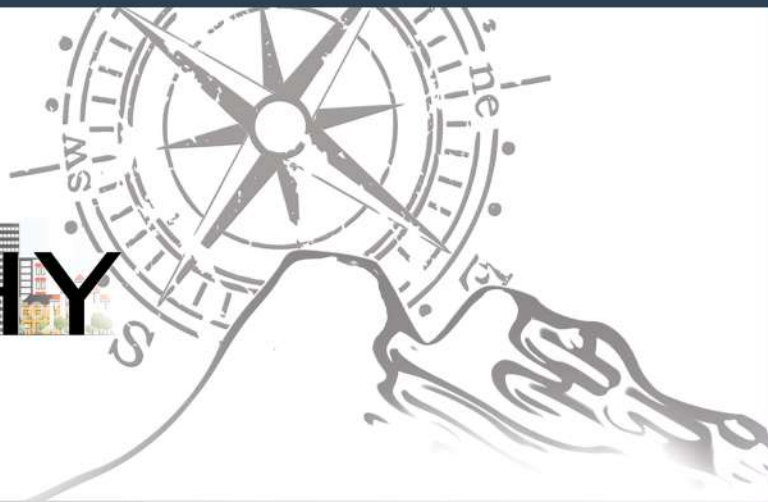




SREE SANKARACHARYA UNIVERSITY OF SANSKRIT, KALADY, KERALA

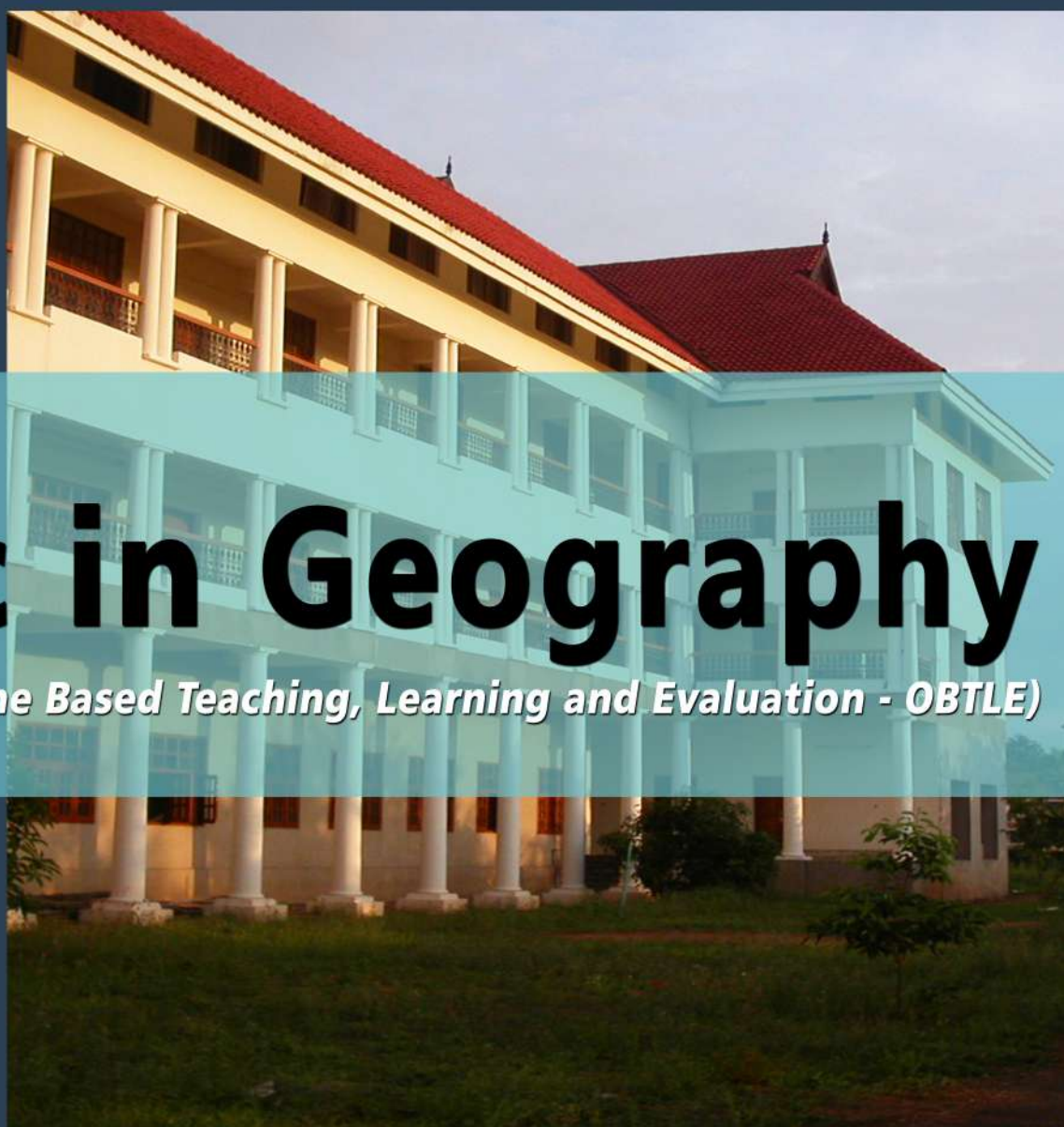
DEPARTMENT OF GEOGRAPHY



Syllabi of

M.Sc in Geography

(Outcome Based Teaching, Learning and Evaluation - OBTLE)



**APRIL
2019**



SYLLABI OF MASTER OF SCIENCE (MSc) IN GEOGRAPHY – 2019

(Outcome Based Teaching, Learning and Evaluation – OBLTE)

April 2019

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Preface

The Masters Programme hosted in the Department of Geography at SSUS is designed to reflect the knowledge of theories, concepts, techniques and technologies in human and physical aspects of geography. Geography is the study of physical environments and human habitats. It deals with people and places. It covers issues such as global warming and climate change, food and water resources, management of ecosystems, human modifications of land, regional economic disparities, and urban infrastructure from various theoretical positions. Both a physical and a social science, it provides a unique opportunity to obtain a broad exposure to modes of analyzing the many ecological and cultural problems of contemporary society. The department is based in the Faculty of Science, Technology and Education and offers degrees at the Masters (M.Sc), and Research (M.Phil &Ph.D.) levels.

OBTLE Abbreviations

OBTLE	-	Outcome Based Teaching and Learning Education
CL	-	Cognitive Level
Re	-	Remember
Un	-	Understand
Ap	-	Apply
An	-	Analyse
Ev	-	Evaluate
Cr	-	Create
KC	-	Knowledge Category
Fa	-	Factual
Co	-	Conceptual
Pr	-	Procedural
Me	-	Meta Cognitive

Programme Outcomes (POs) of SSUS for PG Programmes

PO1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2. Communication: Listen, read, comprehend, speak and write clearly and effectively in person and through electronic media in English/regional language/language of the discipline and exhibit sound domain knowledge including academic concepts and terminologies.

PO3. Self-directed and Life-long Learning: Engage in independent and lifelong learning in the broadest context of socio-technological changes.

PO4. Ethics: Understand different value systems including one's own, as also the moral dimensions of actions, and accept responsibility for it.

General Structure of the MSc Programme

Duration	:	04 Semesters
Minimum credits required	:	66
Number of Core Courses	:	32 – 44 credits
Elective Courses within the Department	:	08 – 16 Credits
Multi-Disciplinary Electives	:	08 – 12 Credits
Dissertation	:	06 Credits

Programme Specific Outcomes (PSOs) of Department of Geography for MSc Geography

PSO1. Understand the major biophysical and social patterns in the world, and the key drivers that give rise to those patterns. (PO1)

PSO2. Demonstrate in-depth knowledge of theories, concepts, techniques and technologies in human and physical aspects of geography, as well as geographic information science and technology, through real-world practical applications at the local, regional, and global scales. (PO3)

PSO3. Apply systems thinking and critical thinking skills to analyze problems and potential solutions in socio-economic-ecological systems at the human-environment interface. (PO1)

PSO4. Practice obtaining, analyzing, and interpreting complex geographic data. (PO3)

PSO5. Practice effective communication of concepts and problems to both scientific and public audiences. (PO2)

PSO6. Work effectively in interdisciplinary and multicultural real-world contexts to combine theory and practice in responding to local to global issues for humans and non-humans. (PO4)

Proposed Division of 11 Core Courses based on PSOs

Theoretical Foundations – Modern Geographical Thought, Environmental Geography, Analytical Geomorphology, Urban Geography

Methodological Foundations - Introduction to Research in Geography, Introduction to Field Research in Geography

Contemporary Knowledge – Climatology and Climate Change, Contemporary Human Geography, Geographies of Disasters in Kerala

GI Technology and Tools - Geographic Information Systems, Remote Sensing

Proposed Semester Wise Distribution of Courses

Semester I – Core Courses

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGEM 11501	Modern Geographical Thought	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11502	Environmental Geography	4	Assignment, Field report Mid Sem Exam	End Sem Exam
PGEM 11503	Geographic Information Systems	4	Lab Assignments, Mid Sem Exam	End Sem Practical Exam

Semester I – Elective Courses (Any One)

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGEM 11513	Agricultural Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11514	Economic Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11515	Population Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11516	Medical Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11517	Political Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam

Semester II – Core Courses

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGES 11504	Analytical Geomorphology	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGES 11505	Introduction to Research in Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGES 11506	Remote Sensing	4	Lab Assignments, Mid Sem Exam	End Sem Practical Exam

Semester II – Elective Courses - Multi-disciplinary Elective

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGES 11518	Environment and Sustainability	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGES 11519	Application of GST in NRM	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGES 11520	Introduction to Maps and Map Reading	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGES 11521	Postcolonial Geographies	4	Assignment, Seminar Mid Sem Exam	End Sem Exam

Semester III – Core Courses

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGEM 11507	Contemporary Human Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11508	Urban Geography	4	Assignment, Seminar Mid Sem Exam	End Sem Exam
PGEM 11509	Introduction to Field Research in Geography	4	Fieldwork and Report	

Semester III – Elective Courses - Multi-disciplinary Elective

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGEM 11522	Geography of Tourism	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGEM 11523	Environment of Kerala	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGEM 11524	Ancient Geography of India	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam

