, R.W. (2010), ed, “The Tourism Area Life Cycle: Applications and Modifications”, Vol-1, Viva Books Private Limited, New Delhi.
- Butler, R.W. (2010), ed, “The Tourism Area Life Cycle: Conceptual and Theoretical Issues”, Vol-2, Viva Books Private Limited, New Delhi.
- Cooper, C., Fletcher, J., Gilbert, D. and Wanhill, S. (1993), “Tourism: Principles and Practice”, Pitman, London.
- Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
- Mathison, A. and Wall, G. (1982), “Tourism: Economic, Physical and Social Impacts”, Longman, Harlow.
- Mill, R. C. and Morrison, A. M. (1985), “The Tourism System: An Introductory Text”, Prentice Hall, New Jersey.
- Pearce, D. (1989), “Tourism and Regional Development”, Longman, London.
- Pearce, D. (1995), Tourism Today: A Geographical Analysis, Longman, London

Department Specific Electives Subjects Syllabus

4.3 SPGEO/501/DSE-1A: Hydrology and Oceanography

Hydrology and Oceanography

6 Credits

Unit 1: Hydrology

1. Global hydrological cycle
2. Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle
3. Rainwater harvesting and watershed management
4. Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement.

Unit 2: Oceanography

1. Major relief features of the ocean floor: characteristics and origin according to plate tectonics.
2. Air-Sea interactions, ocean circulation, wave and tide.
3. Coral reefs: Formation, classification and threats.
4. Marine resources: Classification and sustainable utilisation

Reference Books

- Andrew. D. Ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
- Karanth, K.R., 1988: Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.
- Ramaswamy, C. (1985): Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.
- Rao, K.L., 1982: India's Water Wealth 2nd edition, Orient Longman, Delhi,

- Singh, Vijay P. (1995): Environmental Hydrology. Kluwer Academic Publications, the Netherlands.
- Anikouchine W. A. and Sternberg R. W., 1973: The World Oceans: An Introduction to Oceanography, Prentice-Hall.
- Garrison T., 1998: Oceanography, Wordsworth Company, Belmont.
- Kershaw S., 2000: Oceanography: An Earth Science Perspective, Stanley Thornes, And UK.
- Pinet P. R., 2008: Invitation to Oceanography (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
- Sverdrup K. A. and Armrest, E. V., 2008: An Introduction to the World Ocean, McGraw Hill, Boston.
- Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Landscape ecology and water management. Proceedings of IGU Rohtak Conference, Volume 2. Advances in Geographical and Environmental Studies, Springer

4.2 SPGEO/501/DSE-1A: Urban Geography

Urban Geography

6 Credits

Unit -1: Basic Concepts

1. Urban Geography: nature and scope, different approaches and recent trends in urban geography
2. Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods- factors, stages, and characteristics.
3. Aspects of urban places: Location, site and situation, Size and Spacing of Cities: The Rank Size Rule,
4. Urban Hierarchies : Central Place Theory;

Unit -2: Urban Processes

1. Ecological processes of urban growth; Urban fringe; City- Region
2. Theories of city structure-concentric zone theory, sector theory, multiple nuclei theory
3. Patterns and trends of urbanization in India
4. Patterns of urbanisation in developed and developing countries

Reference Books

- Fyfe N. R. and Kenny J. T., 2005: The Urban Geography Reader, Routledge.
- Graham S. and Marvin S., 2001: Splintering Urbanism: Networked Infrastructures, Technological Mobility and the Urban Condition, Routledge.
- Hall T., 2006: Urban Geography, Taylor and Francis.
- Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: Urban Geography, John Wiley.
- Knox P. L. and McCarthy L., 2005: Urbanization: An Introduction to Urban Geography, Pearson Prentice Hall New York.
- Knox P. L. and Pinch S., 2006: Urban Social Geography: An Introduction,

Prentice-Hall.

- Pacione M., 2009: Urban Geography: A Global Perspective, Taylor and Francis.
- Sassen S., 2001: The Global City: New York, London and Tokyo, Princeton University Press.
- Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
- Ramachandran, R., 1992: The Study of Urbanisation, Oxford University Press, Delhi
- Singh, R.B. (Eds.) (2001) Urban Sustainability in the Context of Global Change, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
- Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities. Advances in Geographical and Environmental Studies, Springer

