

SEMESTER-V

Category I

(B.A. Honours in Geography in three years)

DISCIPLINE SPECIFIC CORE COURSE – ENVIRONMENT AND ECOLOGY (DSC 13)

Course title & Code	Credits	Duration (Hrs per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
ENVIRONMENT AND ECOLOGY	4	3	1	0	Class 12th	NIL

Learning Objectives:

1. Various dimensions of ecology and ecosystems, their spatial distribution.
2. To learn about the global environmental challenges and management
3. To know about regional environmental challenges.
4. Understanding of environmental governance.

Learning Outcomes:

1. Detailed exposure to the concept of ecology, ecosystem, processes, theories and concepts.
2. In-depth knowledge of anthropogenic interventions and impacts, conservation strategies and planning.
3. Understanding the environmental concerns at global and regional level.
4. Evaluation and achievement of different environmental programs, policies and legislations.

Course Outline:

Unit-1 Introduction: (7 hrs)

- Concept of Environment, Ecology and Ecosystem; Types of Ecology; Concepts of Ecosystem Services; Ecological and Material Footprint; Global Planetary Boundaries.

Unit-2 Ecology and Ecosystem: (9 hrs)

- Species Interactions; Ecological Limiting Factors; Ecosystem: Structure and Functions; Human Adaptation

Unit-3 Global Environmental Challenges and Management: (11 hrs)

- Climate Change, Biodiversity loss, Land degradation and Human health issues

Unit-4 Regional Ecological Issues and Management: (11 hrs)

- Coastal and Marine Ecology: Loss of mangroves and corals, Garbage Patches; Urban Ecology: Waste disposal and Pollution

Unit-5 Programmes and Policies: (7 hrs)

- Environmental Impact Assessment; Global and National Environment Policy of India

Readings:

- Brewster, E. N. 2010. *Climate Change Adaptation: Steps for a Vulnerable Planet*, New York, Nova Science.
- Cain, M.L., Bowman, W.D. and Hacker S.D. (2011). *Ecology*, 2nd Edition, Sinauer Associates Inc.
- Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
- Chapman, J.L. & M.J. Reiss. (1998). *Ecology: Principles and Applications*. Cambridge Univ. press.
- Cunningham W. P. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
- Das, R. C., 1998. *The Environmental Divide: The Dilemma of Developing Countries*, A.P.H. Pub., New Delhi.
- Freedman, Bill. 1995. *Environmental Ecology: The Ecological Effects of Pollution, Disturbance, and Other Stresses*, Academic Press. London.
- Global Environment Monitoring UNEP, <https://wesr.unep.org/article/global-environment-monitoring>
- Global Environmental Outlook Reports UNEP <https://www.unep.org/geo/>
Intergovernmental Panel on Climate Change IPCC Reports(2021-23)
<https://www.ipcc.ch/report/ar6/wg2/>

**DISCIPLINE SPECIFIC CORE COURSE – AGRICULTURAL
GEOGRAPHY AND FOOD SECURITY (DSC 14)**

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
AGRICULTURAL GEOGRAPHY AND FOOD SECURITY	4	3	1	0	Class 12th	NIL

Learning Objectives:

- To understand the nature and scope of agricultural geography.
- To provide a detailed analysis of landuse- landcover classification by NRSA.
- To enable the learners to appreciate the geographical factors affecting agriculture
- To enable the learner to identify and understand modern agricultural practices.
- To enable the learner to identify and understand the concept and dimensions of food security.

Learning Outcomes:

- A detailed insight into the subfield of agricultural geography.
- An in-depth knowledge of geographical factors affecting agriculture.
- An understanding of models and regionalization of agriculture.
- Knowledge of concepts and dimensions of food security.
- An understanding of challenges, programme and policies related to sustainable agriculture.

Course Outline

UNIT 1: Concept of Agricultural Geography: (7 hrs)

- Nature and Scope, concept and classification of landuse- landcover (twenty two fold NRSA).

Unit 2: Geographical Factors affecting Agriculture: (10 hrs)

- Physical, Economic, Technological, Institutional and socio-cultural.

Unit 3: Models, Theories and Regionalization: (10 hrs)

- Whittlesey's classification of Agricultural regions; Agro ecological regions of India

Unit 4: Agricultural Development: (11 hrs)

- Concept and relevance of Sustainable Agriculture, Modern Agricultural Practices (Green Revolution, Organic farming, Precision Agriculture: role of Remote Sensing and GIS modelling, role of Artificial Intelligence)

Unit 5: Food Security: (7 hrs)

- Concept and dimensions, Food security in India: Challenges, Programmes and Policy.