Semester IV – Core Courses

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGES 11510	Geographies of Disasters in Kerala	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11511	Climatology and Climate Change	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11512	Dissertation	6	Report	Viva-voce

Semester IV – Elective Courses (Any One)

Course Code	Course Name	Credits	Internal Evaluation	External Evaluation
PGES 11525	Fluvial and Coastal Geomorphology	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11526	Hydrology and Water Resources	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11527	Decentralised Planning	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11528	Geographies of Development	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11529	Geography of World Economy	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11530	Political ecology	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam
PGES 11531	Social and Cultural Geography	4	Assignment, Seminar, Mid Sem Exam	End Sem Exam

Semester Wise Course Details

Course Outcomes, Content, Tagging and Reading list of Core and Elective Courses

Semester I

CORE COURSE: PGEM 11501 - MODERN GEOGRAPHICAL THOUGHT

Course Learning Outcomes:

- CO1. Understand historical evolution of the discipline geography
- CO2. Analyze the relationship between geographical thought and practice
- CO3. Analyze the relationship between geographical scholarship and larger socio-political processes
- CO4. Evaluate the intermingling of imperialism and geographical knowledge
- CO5. Understand one's own geographical perspective in relation to border historical discourses and concepts
- CO6. Demonstrate geographical issues from a Third World perspective
- CO7. Demonstrate the inclusive nature of 21st century geographical discourses

Course Content:

Module: 1

Geography – its place in the classification of disciplines; Basic concepts in the philosophy of geography; Essential characteristics of geographical work; Brief Disciplinary History; Early origins; Dualism in geographical thinking.

Module: 2

Kuhn's model of 'paradigms of science'; Darwin's influences in geographical knowledge; Imperialism and colonialism; Institutionalisation of geography; Environmental determinism and critics

Module: 3

Philosophical Influences of Modern Geographical Thought I: Anarchism – Elisee Reclus and Peter Kropotkin; Positivism – The quantitative revolution, Criticism of quantification; Humanism – Phenomenology and Existentialism, Yi-Fu Tuan ; Structuralism – the question of *social relevance*, Liberals and Radicals, Marxist and Feminist geography;

Module: 4

Post structuralism and Post colonialism - Subaltern geographies, more than human thinking; Alternative geographical traditions of global south. Geographies of sexuality and Queer approach. Decolonising geography

Module: 5: Geographical Thoughts in India; Institutionalisation Geography in India; Contribution and Schools; Postcolonial Geographies of India

CORE COURSE: PGEM 11501 - MODERN GEOGRAPHICAL THOUGHT

Faculty Member/s:

Credits: 4

CO	CO Statement	PO/ PSO	CL	KC	Class Sessions/ Tutorial Hrs	Lab/ Field Hrs.	Assessment
CO1	Understand historical evolution of the discipline geography	PO1, PSO2	Un	Co	10	00	Assignment on History of Geography
CO2	Analyze the relationship between geographical thought and practice	PO1, PSO3	An	Co	10	00	Assignment on different paradigms and major contributions
CO3	Analyze the relationship between geographical scholarship and larger socio-political processes	PO1, PSO2	An	Co	10	00	Tutorial – Reading article
CO4	Evaluate the intermingling of imperialism and geographical knowledge	PO1, PSO1	Ev	Co	10	00	Tutorial – Reading article
CO5	Understand one's own geographical perspective in relation to border historical discourses and concepts	PO4, PSO3	Ev	Co	12	00	Assignment to present particular geographical issue using two paradigms
CO6	Demonstrate geographical issues from a Third World perspective	PO1, PSO2	Ap	Co	10	00	Assignment on critical analysis of academic foundations of geography
CO7	Demonstrate the inclusive nature of 21st century geographical discourses	PO4, PSO6	An	Co	10	00	Literature survey of geographical research after the year 2000

Essential Readings:

Antony Orme. "The Cycle of Erosion" in John Agnew and David N. Livingstone. The SAGE Handbook of Geographical Knowledge, pp.465-491.

Barbara A. Kennedy. *Inventing the Earth: Ideas on Landscape Development Since 1740*. Blackwell, 2006,

Bassin, M.: Imperialism and the Nation State in Friedrich Ratzel's Political Geography, *Prog. Hum. Geog.*, 11, 473-495, 1987.

D.R. Stoddart, "Darwin's Impact on Geography," *Annals of the Association of American Geographers*, Vol. 56 (Dec., 1966): 683-698.

David Harvey, "On the history and present condition of geography: an historical materialist manifesto" in Harvey, *Spaces of Capital: Towards a Critical Geography* (New York: Routledge, 2001), pp 108-120 [1984].

David Harvey, "Owen Lattimore: a memoir" in Harvey, *Spaces of Capital: Towards a Critical Geography* (New York: Routledge, 2001), pp 90-107. [1983]

David Livingstone, *The Geographical Tradition*, pp.102-138.

David N Livingstone, "Environmental Determinism," in John Agnew and David N. Livingstone. The SAGE Handbook of Geographical Knowledge, pp.368-380.

Davis, William M. 1899. The Geographical Cycle. *Geographical Journal* 14: 481-504.

Doreen Massey, "In what sense a regional problem?" in J. Agnew, D. Livingstone and A. Rogers (eds) *Human Geography: an Essential Anthology* (Oxford: Blackwell, 1996), pp 398-413 [1979].

Ellen Churchill Semple, *Influence of Geographic Environment on the Basis of Ratzel's System of Anthro-geography*. New York: Russell and Russell, 1911. A reprint is available in *Human Geography: An Essential Anthology*. Edited by John Agnew, David N. Livingstone, and Alistair Rogers. Oxford: Blackwell. Pp. 252-267. An online e-reprint from Project Gutenberg can be found at <http://infomotions.com/etexts/gutenberg/dirs/1/5/2/9/15293/15293.htm>

Geographical Traditions: Rethinking the History of Geography. Transactions of the Institute of British Geographers, New Series, 20(4): 403-422.

Gillian Rose, "Feminism and Geography: An Introduction" and "Women and Everyday Spaces," in *Feminism and Geography: The Limits of Geographical Knowledge* (Minneapolis: University of Minnesota Press, 1993), 1-40.

John Agnew and David N. Livingstone. The SAGE Handbook of Geographical Knowledge, pp. 51-136, 149-184, 217-227.

Linda McDowell and Doreen Massey, "A Woman's Place?" pp 458-475 in J. Agnew, D. Livingstone and A. Rogers (eds) Human Geography: an Essential Anthology (Oxford: Blackwell, 1996), [1984]

Neil Roberts, "The Idea of Evolution in Geographic Thought", in John Agnew and David N. Livingstone. The SAGE Handbook of Geographical Knowledge, pp.441-451.

Nicolaas Ropke 'Alexander von Humboldt and Revolution', in Livingstone and Withers. Geography and Revolution, pp. 336-350.

Ravi S. Singh, "Indian Geography: Perspectives, Concerns and Issues", Rawat Pub 2009

Satish Kumar, Stuart Corbridge, "Colonial and Post-Colonial Geographies of India", SAGE Pub (2006)

Saraswati Raju (ed.), "Gendered Geographies: Space and Place in South Asia", Sage Pub, 2013

CORE COURSE: PGEM 11502 – ENVIRONMENTAL GEOGRAPHY

Course Learning Outcomes:

- CO1. Understand the environment from different perspectives*
- CO2. Examine the geographical explanations for biological diversity of the world*
- CO3. Develop an environment perceptive when approaching complex development issues.*
- CO4. Evaluate the vulnerability of ecosystem services*
- CO5. Demonstrate methodological procedure for conducting Environment Impact Assessment*
- CO6. Appreciate and recognize the complexity and value of ecosystem*

Course Content:

Module 1

Concept of Environment, Major elements, functioning of environmental systems, Biotic and Abiotic elements - Ecosystem: Structure, Function, Process and Energy flow- Bio Geo Chemical cycles- Trophic levels - Ecosystem stability.

Module 2

Different Approaches to Environmental Geography-Earth Science System-Land Science System- Ecological Approaches (Natural, Political and Urban)-Environment History-Landscape studies (Culture and Regional Studies)

Module 3

Linking People and Ecosystem, Major earth's ecosystems, Causes and types of ecosystem degradation, Managing Ecosystem health - Vulnerability, risk and resilience to Environmental Change- Biodiversity: Biodiversity uses, threats to biodiversity, biodiversity conservation.

Module 4

Global Environmental issues, Environmental programmes and policies – Global, National and Local levels, Environmental Laws in India- Environmental Impact assessment (EIA) - Environmental Management Planning (EMP) - Environmental Performance Assessment (EPA)

Faculty Member/s:

CO	Outcome Statement	PO/PSO	CL	KC	Class sessions (approx.) (Hrs)	Lab session/Field visits (Hrs)	Assessment
CO1	Understand the environment from different perspectives	PO1, PSO1	Un	Co	6	6	Tutorial assignment, and presentation
CO2	Examine the geographical explanations for biological diversity of the world	PO1, PSO1	Un	Co	6	0	Tutorials assignment and presentation
CO3	Develop an environment perceptive when approaching complex development issues.	PO3, PSO2	Un	Co	12	0	Book reviews, tutorials assignment and discussion
CO4	Evaluate the vulnerability of ecosystem services	PO3, PSO4	An	Co	8	6	Book review, assignment discussion, field visit and presentation
CO5	Demonstrate methodological procedure for conducting Environment Impact Assessment	PO3, PSO2	Cr	Co	10	4	Discussion, debates, field visit and presentation
CO6	Appreciate and recognize the value of biodiversity	PO3, PSO2	Cr	Co	8	6	Field visit and presentation

Essential Readings:

- Anderson J.M. (1981): Ecology for Environmental Science: Biosphere, Ecosystems and Man, Arnold, London.
- Balakrishnan, M., 1998. Environmental Problems and Prospects in India, in Das, R.C., et. al. Oxford & IBH Pub., New Delhi.
- Canter Chary, L. W. 1996: Environmental Impact Assessment, 2nd edition, McGraw Hill, New York
- Chichester: Marsh, W.M. and Grossa, J.M. (1996): Environmental Geography: Science, Landuse and Earth Systems, John Wiley & Sons.
- Das, M.C. 1993, Fundamentals of Ecology, Tata Mc Graw Hill, New Delhi.
- Farmer, A. 1997. Managing Environmental Pollution, Routledge, London
- Gilpin, A. 1996 : Dictionary of Environment and Sustainable Development, John Wiley and Sons Ltd.,
- Goudie, Andrew (1984) : The Nature of the Environment, Oxford Katerpring Co. Ltd.
- Huggett, R.J. 2002. Fundamentals of Biogeography, Routledge, London & New York.
- Maryk, Theodore .1996. Major Environmental Issues Facing 21st Century, Prentice Hall.
- Middleton N.1995 : The Global Casino: An .Introduction to Environmental Issues, John Wiley and Sons Inc., New York
- Nobel and Wright (1996) : Environmental Science, Prentice Hall, New York.
- Odum, E.P. (1971) : Fundamental of Ecology, W.B. Sanders, Philadelphia.
- Roberts, N. 1994.The Changing Global Environment, 3rd edition, Blackwell Pub. Co., London.
- Sharma, P.D. 1975. Ecology and Environment, Rastogi Publication, Meerut.
- Singh, R.B. (ed.) (1989) : Environmental Geography, Heritage, New Delhi.
- Singh, R.B. and Misra, S. 1996: Environmental Laws in .India: .Issues and Responses, Rawat Pub., New Delhi:
- Slaymaker, A. & Spencer T. 1998: Physical Geography & Global Environmental Change, Longman, UK.
- Speth, I.G.2005. Global Environmental Challenges – Transitions to a Sustainable World, Orient Longman, New Delhi
- Strahler, A.H. and Strahler A.N. (1977) : Geography and Mans Environment, JohnWiley, New York.
- Strahler, A.N. and Strahler, A.H. (1973) : Environmental Geosciences : Interaction between natural systems and Man, John Wiley and Sons, New York.
- William, M.M. and John, G. (1996) : Environmental Geography - Science, Landuse and Earth System, John Wiley and Sons, New York.

CORE COURSE: PGEM 11503 - GEOGRAPHICAL INFORMATION SYSTEMS

Course Learning Outcomes:

CO1: *Understand the history and development of spatial technology*

CO2: *Locate the significance of GIS in contemporary world*

CO3: *Explore and generate GIS data from open source*

CO4: *Analyse methodological aspects of GIS*

CO5: *Apply GIS in different real world situations*

Course Content:

Module-1

Spatial Information System : An overview, conceptual model of spatial information science; Evolution of GIS, Basic concepts, scope and approaches of GIS, Components of GIS; GIS-Application, Implementation and Management

Module - 2

Data generation – Fieldwork: GPS Survey, Total Station Survey; Spatial and Non-Spatial informations; Data generation – Lab work: Various online sources of topographical maps, cadastral maps etc; Sources of aerial photographs and satellite images;

Module - 3

Spatial referencing – Image rectification, image to image rectification, rubber sheeting; Database creation – Point, line, polygon, topology creation, network data set creation; Vectorization – point, line, polygon; Database Management – adding – editing – updating – deleting – topology rules apply and editing

Module - 4

Basic GIS analytical techniques – Clip – Select – Erase – Summary Statistics – Frequency Statistics
Advanced GIS analytical techniques – buffer- network analysis – dissolve – reclassification - interpolation – 3D analysis – grid preparation – density - web GIS

Module -5

GIS Application; Demographic aspects; Hydrology, Transport, Utility mapping and Disaster management

CORE COURSE: PGEM 11503 - GEOGRAPHICAL INFORMATION SYSTEMS

Faculty Member/s:

Credits : 4

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs	Assessment
CO1	Understand the history and development of spatial technology	PO1, PO6 PSO2	Un	Co	05	05	Assignment on basic concept of GIS
CO2	Locate the significance of GIS in contemporary world	PO2, PSO2	An	Pr	00	15	Lab oriented exercise for data generation
CO3	Explore and generate GIS data from open source	PO1,PO2 PO3 & PO6, PSO3	An	Pr	00	15	Lab oriented exercise on simple analytical tools
CO4	Analyse methodological aspects of GIS	PO1,PO2 PO3,PO6, PSO3	An	Pr	00	15	Lab oriented exercise on advanced analytical tools
CO5	Apply GIS in different real world situations	PO1,PO2, PO3 & PO6 PSO4	Ap	Pr	00	15	Lab and filed oriented exercise on weighted overlay analysis and Survey Techniques

Essential Readings:

Abdul-Rahman, Alias, Pilouk, and Morakot (2008), Spatial Data Modelling for 3D GIS,

Chang, K, Introduction to Geographic Information Systems. (5th Ed.), McGraw Hill.

HananSamet (2006), Foundations of Multidimensional and Metric Data Structures, Morgan Kaufmann Publishers.

Okabe, A., Boots, B., Sugihara, K. and Chiu, S. N (2000) Spatial Tesselations – Concepts and Applications of Voronoi Diagrams (2ndEd.), John Wiley and Sons.

Paul A. Longley, Michael F. Goodchild, David J. Maguire, David W. Rhind, Geographic Information Systems and Science, John Wiley & Sons Ltd.

Peter A. Burrough, Rachael A. McDonnell and Christopher D. Lloyd (2014), Principles of Geographical Information Systems, International Third Edition, Oxford University Press, United Kingdom,

Raper, J (2000), Multi Dimensional Geographic Information Science, Taylor and Francis.

Springer.

Worboys and Duckham (2004), GIS: A Computational Perspective, CRC Press,

ELECTIVE COURSE: PGEM 11513 - AGRICULTURAL GEOGRAPHY

Course Learning Outcomes:

- CO1. *Understand the spatial distribution of agricultural phenomena.*
- CO2. *Analysing the agricultural practice and cultural development.*
- CO3. *Evaluate the inter relationship between geographical knowledge and agricultural practice in everyday living.*
- CO4. *Evaluate the effects of agricultural policy measures in regional disparities.*
- CO5. *Demonstrate the ability of analysing agricultural problems in their own perspective.*
- CO6. *Demonstration of appreciation for the contribution of agricultural sector in the economic development.*

Course Content:

Module: I Introduction to Agricultural geography

Origin and dispersal of agriculture; Theories of agriculture evolution; Nature, Scope and Development of Agricultural Geography; Approaches to the study of Agricultural Geography, Major agricultural hearths; Diffusion of agricultural innovations; Determinants of Agriculture ; Physical, Socio-economic, technological and institutional; Agriculture typology.

Module: II Models and Theories in Agricultural geography

Agricultural location theory by Von Thunen; Agriculture land use theory by L. D Stamp, G. Baker; Agricultural transformation and development by Schultz and Mellor; Agriculture and regional development by Boserup, Lewis and Fenin – Ranis Model; Agriculture sustainability and sustainable agriculture models.

Module: III Land Use Survey and Quantitative Techniques

Agricultural land use survey: History, Survey Techniques; Proximate sensing and Remote sensing, Land capability Classification (USDA); Crop Combination Methods :Doi, Weaver, Rafiulla and Bhatia, Agricultural Regionalisation: World Agricultural Regions of D. Whittlesey, ; Land Suitability and Crop suitability Analysis; Measures of Farm efficiency; Farm conservation and Planning.

Module: IV Contemporary issues with special reference to Indian Agriculture

Agriculture performance and Indian economy; Agricultural Planning regions of India; Agriculture Regionalization in India; Agro- Climatic Regions. Agriculture Development and Regional disparities in India; Land reforms in India; Agricultural Policies in the Post liberalization period; Food security Scenario in India; Issues in Indian Agriculture; Agriculture and climate change – Mitigation and Adaptation.

Faculty Members/S

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hs	Lab /Field Hrs	Assessment
CO1	Develop a better understanding of the reasons affecting spatial distribution of agricultural phenomena.	PO1, PSO2	Un	Co	12	00	Tutorials Assignments
CO2	Analysing agricultural practice and cultural development.	PO1, PSO3	An	Co	12	00	Tutorial and reading article
CO3	Evaluate the inter relationship between geographical knowledge and agricultural practice in everyday living.	PO4, PSO3	Ap	Co	00	14	Field Visit and presentation
CO4	Evaluate the effects of agricultural policy measures in regional disparities.	PO1, PSO2	Ev	Co	10	00	Tutorial and Reading articles
CO5	Demonstrate the ability of analysing agricultural problems in their own perspective.	PO4, PSO3	Ap	Co	12	00	Seminars and Presentation
CO6	Demonstration of appreciation for the contribution of agricultural sector in the economic development.		An	Co	12	00	Tutorial and reading article

Essential Readings:

- Ali Mohammed - Situation of Agriculture, Food and Nutrition in action Rural India, Concept Publishing, Delhi.
- Bhalla, G.S. and Alagh, Y.K. (1979) Performance of India, agriculture: a district-wise study, sterling, New Delhi.
- Duckhan, A.N. and Masfield, G.B., Farming Systems of the World, London, 1970.
- Gobind, N. (1986) Regional perspective in agriculture, concept, New Delhi.
- KAU .1989. NARP Status Report Central Zone Vol. I Directorate of Extension, Kerala Agricultural University, Thrissur .p 53-60 2.
- KAU 2007. Package of Practices, Directorate of Extension Kerala Agricultural University Thrissur.
- Leena Kumary. S .2004. Genetic Improvement of rice varieties in Kerala. In Sharma S. D and U. Prasada Rao (eds) Genetic Improvement of rice varieties of India . Today and Tomorrow Publishers, New Delhi. P. 689-741 4.
- Leena Kumary. S. 2007. Biodiversity of rice in Kerala. In Paddy cultivation in Kerala (Ed) Dr. A.E. Muthunayagam and Published by Kerala State Council for Science Technology and Environment p.33-45.
- Mohammad, A., Food Production and Food Problem in India, New Delhi.
- Mohammad, N., Perspectives in Agricultural Geography, New Delhi.
- Morgan, W.B. and Munton, P.J.C. Agricultural Geography, London, 1971.
- Negi. B.S. (2003) Indian Agriculture: problems, Progress & Prospects, Vikas publishing house Pvt. Ltd. S. Ansari Road, Daryagani, New -Delhi-2.
- Noor Mohammed - Agriculture Land Use in India, Inter-India Publication, Delhi.
- Sachchidananda- Social Dimensions of Agricultural Development, National Publishing House, Delhi.
- Shafi, M., Agricultural Geography of South Asia, Macmillon, New Delhi 2000.
- Shafi, M., Agricultural Geography, Dorling Kindersley, New Delhi, 2006.
- Singh, J. and Dhillon, S.S., Agricultural Geography, 1970.
- Singh, R.L. (ed.)- Applied Geography, B.H.U. Press, Varanasi.