4.3 SPGEO/601/DSE-1B: Soil and Biogeography

Soil and Biogeography

6 Credits

Concepts in Theory

Unit- 1 Soil Geography

1.1 Factors or soil formation. Man as an active agent of soil transformation.

1.2 Soil profile: Origin and profile characteristics of Laterite and Podzol soils

1.3 Definition and significance of soil properties: Texture and structure, pH and organic matter

1.4 Soil erosion and degradation: Factors, processes and mitigation measures

Unit 2 Biogeography

2.1 Concepts of biosphere, ecosystem, biome, Ecotone, community and ecology

2.2 Concepts of trophic structure, food chain and food web. Energy flow in ecosystems

2.3 Geographical extent and characteristic features of: Tropical rain forest, Taiga and Grassland biomes

2.4 Bio-geochemical cycles with special reference to carbon dioxide and nitrogen

Reference Books

- Biswas, T.D. and Mukherjee, S.K. 1997: Textbook of Soil Science, TataMcGraw Hill,
- Brady, N.C. and Weil, R.R. 1996. The Nature and Properties of Soil, 11th edition, Longman, London :
- Floth, H.D. 1990. Fundamentals of Soil science, 8th edition, John Wiley and Sons, New York.
- Morgan, R.P.C. 1995 Soil Erosion and Conservation, 2nd edition, Longman, London
- Schwab, G.O., Fangmer, D.D. and Elliot, W.J. 1996. Soil and Water Management Systems, 4th edition, John Eiley and sons Inc., New York
- Young, A. 2000. Land Resource: Now and Future, Cambridge University Press, Cambridge: 332p. Chapman J.L. and Rens, M.J. 1993. Ecology: Principle and Applications, Cambridge University Press, Cambridge:

- Chairas, D.D. Reganold, J.P. and Owen, O.S. 2002. National Resource Conservation and management for a Sustainable Future, 8th edition, Prentice Hall, Englewood Cliffs

Dash, M.C., 2001. Fundamental of Ecology, 2nd edition, Tata McGrawHill, New Delhi

- Huggett, R. 1998. Fundamentals of Biogeography, Routledge, London:
- Kormondy, E.J. 1996. Concept of Ecology, 4th edition, Prentice- Hall, India, New Delhi
- Myers, A. A. and Giller, P.S. (editors) 1988. Analytical Biogeography: an Integrated Approach to the Study of Animal and Plant Distribution. Chapman and Hall, London

4.5 SPGEO/601/DSE-1B: Population Geography

Population Geography

6 Credits

Unit 1: Basic Concepts

1. Population distribution: density and growth.
2. Demographic transition model.
3. World patterns determinants of population distribution and growth. Concept of overpopulation, under population and optimum population.
4. Population distribution, density and growth profile in India.

Unit 2: Composition and Policies

1. Population Composition and Characteristics– Age-Sex Composition; Rural and Urban Composition; Literacy.
2. Measurements of fertility and mortality.
3. Population composition of India. Urbanisation, Occupational structure.
4. Migration: Causes and types

Reference Books

- Barrett H. R., 1995: Population Geography, Oliver and Boyd.
- Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
- Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
- Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
- Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
- Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan
- Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
- Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
- Wilson M. G. A., 1968: Population Geography, Nelson.

5. Skill Enhancement Subjects Syllabus

5.2 SPGEO/304/SEC-1: Computer Basics

Computer Basics **2 Credits**

1. Knowing computer: What is Computer, Basic Applications of Computer
   Computer Memory, Concepts of Hardware and Software; Operating System; Running an Application, Viewing of File, Folders and Directories, Creating and Renaming of files and folders,
2. Understanding Word Processing
3. Using Spread Sheet:Basics of Spreadsheet; Manipulation of cells; Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet.
4. Concept of Internet; Applications of Internet; World Wide Web; Email;
5. Making Small Presentation: Microsoft Power point

5.5 SPGEO/404/SEC-2: Computer Applications

Computer Applications	2 Credits

1. Computation, Storing and Formatting Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation,
2. Preparation of Annotated Diagrams: Line, Bar, Pie, Histogram and Scatter diagram;
3. Internet Surfing: generation and extraction of information from important academic sites

Reference Books

- Bartee, Thomas C. (1977): Digital Computer Fundamental; McGraw Hill.
- Chauhan, S.; Chauhan, A. and Gupta, K. (2006): Fundamental of Computer; Firewall Media.
- Flake, L.J.; McClintock, C.E. and Turner, S. (1989): Fundamental of Computer Education; Wordsworth Pub. Co.
- Leon, A .and Leon,M.(1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- Malvino, A.P. and Leach, D.P. (1981): Digital Principles and Appications; Tata McGraw Hill.
- Mano, Moris M. and Kime, Charles R. (2004): Logic and Computer Design Fundamental; Prentice Hall.
- Rajaraman, V. (2003): Fundamentals of Computer, Prentice Hall Publisher
- Sarkar, A. and Gupta, S.K (2002) Elements of computer Science, S Chand and Company, New Delhi
- Blissmer (1996): Working with MS Word; Houghton Mifflin Co.
- Johnson, Steve (2007): Microsoft Power Point 2007; Pearson Paravia Bruno.
- Leon, A .and Leon,M.(1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- Leon, A. and Leon, M.(1999): A beginners Guide to Computers, Vikas

5.3 SPGEO/504/SEC-3: Remote Sensing

Remote Sensing

2 Credits

Unit-1: Remote Sensing: Basic Concepts

1 Basic Concepts: Energy Sources, Interactions with Atmosphere, Sensing Systems, Data Products,

1 Principles of preparing Standard False Colour Composites

3. Principles of image interpretation and feature extraction. Preparation of inventories of land use land cover (LULC) features from satellite images.