Readings:

- Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970.
- Grigg, D. (1984): 'An Introduction to Agricultural Geography', Hutchinson Publication, London
- Hussain, M., 2000, Agricultural Geography, Rawat Publications
- Modgal, Suresh, 2017, Food Security of India, National Book Trust, 81-237-7131-2
- Ramaswamy, S. and Surulivel, L., 2017, Food Security in India, MJP Publishers, ISBN: 9788180943386, 8180943380
- Singh, J. and Dhillon, S.S. (1988), "Agricultural Geography", 2nd edition, Tata McGraw-Hill, NewDelhi
- Swaminathan, M.S., 2016, Combating Hunger and Achieving Food Security, Cambridge University Press, 9781107123113
- Symons, L. (1972): 'Agricultural Geography', Bell and Sons, London.
- Tarrant, J.R.(1974): Agricultural Geography, Problems in Modern Geography Series, John Wiley and Sons
- माजिद हुसैन, 2000, कृषि भूगोल, Rawat Publications, 9788170335658

DISCIPLINE SPECIFIC CORE COURSE – RESEARCH METHODOLOGY AND FIELDWORK (PRACTICAL) (DSC 15)

Course title & Code	Credits	Duration (Hrs per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
RESEARCH METHODOLOGY AND FIELDWORK (PRACTICAL)	4	2	0	2	Class 12th	NIL

Learning Objectives:

1. To form an understanding of various dimensions of fieldwork and its role in geographical studies.
2. To understand in detail various field techniques .
3. Understanding of nuances of research instruments, field tools and report writing.

Learning Outcomes:

1. Detailed exposure of field techniques to study new geographical landscapes.
2. In-depth knowledge of different research instruments and field techniques.
3. Understanding field ethics.

Course Outline

UNIT 1: Research methodology and fieldwork: (5 hrs)

- concept, relevance, ethics and steps.

UNIT 2: Framing a research proposal: (5 hrs)

- identifying the research problem and study area, literature review, research questions, hypothesis, objectives, delineating the database and methods, framing the study relevance.

UNIT 3: Methods of Data collection and fieldwork: (5 hrs)

- Observation, Questionnaires, Interviews, Transects and Quadrants, Triangulation, pilot surveys, Recent trends

UNIT 4: Data analysis and interpretation: (5 hrs)

- Qualitative and Quantitative techniques of analysis; interpreting research findings

UNIT 5: Field Report: (5 hrs)

- Organisation and preparation, referencing, endnote, footnotes, supplementary materials. **Practical Record: 60 Hours**

1. Each student will prepare a report based on primary and secondary data collected during the field.
2. Handwritten (not less than 30 pages)/ typed (8000-12000 words), including preface, certificate of originality, acknowledgement, table of contents, list of figures and tables, chapters, conclusions, bibliography and appendixes.
3. One copy of the report on A 4 size paper should be submitted in soft binding.

Readings

- Creswell, J., (1994). Research Design: Qualitative and Quantitative Approaches. UK: Sage Publications.
- Dikshit, R. D. (2003). The Art and Science of Geography: Integrated Readings. New Delhi, India: Prentice-Hall of India.
- Robinson, A. (1998). Thinking Straight and Writing That Way. In Pryczak, F. and

Bruce, R. P. eds.. Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences. Los Angeles, USA: Routledge.

- Special Issue on "Doing Fieldwork" The Geographical Review 91:1-2 (2001)
- Evans, M. (1988). Participant Observation: The Researcher as Research Tool. In Eylesand, J and D. Smith (eds). Qualitative Methods in Human Geography. Cambridge, UK: Polity.
- Mukherjee, N. (2002). Participatory Learning and Action: with 100 Field Methods. Delhi, India: Concept Pubs. Co.
- Vero, E. Sara, (2021) Fieldwork Rady: An Introductory Guide to Field Research for Agriculture, Environment and Soil Scientists, Wiley, Hoboken, USA.
- Pole, S and Hillyard, S., (2015), Doing Fieldwork. Sage Publication, LA, New Delhi.
- Wolcott, H. (1995). The Art of Fieldwork. CA, USA: Alta Mira Press.
- Krishnanad and Raman VAV., (2018) A Geographer's Guide to Field Work and Research Methodology" Book Age Publications, New Delhi.