ELECTIVE COURSE: PGEM 11514 – ECONOMIC GEOGRAPHY

Course learning outcomes:

- CO1.** *Analyse how the economy is organised within the power space relation.*
- CO2.** *Understand the key drivers of economic change*
- CO3.** *Evaluate critically how different theories and models are applicable in the economic development of different regions.*
- CO4.** *Demonstrate the interdependence of different sectors of economy.*
- CO5.** *Evaluate the process of global shift and identities in the capitalist economy.*
- CO6.** *Analyse how the changing political powers and policies achieving regional identities.*

Course Content:

Module: I Introduction to Economic Geography

Definition, Nature, scope and recent trends; Fundamentals of Economic Geography; Approaches to the study of Economic Geography; Basis of economic processes- Production, exchange and consumption. Classification of economic activities; factors of localization of economic activity.

Module: II Industrial Geography

Classification of industries, Importance of manufacturing ; Principles of Industrial Location Profit maximization, Least cost location, Substitution ,Interdependence, Territorial production complexes; Factors of Industrial Location, Industrial Location Theories– Weber Hoover, Losch and Rostows model: Industrial Regions of the World and India; Industrial decentralization and Industrial Policies.

Module: III Transports and Commerce

Mode of transportation and transport cost; accessibility and connectivity, topology of market, network in rural society, market system in urban economy, role of market in the development of trade and commerce .Significance of Trade in National and International Economy – WTO, TRIPS, TRIMS, ASEAN, Concept of EPZs & SEZs.

Module: IV Technological changes

Commodity chain approach, the universalization of technology, the space shrinking technologies, product and process technologies, knowledge economy, creative classes, the uneven geography of technology creation.

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hrs	Lab / Field Hrs
CO1	Analyze how the economy is organised within the power space relation.	PO1, PSO1	An	Co	12	00
CO2	Understand the key drivers of economic change.	PO1, PSO2	Un	Co	12	00
CO3	Evaluate critically how different theories and models are applicable in the economic development of different regions.	PO4, PSO6	An	Co	12	00
CO4	Demonstrate the interdependence of different sectors of economy.	PO1, PSO2	An	Co	14	00
CO5	Evaluate the process of global shift and identities in the capitalist economy.	PO1, PSO1	Ev	Co	10	00
CO6	Analyze how the changing political powers and policies achieving regional identities.	PO4, PSO6	An	Co	12	00

Essential Readings

- Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.
- Berry, B.J.L. et al. (1976) : Geography and Economic Systems, Prentice Hall, Englewood Cliff.
- Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- Gautam, A. 2010. Advanced Economic Geography. Sharda Pustak Bhawan, Allhabad.
- Hodder B. W. and Lee R., 1974: Economic Geography, Taylor and Francis.
- Hudson, R. 2005. Economic Geography. Sage Publication, New Delhi.
- Jones & Darkenwald (1960) : Economic Geography, New York
- Knowled, R. and Wareing, J. 1992. Economic and Social Geography. Rupa and Company, Calcutta.
- Knox, P. 2003. The Geography of World Economy. Arnold, London.
- Naresh Kumar (1991) Geography of Transportation, Concept Publications.
- Rostov, W.W. (1960): The Stages of Economic Growth, Cambridge Univ. Press, London.
- Saxena, H.M. 2013. Economic Geography. Rawat Publications, Jaipur.
- Sharma T.C. and Countinho. O (1998) – Economic and Commercial Geography of India, Vikas Publishing house, Delhi.
- Wheeler, J.O. et.al. (1995): Economic Geography, John Wiley, New York.
- Willington D. E., 2008: Economic Geography, Husband Press.
- World Bank (2009): World Development Report, Washington D.C.

ELECTIVE COURSE: PGEM 11515 - POPULATION GEOGRAPHY

Course Learning Outcomes:

- CO1. *Analyse the scale, issues and nature of relationship between humans and environment on different geographical levels.*
- CO2. *Evaluate constraints to population development and mobility.*
- CO3. *Demonstrate knowledge and critical understanding of the key population indicators and concepts.*
- CO4. *Demonstrate capabilities for effective communication of population information and relevant arguments to the society.*
- CO5. *Evaluate theories of human migration to explain historical and current patterns.*
- CO6. *Assessing the linkages existing between various demographic parameters to explain the current population problems at the regional level.*

Course Content:

Module: I Population in the geographical context

Population in relation to environment, economy and society; Approaches in Population Geography; Population and education, health, and reproduction; Challenges for developing and developed nations. Population density variations, rural and urban dimensions. Challenges for developed and developing countries.

Module: II Population theories

Theories of growth- Malthusian, Ricardo, Marx, Demographic transition theory. Theories of migration-Ravenstein and Lee's.

Module: III Population problems of India

Population and environment, Population growth in India; Demographic dividend or disaster: Population and social issues; Declining sex ratio, gender issues, ageing, crime against women, human trafficking, refugees and asylum; Population and vulnerability; displacement, Diaspora and identity crisis.

Module: IV Population profile of Kerala

Education and occupational structure; Links to Migration- in and out migration, impacts on environment and economy; Population growth and problems relating to ageing and density.

Faculty Member/s:

CO	CO Statement	PO / PSO	CL	KC	Class Sessions/ Tutorial Hrs	Lab /Field Hrs	Assessment
CO1	Analyse the scale, issues and nature of relationship between humans and environment on different geographical levels.	PO1, PSO3	An	Co	12	00	Tutorial and Article reading
CO2	Evaluate constrains to population development and mobility.	PO1, PSO3	Ev	Co	12	00	Assignments on population development
CO3	Demonstrate knowledge and critical understanding of the key population indicators and concepts.	PO1, PO6	Ap	Fa	12	00	Debates, Presentation
CO4	Demonstrate capabilities for effective communication of population information and relevant arguments to the society.	PO3, PO5	Ap	Pr	12	00	Assignments on population development, Presentation
CO5	Evaluate theories of human migration to explain historical and current patterns.	PO1, PSO1	An	Co	12	00	Tutorial and Article reading
CO6	Assessing the linkages existing between various demographic parameters to explain the current population problems at the regional level.	PO1, PSO3	Ap	Co	12	00	Tutorial and Seminars

Essential readings

- Beaujeu, Garnier, J. (1966): Geography of Population, Longman, London
- Bogue, D.J. (1969): Principles in Demography, John Wiley, New York.
- Bose, A. et al. (1974): Population in India's Development (1947-2000), Vikas Publication House, New Delhi.
- Chandna, R .C. (2000): Geography of Population, Kalyani Publ., New Delhi. 22
- Clarke, J.I. (1972): Population Geography, Pergamon Press, Oxford
- Clarke, John I. (1973): Population Geography, Pergamon Press, Oxford.
- Crook, Nigel (1997): Principal of Population and Development, Pergamon Press, New York.
- Garnier, B. J. (1970: Geography of Population, Longman, London.
- Ghosh, S. (1998): Settlement Geography, Orient Longman Ltd. , Kolkata
- Jones, H.R., (2000): Population Geography, Paul Chapman, London
- Mamoria, C.B. (1981): India's Population Problems, KitabMahal, New Delhi.
- Mitra, Ashok (1978): India's Population Problems and Control (Vol. I & II), KitabMahal, New Delhi.
- Srinivasan, K. and Vlassoff, M. (2001): Population and Development Nexus in India, Challenges for the new Millennium, Tata McGraw Hill, New Delhi.
- Sundaram K. V and Nangia, Sudesh (eds.) (1986): Population Geography, Heritage, New Delhi.
- Trewartha, G.T. (1969): A Geography of Population: World Patterns, John Wiley, New York.
- Wood, R. (1979): Population Analysis in Geography, Longman, London.
- Zacharia, E. and Sinha, V.C. (1986): Elements of Demography, Allied Publishers Pvt. Ltd., New Delhi
- Zelinsky .W. (1966): A prologue to population Geography, Prentice Hall India, New Delhi.

ELECTIVE COURSE: PGEM 11516 - MEDICAL GEOGRAPHY

Course Learning Outcomes:

- CO1.** Understand health issues in its spatial context
- CO2.** Extrapolate influence of place and location on human health
- CO3.** Analyze spatial patterns of disease and health care provisions
- CO4.** Apply geographical concepts and techniques to health related problems
- CO5.** Apply geographical knowledge to health policy advocacy specifically to third world diseases
- CO6.** Assess/Evaluate methods applied to infer causal relationships between spatial variability in environment and health outcomes

Course content:

Unit-1: Introduction to medical and health geography- Epidemiology and social determinants in medical and health geography – Different geographical approaches (ecological, spatial and social approaches) in understanding health and health care – Historical approach (early classical studies) to geography of health and illness.

Unit-2: Geographical factors –(physical and social factors)determining ill-health- influence of relief, soil, water and air pollution affecting health-Environmental exposure and health (climate and weather).Differences in health status and service delivery across rural and urban areas and spread of diseases.

Unit-3: Links between Medical geography and demographic trends, environmental factors, institutional and social change, and health policy in India. Biological factors affecting health- Ecology and diseases- social context (social inequalities) and diseases- waterborne diseases- food borne diseases- vector borne diseases-communicable diseases - disease diffusion - Health care in Kerala: deficiencies & problems(emphasis on marginalized communities).

Unit-4: Health indicators and health data– Identifying mappable health data (geocoding methods) - Mapping physical and social determinants of ill-health - GIS techniques in disease mapping and health care systems– Spatial analysis.