Reference Books

- Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press.
- Jensen J. R., 2004: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall.
- Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India.
- Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition).
- Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
- Rees W. G., 2001: Physical Principles of Remote Sensing, Cambridge University Press.
- Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub.
- Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS, McGraw- Hill.
- Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

5.4 SPGEO/604/SEC-4: Geographic Information System

Geographic Information System

2 Credits

1 G.I.S: Basic Concepts, Components,
2 GIS Data structure: Raster and vector.
3 Dereferencing, Digitization
4 Map Composition and Layout

References

- JatinPandey and DarshanaPathak, 2013, Geographic Information System, TERI Publishing House.
- Chor Pang Lo, 2009, Concepts and Techniques of Geographic Information System, Prentice Hall.
- Michael N. Demers, 2012, Fundamentals of Geographic Information Systems, Willy.
- Chairsman, N. 1992. Exploring Geographical Information Systems, John
- Willey and Sons Inc., new York, 198p

7 Semesterwise Structure in General Programme

SEMESTER – I

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
11908 11918	SP/GEO101/C-1A	Physical Basis of Earth	6	10	40	0	50	5	1	-
	SP/102/C-2A	Discipline-2	6	10	40		50			
	SP/103/ C-3A	Discipline-3	6	10	40		50			
11800 11810	ACSHP/ 104/ AECC-1	Environmental Studies	4	10	40		50			
Total in Semester - I			**22**	**40**	**160**	**0**	**200**	**5**	**1**	**-**

SEMESTER –II

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
21908 21918	SP/GEO201/C-1B	Human Geography	6	10	40	0	50	5	1	-
	SP/202/ C-2B	Discipline - 2	6	10	40	0	50			
	SP/ 203/C-3B	Discipline - 3	6	10	40	0	50			
	ACSHP/204/ AECC-2	English/MIL	2	10	40	0	50			
Total in Semester - II			**20**	**40**	**160**	**0**	**200**	**5**	**1**	**-**

SEMESTER – III

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
31908 31928	SP/GEO301/C-1C	Maps and Diagrams and Cartographic Techniques	6	10	0	40	50	4	-	4
	SP/302/C-2C	Discipline - 2	6	10	40	0	50			
	SP/ 303/ C-3	Discipline - 3	6	10	40	0	50			
31900 31910	SP/GEO/304/SEC-1	Computer Basics	2	10	40	0	50	-	-	4
Total in Semester - III			**20**	**40**	**120**	**40**	**200**	**4**		**8**

SEMESTER – IV

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
41908 41918	SP/GEO401/C-1D	Economic Geography	6	10	40		50	5	1	-
	SP/ 402/ C-2D	Discipline-2	6	10	40		50			
	SP/ 403/ C-3D	Discipline-3	6	10	40		50			
41900 41920	SP/GEO/404/ SEC-2	Computer Applications	2	10	0	40	50	-	-	4
Total in Semester - IV			**20**	**40**	**120**	**40**	**200**	**5**	**1**	**4**

SEMESTER – V

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
51908 51918	SP/GEO501/DSE-1A	Hydrology and Oceanography or Urban Geography	6	10	40	0	50	5	1	-
	SP/502/DSE-2A	Discipline - 2	6	10	40	0	50			
	SP/503/DSE-3A	Discipline - 3	6	10	40	0	50			
51900 51920	SP/GEO504/SEC-3	Remote Sensing	2	10	0	40	50			4
Total in Semester – V			**20**	**40**	**120**	**40**	**200**	**5**	**1**	**4**

SEMESTER – VI

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
61908 61918	SP/GEO601/DSE-1B	Soil and Biogeography or Population Geography	6	10	40	0	50	5	1	-
	SP/602/DSE-2B	Discipline - 2	6	10	40	0	50			
	SP/603/DSE-3B	Discipline - 3	6	10	40	0	50			
61900 61920	SP/GEO604/SEC-4	Geographic Information System Lab	2	10	0	40	50			4
Total in Semester – VI			**20**	**40**	**120**	**40**	**200**	**5**	**1**	**4**

SP= Science programme/Pass, GEO.= Geography, ACSHP= Arts Commerce Science Honours Pass, C= Core Course, MIL= Modern Indian Language, AECC = Ability Enhancement Compulsory Course, SEC= Skill Enhancement Course, DSE= Discipline Specific Elective IA= Internal Assessment, ESE= End-Semester Examination, Lec.= Lecture, Tu.= Tutorial, and Pr.=Practical