Hindi

- Jain, BM (2015) रिसर्च मेथोडोलॉजी! Research Publications in Social Science, Delhi-Jaipur.
- Ganeshan, SN. (2009) अनुसंधान प्रविधध ससद्धान्त औ प्रक्रिया ! Lokbharti Prakashan, Allahabad.
- Sharma, RA (2021) शिक्षा अनुसन्धान के मूल तत्व एवं िोध प्रक्रिया. R Lall Book Depot, Meerut.

DISCIPLINE SPECIFIC ELECTIVE COURSE - POLITICAL GEOGRAPHY (DSE 6)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
POLITICAL GEOGRAPHY	4	3	1	0	Class 12th	NIL

Learning Objectives

The learning objectives of the course are as follows:

- To explain the evolution of the sub field of political geography, and the contribution of its leading scholars
- To explain the key concepts and theories of the subfield of political geography
- To explain the significance of political processes and their relation to space

Learning outcomes

After completing this course, the student would be able to:

- Distinguish between Political Geography and Geopolitics and understand the importance of both
- Understand how geography affects politics and how politics affects geography
- Understand the role of geographical factors in influencing voter turnout, voting behaviour and the outcome of elections
- Understand conflicts over resources and issues related to displacement at different scales.

Course Outline

Unit 1: Introduction: (9 hrs)

- Evolution of Political Geography; Concept of State, Nation and Nation-state; Attributes of State; Frontiers and Boundaries.

Unit 2: Geopolitics: (10 hrs)

- Geopolitics: Concept; Theories of Ratzel; Geostrategic views of Mackinder and Spykman;

Unit 3: Electoral Geography: (8 hrs)

- Geographic influences on voting pattern; geography of representation and Gerrymandering.

Unit 4: Geography of Conflicts and Displacement (case studies): (9 hrs)

- Water sharing disputes; Rights of indigenous people to forests; Boundary conflicts and forced migration; Development induced displacement

Unit 5: Contemporary Political Issues: (9 hrs)

- Environmental Politics; India as an emerging power (Global and Regional)

References:

Essential:

- Agnew, J. (2002) *Making Political Geography*. London,UK: Arnold
- Painter J. and Jeffrey, A. (2009) *Political Geography*. USA: Sage Publications
- Taylor, P. and Flint, C. (2000) *Political Geography*. UK: Pearson Education
- Verma, M.K. (2004) *Development, Displacement and Resettlement*. Delhi: Rawat Publications
- Adhikari,S. (2013) *Political Geography of India*. Allahabad:Sharda Pustak Bhawan
- Glassner, M. (1993) *Political Geography*. USA:Wiley
- Zamindar, V. F. (2013) *India-Pakistan Partition 1947 and forced migration*. Wiley Online Library <https://doi.org/10.1002/9781444351071.wbeghm285>
- Sibley, D. (2002) *Geographies of Exclusion*. Routledge
- DeSombre, E.R. (2020) *What is Environmental Politics?* Wiley

Suggestive:

- Cox, K. (2002) *Political Geography: Territory, State and Society*. USA: Wiley-Blackwell
- Gallaher, C. et al. (2009) *Key Concepts in Political Geography*. USA: Sage Publications
- Smith, S. (2020) *Political Geography: A Critical Introduction*. USA: Wiley-Blackwell
- Rosenbaum, W.A. (2022) *Environmental Politics and Policy 12th Edition*. CQ Press
- Dwivedi, R.L. and Misra, H.N. (2019) *Fundamentals of Political Geography*. Surjeet Publications.

DISCIPLINE SPECIFIC ELECTIVE COURSE –SOCIAL GEOGRAPHY (DSE 7)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
SOCIAL GEOGRAPHY	4	3	1	0	Class 12th	NIL

Learning Objectives

- To familiarise the student with the theoretical foundations of Social Geography.
- To help students appreciate how social diversity is manifested in socio-spatial patterns.
- To help student understand that social wellbeing is a spatially variable condition and appreciate its correlates.

Learning Outcomes:

On completion of the course, students will:

- understand the basic concepts of social geography, social diversity, social wellbeing and social exclusion/ inclusion.
- possess the knowledge of socio-cultural regions of India.