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO1	Understand health issues in its spatial context	PO1 PSO1	Re Un	Co	10	00	Assignment: Book reviews, health reports etc.
CO2	Extrapolate influence of place and location on human health	PO1 PO3 PSO2	Un Ap	Fa Co	07	03	Assignment: Book Review, Mapping and Tutorial
CO3	Analyze spatial patterns of disease and health care provisions	PO1 PO3 PSO2 PSO4	Ap An Ev	Fa Co	07	03	Assignment: Collection of Secondary Data and using statistical analysis
CO4	Apply geographical concepts and techniques to health related problems	PO1 PO2 PSO3 PSO5	Un An Ev	Co Pr	06	06	Assignment: Report preparation
CO5	Apply geographical knowledge to health policy advocacy specifically to third world diseases	PO1 PO3 PSO1 PSO2 PSO4	Un, An & Ev	Fa Co	07	03	Assignment: Policy briefing
CO6	Assess/Evaluate methods applied to infer causal relationships between spatial variability in environment and health outcomes	PO2 PO3 PO4 PSO4 PSO5 PSO6	An, Ev Cr	Co	05	05	Assignment: Report writing and presentation

Essential Readings:

- Aikat, B.K. (1985) Tropical diseases in India, Arnold Meinemann, Delhi, 1st Edition
- Akhtar Rais (1990), Environmental population and health problems, Ashish Publishers Home, New Delhi.
- Ansari, S.H. (2005), "Spatial Organization of health care facilities in Haryana" NGJI, Vol 51, PP 3-4, 51- 61.
- Chakrabarti, N., (1954), "Some factors influencing the mortality of cholera. Calcutta," Medical Journal, Vol. 51.
- Determinants of Health: A New Synthesis. John Frank. Current Issues in Public Health, 1:233-240, 1995
- Egles, J. and Woods, K.J. (1983) The Social Geography of Medicine and Health, Groom Helm London, 1st Edition
- K. Chaubey, "Epidemic of HIV/AIDS in India: A Study in Medical Geography. "Annals of NAGI, Vol. XXV No.1, 2005 pp 28-33.
- Learmonth, A.T.A. (1985) Diseases in India, Concept Pub. Company, New Delhi, 1st Edition
- Misra, R.P., (2007), Geography of Health, Concept Publishing Company, New Delhi, 2007.
- Robert G. Evans, Morris Barer, and Theodore Marmor. (1994). "Why are Some People Healthy and Others Not? The Determinants of the Health of Populations". Aldine Transaction, USA.
- Shafi, M. (1967), "Food Production, efficiency and Nutrition in India." The Geographer, Vol. pp. 23-27.
- Siddiqui, M.F. (1971), "Concentration of Deficiency Diseases in Uttar Pradesh. The Geographer, Vol. 18 pp 90-98.
- Singhai, G.C. (2006), Medical Geography, Vasundhra Publication, Gorakhpur, 2006.
- Wilkinson R G. (1996). "Unhealthy Societies: The Afflictions of Inequality", Routledge, London.

ELECTIVE COURSE: PGEM 11517 - Political Geography

Course Learning Outcomes

CO1. Understand broadly the concepts in political geography and in detail concepts of geopolitics

CO2. Understand how the geographical factors contributed for the developments of world major power blocs and shaping the political history.

CO2 Evaluate the characteristics territorial bases of the state with respect of its neighborhood

CO3. Analyze geographical factors determine the election results and the formation of constituencies as well as the major characteristics of politico electoral regions of India

CO4: Demonstrate the relevance of geographical peculiarities determining India as a territory (Political unit)

Course Content:

Unit 1: Definition, scope and nature of Political Geography; Political Geography as the Politics of Place Recent trends in Political Geography; Theoretical contributions to political geography: Ratzel, Hartshorne, Taylor and Harvey

Unit 2: Concept of nation and state; geopolitics; politics of world resources; Geo-strategic views: Mahan, Mackinder, Spikeman, Geopolitical World Orders; Formation of Frontiers and Boundaries, Border Lands, Buffer States and Land-Locked State. Political Geography of Ocean: Maritime Boundaries, delimitations: principles and problems, International law of the sea. Mahan's Sea Power concept

Unit 3: Electoral Geography: methods of studying electoral geography, Geographical influence in voting. Geography of Electoral support and Representation: Constituencies and their evolution,. Case Studies of Indian Elections. Reading the emerging politico electoral regions of India.

Unit 4: Geographical Factors in India's Political Spectrum.; Role of terrain, Rivers and sea coasts in shaping political history; Geography of internal conflicts and problems of Nation Building: Religious and linguistics conflicts, separatist movements, river water disputes. The International Boundary of India and related issues. India's political alliance.

Faculty Member/s:

CO	Course Outcome	PO/PSO	CL	KC	Class sessions (approx.) (Hrs)	Lab session/ Field visits (Hrs)	Assessment task
CO1	Understand the broadly the concepts in political geography and in detail the concepts of geopolitics	PO1, PSO1	Un	Co	15	00	Tutorial assignment, discussion
CO2	Understand how the geographical factors contributed for the developments of world major power blocs and shaping the political history.	PO3, PSO2	An	Co	12	00	Reading, tutorial assignment, discussion and debates
CO3	Evaluate the characteristics territorial bases of the state with respect of its neighbourhood	PO3, PSO4,	Ev	Pr	15	00	Reading Tutorial assignment, discussion and Q&A
CO4	Analyse geographical factors determine the election results and the formation of constituencies as well as the major characteristics of politico electoral regions of India	PO3,PS O4	Un	Pr	15	00	Discussion and debates, presentations
CO5	Demonstrate the relevance of geographical peculiarities determining India as a territory (Political unit)	PO2 PSO5	An	Pr	15	00	Discussion and presentation

Essential Readings:

- Adhikari, S. 1997. Political Geography, Rawat publications, Jaipur and Delhi
- Agnew, J. 2002. Making Political Geography, Arnold, London
- Agnew, J., Mitchell, K. and Toal, G. eds. 2003. A Companion to Political Geography, Blackwell, Oxford
- Cohen, S. .1964. Geography and Politics in a World Divided, Random House, New York
- Cox, K.R., .2002. Political Geography: Territory, State and Society, Wiley-Blackwell, Chichester
- Cox, K.R., Low, M. and Robinson, J. 2008. The SAGE Handbook of Political Geography, SAGE Publications Ltd., London
- Deshpande, C.D., 1992 : India: A Regional Interpretation, I.C.S.S.R, New Delhi
- Dikshit, R.D. 1987. Political Geography and Geopolitics, Tata McGraw Hill, New Delhi
- Dikshit, R.D. 2000. Political Geography: A Contemporary Perspective, Prentice-Hall, New Delhi
- Gallagher, C., Dahlman, C.T., Gilmartin, M., Mountz, A. and Shirlow, P. (2009): Key Concepts in Human Geography: Key Concepts in Political Geography, SAGE Publications Ltd., London
- Glassner, M., .1993. Political Geography, John Wiley & Sons, New York
- Jones, M., .2004. An Introduction to Political Geography: Space, Place and Politics, Routledge, London
- Mathur, H.M. and Cernea, M.M. (eds.) .1995. Development, Displacement and Resettlement - Focus on Asian Experience, Vikas Publishing House Ltd., New Delhi
- Painter, J. and Jeffrey, A. 2009. Political Geography, SAGE Publications Ltd., London
- Painter, Joe (1995) Politics, Geography and 'Political Geography': A Critical Perspective. London: Arnold
- Pannikar, K.N. 1955. Geographical Factors in India's History, Bharatiya Vidya Bhavan, Bombay.
- Prescott, J.R.V. 1972. The Political Geography, Methuen, London
- Taylor, P. and Flint, C. 2000. Political Geography, Pearson Education, Harlow, Essex
- Weiner M and J Osgoodfield (eds.), 1975. Electoral Politics in the Indian States, Centre for International Studies, MIT

SEMESTER II

CORE COURSE: PGES 11504 - ANALYTICAL GEOMORPHOLOGY

Course Learning Outcomes:

- CO1.** *Demonstrate knowledge of the historical evolution and concepts of geomorphology.*
- CO2.** *Analyse the significance of spatial and temporal scales in geomorphology.*
- CO3.** *Analyse critically the theories and models in the real world with different perspectives.*
- CO4.** *Analyse human interventions and effects in geomorphologic processes.*
- CO5.** *Apply conceptual and theoretical measures to analyse geomorphic processes.*
- CO6.** *Apply basic techniques from global to regional level to identify different landforms.*

Course Content:

Module: I Conceptual Geomorphology

History and development of modern geomorphology; Recent trends in geomorphology; methods and approaches of Landforms study; Principle of Uniformitarianism and Catastrophism; Fundamental concepts in Geomorphology; Theories of Landform development by G.K Gilbert, W.M Davis, W.Penk, J.T Hack and L.C King.

Module: II Applied Geomorphology

Concept and Evolution of Applied Geomorphology; Anthropogenic Geomorphology - Humans as Geomorphic Agents and slope modifications; Factors, vulnerability, consequences and management of earthquakes, tsunamis and landslides; Methods and uses of Rainwater Harvesting and check dams; Effects of sea level change on Coast and Estuarine geomorphology.

Module: III Regional Geomorphology of Kerala

Geologic structure and physiographic regions; Drainage patterns; Characteristics of fluvial and coastal processes and resulting landscape of Kerala; River channel management and restoration; Anthropogenic activities and increasing vulnerability to Geomorphic Hazards.

Module: IV Field and Lab Work

Identification of different landforms using geospatial tools; Identification and mapping of fluvial landforms of the Periyar river basin along with critical evaluation of anthropogenic activities on the flood plain.

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hs	Lab /Field Hrs	Assessment
CO1	Demonstrate knowledge of the historical evolution and concepts of geomorphology.	PO1, PSO2	An	Co	12	00	Tutorial and Article reading
CO2	Analyse the significance of spatial and temporal scales in geomorphology.	PO1, PSO2	An	Co	12	00	Literature survey of geomorphology
CO3	Analyse critically the theories and models in the real world with different perspectives.	PO1, PSO3	Ap	Pr	12	00	Debates on different theories of Geomorphology
CO4	Analyse human interventions and effects in geomorphologic processes.	PO1, PSO1	Ev	Co	06	07	Tutorial and filed work
CO5	Apply conceptual and theoretical measures to analyse geomorphic processes.	PO3, PSO2	An	Co	10	00	Tutorial and Article reading
CO6	Apply basic techniques from global to regional level to identify different landforms	PO4, PSO3	Ap	Pr	06	07	Assignments on different land forms and their distribution characteristics

Essential Readings

- Anhert, F., (1996), 'Introduction to Geomorphology', Arnold, London, Sydney, Auckland.
- Bloom, A. L. (2002), 'Geomorphology: A Systematic Analysis of Late Cenozoic Landforms', Pearson Education Pvt. Ltd., and Singapore.
- Chattopadhyay, S. 2017. Geomorphological Field Guide Book on Laterites and Backwaters of Kerala (Edited by AmalKar). Indian Institute of Geomorphologists, Allahabad.
- Chorley R. J, Schumm, S.A. and Sugden D.E. (1984): Geomorphology, Methuen, London.
- Cooke, R. U. and Doornkamp, J.C., (1974). Geomorphology in Environmental
- Douglas, J. and Spencer, I. (1985): Environmental Change and Tropical Geomorphology, George Allen and Unwin, London.
- Garner, H.F. (1974): Origin of Landscapes A synthesis in Geomorphology, Oxford University Press, New Delhi.
- Hart, M.G. (1986): Geomorphology: Pure and Applied, George Allen and Unwin, London.
- John R.hails., 1977. "Applied Geomorphology" Elsevier Scientific publishing Company, New York.
- Nair, K. K.(2007) Quaternary geology and geomorphology of coastal plains of Kerala, Geological Survey of India.
- Prasannakumar,V.(2007) Geomorphology International Centre for Kerala Studies, University of Kerala.
- Sharma, H. S. (ed.) (1991): Indian Geomorphology, Concept, New Delhi.
- Spark B.W. (1972) Geomorphology, Longman, New York.
- Strahler A.H. and Strahler, A.N. (1998) Introducing Physical Geography, John Wiley and Sons, Inc. New York.
- Thornbury, W.D. (1960) Principles of Geomorphology", John Wiley and Sons, New York.

CORE COURSE: PGES 11505 - INTRODUCTION TO RESEARCH IN GEOGRAPHY

Course Learning Outcomes

- C01. Identify researchable area/topic in geography*
- C02. Develop a research proposal*
- C03. Execute different methods of data collection and analysis*
- C04. Communicate research findings through appropriate mediums*
- C05. Connect real world with theory and methods*

Course Content:

Module: 1

Meaning of academic research - Dimensions of Research in Geography – Research methodology and methods – Theory and methodology – Politics and Ethics of research

Module: 2

Research Design – Selection of topic – Review of literature - Theoretical frame/Conceptual frame – Formulation of hypothesis/research questions – Sources of data; Primary and Secondary- Research Methods

Module: 3

Geographical Data collection: Foundations of Quantitative Methods – Questionnaires and Surveys, Population and sampling - Research methods for Physical Landscapes – climate – vegetation - Human-Environment Field Studies

Module: 4

Geographical Data collection: Foundations of Qualitative Methods – Interviews, Focus groups, Ethnography and Participant Observation, Case Study, Discourse analysis - Participatory research. Reading landscape and Iconography

Module: 5

Representation and Analysis of Data: Maps and diagrams – Descriptive statistics – Explanatory Statistics – Regional analysis – Modeling – GIS - Analysing meaning of the texts.

Module: 6

Organization and writing of thesis/dissertation: Academic writing — organization of chapters – Bibliography- Types of References

CORE COURSE: PGEM 11505 – INTRODUCTION TO RESEARCH IN GEOGRAPHY**Faculty Member/s:****Credits: 4**

CO	CO Statement	PO/ PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO1	Identify researchable area/topic in geography	PO1, PSO3	Un	Co	10	00	Assignment on Development of research topics and questions
CO2	Develop a research proposal	PO1, PSO3	An	Co	10	00	Assignment on components of a research proposal
CO3	Execute different methods of data collection and analysis	PO3, PSO4	An	Co	10	00	Experiential learning – Different methods within campus
CO4	Communicate research findings through appropriate mediums	PO2, PSO5	Cr	Pr	10	00	Presentations
CO5	Connect real world with theory and methods	PO4, PSO6	Ev	Pr	12	00	Write and submit a full-fledged research proposal

Essential Readings

- Arnold, Cloke , P. , Cook , I. , Crang , P. , Goodwin , M. , Painter , J. , and Philo , C. (2004)
Practising Human Geography . London : Sage
- Aslam Mohammed. Sttatical Methods in Geographical Studies
- Bennett , K. , and Shurmer - Smith , P. (2001) Writing conversation . In *Qualitative Methodologies for Geographers* , Limb , M. and Dwyer , C. eds. London:
- Cliford N and Valantine G. Key method in Geography
- Ebdon David (1989): Statistical for Geographers
- Ebdon, D. (1985) *Statistics in Geography* . Oxford: Blackwell.
- Gatrell, J. D. ,Bierly , G. D. , and Jensen, R. R. (2005). *Research Design and Proposal Writing in Spatial Science* . Berlin: Springer .
- George Joseph (2003): Fundamental of Remote Sensing, Universities Press, Hyderabad.
- Het, I. Qualitative methods in Human Geography
- Kanetkar T. P. & Kulkarni S.V. 1986. Surveying & leveling, Pune Vidyarthi Griha Prakshan, Pune
- KarlekarShrikant and Kale Mohan (2005): Statistical analysis of Geographical data, Diamond publication
- Kenle, P 2011. Study skills for Geography, Earth and Environmental Students by Hodder Education
- Kim England. Getting personal column reflexivity positionality and Feminist Research
- King, (1975): Statistical Geography
- Maling .H. (1973) :Co ordinates systems and map projections, George Philip, London.
- Manly , B. J. (1992) *The Design and Analysis of Research Studies* . Cambridge: Cambridge University Press .
- Maslov A. V.Gordeev A. V. Batrakov Yu. G. (1984) : Geodetic surveying, Mir Publishers, Moscow
- Norcliffe G. B. (1977): Inferential statistics for Geographers (Hutchinson, London)
- P. A. Burrough and R.A. McDonnell, Principle of Geographical Information System, 2000, Oxford University Press.
- Patten, M. L. (2007) *Understanding Research Methods: An Overview of Essentials* (6th edn). Glendale,CA : Pyrczak Publishing
- Richardus P., Adler Ron K (1972) : Map projections, North Holland publ. Co. Amsterdam
- Ripley . B. D. (2004) *Spatial Statistics* . Hoboken, NJ : Wiley .
- Rogerson P. A. (2001): Statistics for Geography (SAGE pub., London, New Delhi}
- Shaw G and Wheller D. (1985): Statistical techniques in geographical analysis. John Wiley and sons, New- York
- Singh & Kanauja : Map work and Practical Geography.
- Sumner G J (1978): Mathematics for physical geographers. Edward Arnols
- V. Natarajan P., Adler Ron K:. Advanced Surveying, B. 1 Publ. Bombay
- Webster , R. , and Oliver , M. A. (2001) *Geostatistics for Environmental Scientists* . New York : Wiley

CORE COURSE: PGES 11506 - REMOTE SENSING

Course Learning Outcomes

CO1: *Understand the history and evolution of Remote Sensing*

CO2: *Identify and use various sources of satellite imageries from web platforms*

CO3: *Illustrate the features of remote sensing data*

CO4: *Carry out image processing using different software*

CO5: *Analyse spatial data from imageries*

CO6: *Analyse the temporal changes from imageries and prepare various thematic maps*

Course Content:

Module-1

Remote sensing; evolution and scope, Types; EMR and remote sensing; Types of resolution; Introduction to major software packages; Advantages and disadvantages of remote sensing

Module -2

Aerial remote sensing - Aerial photo interpretation – methods of stereoscope viewing – Orientation of aerial photographs –determination of photo scale – determination of height from aerial photos - interpretation of stereo pair

Module-3

Satellite remote sensing – Data sources identification and generation; Satellite image interpretation; Interpretation keys.

Module-4

Satellite remote sensing data processing; FCC generation – image enhancement – high pass filter – low pass filter – edge detection; resolution merge; spectral graph; subset image; image classification – AOI – supervised classification – unsupervised classification – ground truth verification – accuracy assessment; band ratios – NDVI – NDBI – SAVI; LST calculation; FRAGSTAT; aerosol calculation – lineament extraction.

Module-5

Remote Sensing Application-Hydrology-Urban studies-Wildlife ecology –Agriculture-Soil-Change Detection analysis-Transportation

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs.	Assessment
CO1	Understand the history and evolution of Remote Sensing	PO3 & PSO1	Un	Co	10	0	Assignment on history of remote sensing
CO2	Identify and use various sources of satellite imageries from web platforms	PO3 & PSO4	Ap	Pr	2	8	Lab oriented assignments on downloading imageries
CO3	Illustrate the features of remote sensing data	PO1 & PSO1	An	Pr	2	8	Lab oriented assignments of extracting features
CO4	Carry out image processing using different software	PO3 & PSO4	Ap	Pr	0	10	Lab oriented assignments of analysis tools
CO5	Analyse spatial data from imageries	PO1, PO2, PO6 & PSO3	An	Pr	0	20	Lab oriented assignments of remote sensing data based application
CO6	Analyse the temporal changes from imageries and prepare various thematic maps	PO2 & PSO3	An	Pr	0	10	Field based project on land use / land cover changes

Essential Readings:

Bossler J.D (2002), Manual of Geospatial Science and Technology, Taylor and Francis, London.

Girard M.C and Girard C.M (2003), Processing of Remote Sensing Data, Oxford & IBH, New Delhi.

John R. Jensen (2000), Remote Sensing of the environment: An earth resource perspective, Pearson publication.

Lillesand T M., and Kiefer R W., (2000), Remote Sensing and Image interpretation, New York, John Wiley and Sons.

Pradip Kumar Guha (2013), Remote Sensing for the beginner, Third Edition, East-West Press, New Delhi.

Suresh S and Mani K., (2017), Application of Remote Sensing in understanding the relationship between NDVI and LST, IJRET, Vol. 6, Issue: 02.