- understand patterns of social well-being, and welfare policies and programs in India.
- understand the relation between the process of social exclusion/inclusion and space.

Course Outline

Unit 1: Social Geography: (8 hrs)

- Origin, Nature and Scope; Concept of Social Space.

Unit 2 : Social Differences and Diversity: (10 hrs)

- Concepts; Socio- Cultural Regions, languageregions of India

Unit 3: Social Wellbeing: (9 hrs)

- Concept of Social Well Being; Needs and Wants; Components of Social Well Being: Healthcare, Education, Housing; Gender Equality in India.

Unit 4: Social Geographies of Exclusion and Inclusion: (9 hrs)

- Ethnicity, race, religion based social and spatial exclusion, Disability and Space.

Unit 5: Social Welfare Policies and Programs: (9 hrs)

- Policies for People with Disabilities, senior citizens and Transgenders.

Readings:

- Ahmed, A., (1999): Social Geography, Rawat Publications.
- Buttner, A., (1969): "Social Space in Interdisciplinary Perspective", Geographical Review, Vol. 59, No. 3
- Casino, V. J. D., Jr., (2009): Social Geography: A Critical Introduction, Wiley Blackwell.
- Cater, J. and Jones, T., (2000): Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
- Dutt, A.K., Thakur, B., Wadhwa, V., and Costa, F.J. (2012) Facets of Social Geography: International and Indian Perspective, Cambridge University Press India Ltd.
- Lefebvre, H., (1991): The Production of Space, Wiley-Blackwell.
- Maurya, S.D., (2022): सामाजिक भूगोल, Sharda Pustak Bhawan
- Panday, P and Singh, (2020): सामाजिक भूगोल, SBPD Publications
- Panelli, R., (2004): Social Geographies: From Difference to Action, Sage.
- Paine, R. Burke, M., Fuller, D., Gough, J., Macfarlane, R. and Mowl, G., (2001): Introducing Social Geographies, Oxford University Press.
- Ramotra, K.C., (2008): Development Processes and the scheduled Castes, Rawat Publication.
- Slum Almanac 2015-16- A UN Habitat Report
- Smith, D. M., (1977): Human geography: A Welfare Approach, Edward Arnold, London.
- Smith, D. M., (1994): Geography and Social Justice, Blackwell, Oxford.
- Smith, S. J., Pain, R., Marston, S. A., Jones, J. P., (2009): The SAGE Handbook of Social Geographies, Sage Publications.
- ☐ Soja, E.W., (1996): *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places*, Wiley-Blackwell.

- Soja, E.W., (1999): *Thirdspace: Expanding the Scope of the Geographical Imagination*, D. Massey, J. Allen, P.Sarre, Human Geography Today, Blackwell Publishers, Cambridge, UK,
- Soldatic, K., Morgan, H. and Roulstone, A., (2019): *Disability, Spaces and Places of Policy Exclusion*, Routledge.
- Sopher, David., (1980): *An Exploration of India*, Cornell University Press, Ithasa.
- Valentine, G., (2001): *Social Geographies: Space and Society*, Prentice Hall.

GENERAL ELECTIVE- WORLD REGIONAL GEOGRAPHY (GE 13)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
WORLD REGIONAL GEOGRAPHY	4	3	1	0	Class 12th	NIL

Learning Objectives:

- To provide a comprehensive understanding of the world's regions
- To develop an in-depth knowledge about the different regions and their distinctive features
- To understand the interconnectedness of global issues and global regions.

Learning Outcomes:

- Detailed exposure to the concept and nature of regions in geography.
- In-depth knowledge of different regions based on multidimensional criteria.
- Understanding the interrelationship of cultural and economic factors in creating regionscapes.
- Comprehending the intricate interwoven reality of regions through the case study approach of South Asia.