ELECTIVE COURSE: PGES 11518 - ENVIRONMENT AND SUSTAINABILITY

Course Learning Outcomes

- CO1** *Understand the basic concepts of environment.*
- CO2** *Understand theoretical evolution of the term sustainability and sustainable development.*
- CO3** *Evaluate major reasons for the environmental degradation.*
- CO4** *Demonstrate an environment oriented perspective while implementing projects.*
- CO5** *Analyse the sustainability of various development initiatives.*
- CO6** *Demonstrate the need for National Sustainability Mission.*
- CO7** *Check for solutions to minimize degradation of ecosystem through the implementation of SDG's.*

Course Content:

Module: 1

Concept of Environment; Major elements in Environment, Role of biotic and Abiotic elements; Biodiversity; Ecosystem- Structure, Function, Process and Energy Flow; Ecosystem Stability; Ecosystem; types and stability.

Module: 2

People and Ecosystem; Utilization of Natural Resources and ecosystem degradation; Development and Environment; Understands the nature of environment degradation; Comparative evaluation of Carbon Foot Print in developing and developed countries.

Module: 3

Sustainable Development: Meaning, significance and components; History and emergence of Sustainable Development; Agenda21, Commission on Sustainable Development, Millennium development goals; Sustainable development goals; Challenges in implementation; Regional and global perspective.

Module: 4

Sustainable Development Goal Index India's rank and role and regional disparities ; measures for achieving SDG; Role of Civil Society and local Communities, Innovative practice, Traditional knowledge systems, Sustainable livelihoods.

Faculty Member/s:

CO	Course Outcome	PO/ PSO	CL	KC	Class sessions (approx.) (Hrs.)	Lab session/ Field visits (Hrs.)	Assessment task
CO1	Understand the basic concepts of environment	PO1, PSO1	Un	Co	6	oo	Tutorial assignment, discussion
CO2	Understand theoretical evolution of the term sustainability and sustainable development.	PO3, PSO4	Ev	Pr	10	oo	Discussion and presentation
CO3	Evaluate major reasons for the environmental degradation.	PO3, PSO2	Cr	Pr	10	oo	Discussion and debates
CO4	Demonstrate an environment oriented perspective while implementing projects.	PO1, PSO1	Un	Co	8	oo	Tutorial assignment and discussion
CO5	Analyse the sustainability of various development initiatives.	PO1, PSO3	An	Pr	12	oo	Discussion and presentations
CO6	Demonstrate the need for National Sustainability Mission.	PO3, PSO2	Cr	Pr	12	oo	Discussion and presentation
CO7	Check for solutions to minimize degradation of ecosystem through the implementation of SDG's.	PO4, PSO6	Cr	Pr	14	oo	Presentation Book Review

Essential Readings

- Atkinson, G., Dietz, S., Neumayer, E., Agarwala, M. (eds.). 2014. Handbook of sustainable development. Edward Elgar Publishing.
- Balakrishnan, M., 1998 : Environmental Problems and Prospects in India, Oxford & IBH Pub., New Delhi.
- Birch, E.L. and Wachter, S.M. (eds.) .2008. Growing Greener Cities: Urban Sustainability in the 21st Century, Univ. of Penn. Press
- Blewett, J. (ed.) (2008): Understanding Sustainable Development, Routledge
- Brundtland Commission. 1987. Our Common Future, Oxford University Press
- Das, R. C., 1998. The Environmental Divide: The Dilemma of Developing Countries, A.P.H. Pub., New Delhi.
- Dressner, S. 2002. The Principles of Sustainability, Earthscan Publications Ltd., London
- Gole, P., 2001: Nature Conservation and Sustainable Development in India, Rawat Pub., Jaipur.
- Lele, Sharachchandra M. 1991. Sustainable Development: A Critical Review, World Development 19(6) pp. 607-21
- Munn, T., (ed.) 2001: Encyclopedia of Global Environmental Change, John Wiley & Sons, West Sussex
- OECD and UNDP. 2002. Sustainable Development Strategies: A Resource Book
- Rogers P. 2007. An Introduction to Sustainable Development, Earthscan Publications

ELECTIVE COURSE: PGES 11519 – APPLICATION OF GEOSPATIAL TECHNOLOGY IN NATURAL RESOURCE MANAGEMENT

Course Learning Outcomes

CO 1: Categorize major natural resources

CO2: Analyse the potential of major natural resources

CO 3: Understand the importance of natural resource management

CO 4: Evaluate the application of geospatial technology in natural resource management

CO 5: Plan optimum use of natural resources for sustainable development

Course Content:

Module-1

Concept of natural resources; Types of natural resources; Geospatial techniques; GIS- Remote Sensing-GPS; Sources of Data

Module -2

Forest Resources – components of forest ecosystem – types – satellite image based forest index - natural resource conservation and management – identification and mitigation of forest fire – wildlife habitat suitability analysis – Human- wildlife conflict hot spot identification

Module-3

Water resources: Types of water resources; watershed; watershed prioritization and management– river health - Groundwater potential zone demarcation; water quality index; water balance; satellite image based water indices.

Module-4

Land resources: Soil characteristics – physical – biological - chemical; Soil Horizon; soil quality index; soil erosion identification method, satellite image based soil indices

Course: PGES 11519 - APPLICATION OF GEOSPATIAL TECHNOLOGY IN NATURAL RESOURCE MANAGEMENT

Faculty Member/s:

Credits: 4

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs.	Assessment
CO1	Categorize major natural resources	PO 1 & PSO1	Un	Co	5	0	Assignment on the importance of natural resource management
CO2	Analyse the potential of major natural resources	PO1, & PSO2, PSO3	Un	Co	20	0	Assignment on potential of natural resources with reference to India
CO3	Understand the importance of natural resource management	PO3, PO6 & PSO4	Ap	Pr	5	20	Assignment on depletion of natural resources
CO4	Evaluate the application of geospatial technology in natural resource management	PO1, PO2, & PSO4	An	Pr	5	10	Lab oriented assignments of executing natural resources assessment
CO5	Plan optimum use of natural resources for sustainable development	PO1,PO2, PO4 & PSO3	An	Pr	5	5	Assignment on evaluation techniques of natural resource management

Essential Readings

Jensen J R., (2009), Remote Sensing of the Environment: An Earth Resources Perspective, Pearson prentice Hall.

Lillesand T.M and Kiefer R.W., (2008), Remote Sensing and Image Interpretation, John Wiley and Sons

Magesh N S., Chandrasekar N., And Soundranayagam J P., (2011), Delineation of groundwater potential zones in Theni District, Tamil Nadu using Remote Sensing, GIS and MIF Techniques, Geoscience Frontier 3(2), PP: 189-197.

Ramade F., (1984), Ecology of natural resources, John Wiley & Sons Ltd, New York, PP: 23.

Sharma V K., (1991), Remote Sensing for Land Resource Planning, Concept publishing company, New Delhi.

Sunder I., (2014), Sustainable Development Theory and Practice, Serials publications, New Delhi, India.

ELECTIVE COURSE: PGES 11520 - INTRODUCTION TO MAPS AND MAP READING

Course Learning Outcomes:

CO1: Understand the history and evolution of maps

CO2: Understand the basic assumptions behind the making of maps

CO3: Analyse the information in a map

CO4: Analyse topography through the interpretation of contours

CO5: Interpret aerial photos and satellite imageries

CO6: Understand basics of GIS

Course Content:

Module 1: An overview of cartography –History of Map making, Definitions, Imperial and Colonial cartography, Cartography in colonial India

Module 2: Basic mapping principles - scale, projections, spatial reference systems, Datum, Geodetics and spheroid, Map projections

Module 3: Elements of map design and layout Map Lettering and toponomy; Data representation and symbolization - colours and patterns; map generalization;

Module 4: Map reading – Understanding layered spatial Information - Interpretation of Survey of India Topographical Maps

Module 5: Modern cartography - Aerial Photos, Satellite Imageries and Geographical Information Systems

COURSE: PGES 11520 - INTRODUCTION TO MAPS AND MAP READING

Faculty Member/s:

Credits: 4

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs.	Assessment
CO1	Understand the history and evolution of maps	PO1, PSO2	Un	Co	15	00	Assignment on history of cartography
CO2	Understand the basic assumptions behind the making of maps	PO1, PSO2	Un	Co	10	00	Practical exercises of scale, direction and projections
CO3	Analyse the information in a map	PO1, PSO3	An	Pr	05	05	Map reading exercise
CO4	Analyse topography through the interpretation of contours	PO1, PSO4	An	Pr	00	10	Topographical map interpretation
CO5	Interpret aerial photos and satellite imageries	PO1, PSO4	Ap	Pr	00	30	Lab oriented exercise
CO5	Understand basics of GIS	PO1, PSO2	Un	Co	10	30	Lab oriented exercise

Essential Readings:

1. Arson, R.W., 1988 : Basic Cartography, Elsevier, Applied Science Publishers, New Work. Company, New Delhi.
2. Judith Tynor 1992 : Introduction to Thematic Cartography, Prentice Hall, New Jersey.
3. Kraak, M.J., A.F.J.Ormeling, 1996 : Cartography, Longman Ltd., England
4. Misra, R.P. & A.Ramesh, 1989: Fundamentals of Cartography, Concepts Publishing
5. Robinson, H., Joel,L., Morrisson, Philip, C., Muekrcke,, A John Kimerling and Staphen, C. Guptil, 1995 :Elements of Cartography, John Wiley & sons, USA.