Course Outline

Unit 1- Introduction: (8 hrs)

- Concept of a Region, Classification of Regions- Formal (Natural,Cultural), Functional (Economic, Administrative) and Perceptual Regions (6 Hours)

Unit 2- Natural Regions: (10 hrs)

- Equatorial, Tropical, Temperate, Taiga, Tundra regions (Location,Climate, Natural Vegetation, Human and Economic life in these regions) (12 Hours)

Unit 3- Economic Regions: (9 hrs)

- Major industrial (manufacturing) regions of Asia, North America, South America, Europe and Africa (One Case Study from each continent) (10 Hours)

Unit 4- Cultural Regions: (9 hrs)

- Major Cultural Realms/Regions of the World as given by Russell and Kniffen, 1951 and Broek and Webb, 1967. (7 Hours)

Unit 5- Systematic study of South Asia: (9 hrs)

- Natural Divisions, Economy, Demography and Population Dynamics (10 Hours)

Readings

- Broek, J. O. M., Webb, J. W., & Hsu, M. L. (1968). A Geography of Mankind. New York: McGraw-Hill.
- De Blij, H. J., Muller, P. O., Nijman, J., & Schouten, F. G. (2012). Geography: Realms, Regions, and Concepts. Wiley.
- Goh, C. L. (1974). Certificate Physical and Human Geography. Oxford University Press.
- Hopkins, J., & Spillman, B. (2017). The Geography of the World Economy. Routledge.
- Jordan-Bychkov, T. G., Domosh, M., & Rowntree, L. (2013). The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman.
- Knox, P. L., & Marston, S. A. (2019). Human geography: Places and regions in global context. Pearson.
- Russell, R. J., & Kniffen, F. B. (1951). Culture Worlds. New York.
- Schwartzberg, J. E. (1978): A Historical Atlas of South Asia. The University of Chicago Press, Chicago and London.
- White, G. W., Bradshaw, M. J., Dymond, J., & White, G. (2011). Essentials of World Regional Geography. New York: McGraw-Hill.

Hindi

- Gautam, Alka. (2018): Vishwa ka Pradeshik Bhugol, Sharda Pustak Bhavan, Allahabad.

GENERAL ELECTIVE- GEOGRAPHY OF TRADE AND COMMERCE (GE 14)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Geography of Trade and Commerce	4	3	1	0	Class 12th	NIL

Learning Objectives:

The learning objectives for the Course are as follows:

- To develop an understanding of the concepts relating to trade and commerce.
- To introduce major theories of trade
- To learn about spatial patterns and spatiality of trade regimes
- To appreciate the trajectory of India's international trade

Learning Outcomes:

The students will learn the following:

- to appreciate factors and barriers to international trade and commerce
- Students would be able to develop an understanding of the key theories of international trade
- Students would be able to identify the institutional mechanisms governing international trade and be exposed to actual case studies
- Students would be able to analyze the patterns of International Trade with reference to India

Course Outline

Unit 1: Introduction to Trade and Commerce: (8 hrs)

- Definition and Concepts- International trade, Commerce, Export/Import and Balance of trade; Factors affecting international trade; Barriers to international trade

Unit 2: Theories of Trade: (10 hrs)

- Classical Theories- David Ricardo's Comparative Advantage, Contemporary Theories- Paul Krugman's New Trade Theory

Unit 3: Trade Blocs and Institutional Bodies: (9 hrs)

- WTO, IMF and World Bank; Regional Trade Blocks: European Union, ASEAN, CACM, OPEC;

Unit 4: Impact of International Trade: (9 hrs)

- Case studies of Bangladesh garment industry and Brazil service trade

Unit 5: Patterns of International Trade with reference to India: (9 hrs)

- Volume of Trade ; Direction of Trade Flows ; Commodity Composition

Readings

- Batra, A. (2022). *India's Trade Policy in the 21st Century*. Routledge.
- Dee, M. (2015). *The European Union in a multipolar world: world trade, global governance and the case of the WTO*. Springer.
- Ernst, D., Ganiatsos, T., & Mytelka, L. (Eds.). (2003). *Technological capabilities and export success in Asia*. Routledge.
- ESCAP, U. (1995). *Development of the export-oriented electronics goods sector in Asia and the Pacific*.
- Gandolfo, G., & Trionfetti, F. (2014). *International trade theory and policy*. Berlin, Heidelberg, New York: Springer.
- Garavini, G. (2019). *The rise and fall of OPEC in the twentieth century*. Oxford University Press.
- Hoekman, B. M., Mattoo, A., & English, P. (Eds.). (2002). *Development, trade, and the WTO: a handbook (Vol. 1)*. World Bank Publications.
- Kathuria, S., & Malouche, M. M. (2015). *Toward New Sources of Competitiveness in Bangladesh: Key Insights of the Diagnostic Trade Integration Study*. World Bank Publications.
- Kobayashi, K., Rashid, K. A., Furuichi, M., & Anderson, W. P. (Eds.). (2017). *Economic integration and regional development: the ASEAN economic community*. Routledge.
- Krugman, P. R. (2018). *International trade: Theory and policy*. Pearson.
- Leong, G.H. and Morgan, G. C. (1982) *Human and Economic Geography*. Oxford University Press.
- Lopez-Acevedo, G., & Robertson, R. (Eds.). (2016). *Stitches to riches?: Apparel employment, trade, and economic development in South Asia*. World Bank Publications.
- Michael, P. Todaro, and C. Smith Stephen (2000). *Economic Development*. Pearson.
- Peet, R. (2009). *Unholy trinity: the IMF, World Bank and WTO*. Bloomsbury Publishing.
- Pereira, L. V., Sennes, R. U., & Mulder, N. (2009). *Brazil's emergence at the regional export leader in services: a case specialization in business services*. ECLAC.
- Rahman, S. (2013). *Broken promises of globalization: The case of the Bangladesh garment industry*. Lexington Books.
- Raychauduri, A., De, P., & Gupta, S. (Eds.). (2020). *World Trade and India: Multilateralism, Progress and Policy Response*. Sage Publications Pvt. Limited.
- Seymour, I. (1980). *OPEC: instrument of change*. Springer.
- Sinha, V.C. (2015). *अंतर्राष्ट्रीय व्यापार और षित्त*. Mayur Paperbacks: Ghaziabad.
- Suranovic, S. (2010). *International trade: Theory and policy*.
- Thoman, R. S., & Conkling, E. C. (1967). *Geography of International Trade*. Prentice-Hall.
- Veeramani, C., & Nagaraj, R. (Eds.). (2018). *International trade and industrial development in India: Emerging trends, patterns and issues*. Orient BlackSwan.
- Yadav, P. (2021). *Geographical perspectives on international trade*. Springer International Publishing.

GENERAL ELECTIVE- CLIMATE CHANGE AND ADAPTATION (GE 15)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
CLIMATE CHANGE AND ADAPTATION	4	3	1	0	Class 12th	NIL

Learning Objectives:

The course deals with a critical global concern. The key objectives are:

- To explain various dimensions of climate change.
- To develop a detailed analysis of vulnerability and its impacts.
- To discuss the importance of mitigation and adaptation strategies.
- To evaluate the role of global initiatives and policies for climate change.

Learning Outcomes:

On transacting the course students will have an in-depth knowledge of the following:

- Anthropogenic Climate Change and related issues
- Geographic dimensions of vulnerability.
- Impact of climate change, adaptation and mitigation
- Need for effective policy making

Course Outline

Unit 1: Understanding Climate Change: (9 hrs)

- Natural and Anthropogenic causes and evidences

Unit 2: Climate Change and Vulnerability: (9 hrs)

- Physical, Economic and Social Vulnerability

Unit 3: Impact of Climate Change: (10 hrs)

- Ecosystem-Terrestrial and Aquatic; Agriculture and Food Security

Unit 4: Global Initiatives for Adaptation and Mitigation: (9 hrs)

- National and international case studies

Unit 5: Climate Change Policy: (8 hrs)

- Framework from Kyoto to Paris: Role of IPCC;UNFCCC and COPs

Readings

- IPCC. *Climate Change 2022: Impacts, Adaptation, and Vulnerability. SIXTH Assessment Report of the Intergovernmental Panel on Climate Change*. NY, USA:Cambridge University Press, Cambridge, United Kingdom and New York.
- Trevor. M. Letcher (edited) 2009: *Climate Change: Observed impacts on Planet Earth*
- Narain.S 2021:*Climate Change Science and Politics. Centre for Science andEnvironment*
- Sarah L. Burch and Sara E. Harris: *Understanding Climate Change: Science, Policy andPractice*
- Sen, Roy, S., and Singh, R.B., (2002). *Climate Variability, Extreme Events and Agricultural Productivity in Mountain Regions*. Delhi, India: Oxford & IBH Pub.
- Leary Neil and others, 2008: *Climate Change and Adaptation*
- OECD. (2008). *Climate Change Mitigation: What do we do?* (Organization andEconomic Co-operation and Development).
- UNEP. (2007). *Global Environment Outlook: GEO4: Environment for Development*.Nairobi, Kenya: United Nations Environment Programme.
- Reddy M.A, Vijay Lakshmi T “*Climate Change:Vulnerability and Adaptation*”