ELECTIVE COURSE: PGES 11521 – POST COLONIAL GEOGRAPHIES

Course Learning Outcomes

CO1: Establish the connections between imperialism, colonialism and neoliberalism

CO2: Trace the idea of Post colonialism

CO3: Analyse the dimensions of Postcolonial thinking

CO4: Evaluate Neo liberalism and new imperialism

CO5: Analyse issues related to environment and development

CO6: Evaluate the idea of conservation and life of Adivasi population in India

Course Content:

Module I – Conceptualization – Critical theory – Spivak, Said, Derek Gregory – Imagined geography, imagined others; Colonial lives and geographies of power – Imperialism, colonialism – Imperialism and the science – Mapping the Empire, Colonial cartography in India -

Module II – Postcolonial Imaginations – Post-colonial and Postcolonial – De-mapping the empire, Resistance and anti-colonial movements; The idea of development and the Third world – Postcolonial India - Subaltern studies

Module III – Neo liberalism – the new imperialism – Oil and the politics of extraction – land struggles and agrarian movements in India – Development dispossession – Nationalism vs new Internationalism

Module IV – The politics of environment – environment and development – the politics of resources and conservation – Indigenous people of the world - Adivasi movements in India

Faculty Member/s:

CO	Course Outcome	PO/PSO	CL	KC	Class sessions (approx.) (Hrs.)	Lab session /Field visits (Hrs.)	Assessment task
CO1	Establish the connections between imperialism, colonialism and neoliberalism	PO1, PSO2	Ap	Co	6	0	Tutorial assignment, discussion
CO2	Trace the idea of Post colonialism	PO1, PSO3	Ev	Co	10	0	Tutorial and Assignment
CO3	Analyse the dimensions of Postcolonial thinking	PO1, PSO2	Ev	Co	10	0	Discussion and debates
CO4	Evaluate Neo liberalism and new imperialism	PO1, PSO2	Ev	Co	8	0	Tutorial assignment and discussion
CO5	Analyse issues related to environment and development	PO1, PSO3	An	Pr	12	0	Discussion and presentations
CO6	Evaluate the idea of conservation and life of Adivasi population in India	PO1, PO4 PSO2, PSO6	Ev	Pr	12	0	Discussion and presentation

Essential Readings

- Blunt, Alison and Cheryl McEwan. *Postcolonial Geographies*. New York: Continuum, 2002.
- Brotton, Jerry. *Trading Territories: Mapping in the Early Modern World*. Ithaca: Cornell University Press, 1998.
- Brown, Lloyd A. *The Story of Maps*. Boston: Little, Brown & Co., 1949.
- Edney, Matthew H. *Mapping an Empire: The Geographical Construction of British India, 1765-1843*. Chicago: University of Chicago Press, 1997.
- Hanson, Susan. *Ten Geographic Ideas that Changed the World*. New Brunswick: Rutgers University Press, 1997.
- Huggan, Graham. *Interdisciplinary Measures: Literature and the Future of Postcolonial Studies*. Liverpool: Liverpool University Press, 2008.
- James, Preston E. *All Possible Worlds: A History of Geographical Ideas*. Indianapolis: Odyssey Press, 1972.
- Kish, George. *A Source Book in Geography*. Cambridge: Harvard University Press, 1978.
- Livingstone, David N. *The Geographical Tradition: Episodes in the History of a Contested Enterprise*. Oxford: Blackwell, 1992.
- Oxford English Dictionary*. Second Ed. Oxford: Oxford University Press, 1989.
- Phillips, Richard. *Mapping Men and Empire: A Geography of Adventure*. London: Routledge, 1997.
- Said, Edward. *Culture and Imperialism*. London: Vintage, 1993.
- Tooley, R.V. *Maps and Map-Makers*. London: B.T. Batsford, 1949.
- Turnbull, David. *Maps are Territories: Science is an Atlas*. Chicago: University of Chicago Press, 1987.

SEMESTER III

CORE COURSE: PGEM 11507 – CONTEMPORARY HUMAN GEOGRAPHY

Course Learning Outcomes

CO1. *Understand fundamental philosophical assumptions and concepts of human geography*

CO2. *Demonstrate an advanced understanding of contemporary debates in Geography.*

CO.3 *Demonstrate knowledge of key concepts and contribution of seminal thinkers and theorists in the field of Human Geography*

CO4. *Analyse the relevance of emerging themes in human geography after cultural turn*

CO5. *Understand how theoretical frameworks shape fieldwork*

CO6. *Demonstrate how to conduct in-depth fieldwork*

Course Content:

Module: 1. GEOGRAPHY AND THEORY

- a. Ontology, Epistemology, Ideology, Methodology
- b. The production of knowledge; Scientific and Situated knowledge
- c. Definitions of Human Geography
- d. Fundamental Concepts of Human Geography; Space, Place, Nature

Module: 2. CONTEMPORARY TRENDS IN HUMAN GEOGRAPHY

- a. Cultural Turn
- b. Critical Geographies –Geographies of domination and resistance
- c. Postmodern Geographies – Speaking from the margins
- d. Post Structural Geographies – Power Politics of Representation, Identity and Difference

Module: 3. THE PRACTICE OF CONTEMPORARY HUMAN GEOGRAPHY

- a. Geographies of body: Performativity, Representation and Sensory sites
- b. Geographies of text: Theorising the landscape
- c. Geographies of Governance: Citizenship, governance and social justice
- d. Geographies of Globalisation: Space, time and mobility

Module: 4. FIELD WORK IN CONTEMPORARY HUMAN GEOGRAPHY

- a. Looking the field through theory – Objectivity and subjectivity
- b. Power relations in the field
- c. Interpretations
- d. Group field work project and report

Faculty Member/s:

CO	CO Statement	PO/ PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO1	Understand fundamental philosophical assumptions and concepts of human geography	PO1, PSO2	Un	Co	06	00	Assignment on space, place and nature
CO2	Demonstrate an advanced understanding of contemporary debates in geography	PO1, PSO3	An	Co	10	00	Tutorial – Article reading
CO3	Demonstrate knowledge of key concepts, contribution of seminal thinkers and theorists in the field of Human Geography	PO1, PSO2	Ev	Co	10	00	Presentation on thinkers and their contribution
CO4	Analyse the relevance of emerging themes in human geography after cultural turn	PO1, PSO1	An	Co	6	00	Assignment on 21 st century practices in geography
CO5	Understand how theoretical frameworks influence fieldwork	PO4, PSO3	An	Co	06	24	Theoretically inform field VISIST
CO6	Demonstrate how to conduct in-depth fieldwork	PO1, PSO3 & 5	Ap	Pr	06	48	Field work Assignment

Reading List

- Agnew, John et. al. (ed.) (1996), Human Geography, Blackwell Publishers London.
- Bonnet, Alastair (2008) What is Geography? Sage, New Delhi.
- Cloke, Paul and Johnston, Ron (2005) Spaces of Geographical Thought, Sage, London.
- DeLyser, S. Herbert, S. Aitken, M. Crang, and L. McDowell (2010) The SAGE Handbook of Qualitative Geography. Los Angeles, CA: SAGE.
- Dickinson, R.E. (1969), The Makers of Modern Geography, London.
- Dictionary of Human Geography
- Dikshit, R.D. (1999), Geographical Thought - A Contextual History of Ideas, Prentice Hall of India, New Delhi.
- Dikshit, Aitken Stuart & Gill Valentine ed. (2006) Approaches to Human Geography, Sage, London.
- Hartshorne, R. (1959), Perspective on Nature of Geography, Rand McNally & Co.
- Harvey, David (1969), Explanation in Geography, Edward Arnold, London.
- Harvey, David (1990) The Condition of Postmodernity, Blackwell, London.
- Harvey, Milton E and Brian P. Holly (1981), Themes in Geographic Thought, Croom Helm, London.
- Hubber, Phil et. al. (2002), Thinking Geographically: Space Theory and Contemporary, Human Geography, Continuum, New York.
- Introducing of Human geography, Clock, Crank and Goodwin (2014)
- James P.E. and Martin J. Geoffret (1972) All Possible Worlds, John Wiley and Sons, New York.
- Johnston, R.J. (1988) The Future of Geography, Methuen, London.
- Johnston, R.J. (2004) Geography and Geographers, Arnold London.
- Key thinkers in Geography of Space and Place.
- Local literature work indicative towards transformation of society
- Peet, Richard (2003) Radical Geography, (Indian Reprint), Rawat Publication, New Delhi.
- Peet, Richard (1998) Modern Geographical Thought, Oxford Blackwell.
- Soja, Edward W. (1997) Postmodern Geographies, Indian edn. Rawat Publications, New Delhi.
- Unwin, Tim (1992) The place of Geography, Pearson Education Limited, Essex.

CORE COURSE: PGEM11508 - URBAN GEOGRAPHY

Course Learning Outcomes:

- CO 1.** Understand the historical conditions that determine the process of urbanization.
- CO 2.** Analyze the plurality in understanding 'the urban'
- CO 3.** Analyze the complexities power matrix that govern the urban life
- CO 4.** Analyze the social and spatial inequalities in urban life
- CO 5.** Formulate environmental and humanistic strategies influencing urban policy interventions

Course Content:

Unit I: Conceptualizing urban and urban geography: Study of urban geography in the context of globalization, urban identity, and sociocultural diversity significance of space and place, Cities and Urbanization, Early approaches – site and situation, morphology, Theories of city structure - Burgess, Hoyt, Harris and Ullman, Mann, White; Modern approaches – Positivist, Behavioral, Structuralist, Poststructuralist; Centrality and Mobility in cities

Unit II: Urban Culture and Society: Cultural and social context of urban life – morphology and materiality of cultures, Sociospatial transformation in cities - diversity and difference, hybridity of urban Identities within urban social environment - Urban ecology and architecture (expressions of urban communities): housing patterns, spaces of consumption, streets and street vendors - marginalization in urban space.

Unit III: Urban Economics and Governance. Government policies and urban form, structure and economy. Pre capitalist economic formations (Karl Marx) and Capitalist mode of Urbanization, the service economy – features of tertiarisation in the developing economies, Globalization and new industrial spaces - cultural industries, cities and tele-communications, smart cities, the changing nature of urban governance

Unit IV: Social Justice and the City. Urbanism and social justice – Segregation: Social tension, exploitation, race, class, caste and gender inequalities, and emancipatory movements in the city; gentrification; environment issues, ecological footprint of cities, conservation movements in cities.

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO 1	Understand the historical conditions that determine the process of urbanization.	PO1 PSO1 PSO2	Re, Un	Co	12	00	Assignment: Book review
CO 2	Analyze the plurality in understanding 'the urban'	PO1 PSO3	Un	Co	12	00	Assignment: Book Review Tutorial
CO 3	Analyze the complexities power matrix that govern the urban life	PO1 PO4 PSO4	An, Ev	Fa, Co, Pr	08	04	Assignment: Collection of Secondary Data
CO 4	Analyze the social and spatial inequalities in urban life	PO1 PO2 PSO3 PSO4	Un, An, Ev, Cr	Co Pr	08	04	Assignment: Plan preparation
CO 5	Formulate environmental and humanistic strategies influencing urban policy interventions	PO1 PSO1 PSO3 PSO4	Un, An, Ev	Fa Co Pr	08	04	Assignment: Report writing and presentation

Reading List:

- Friedmann, J. 1988. Life space and economic space: Contradictions in regional development. Friedmann, J. (ed.) Life Space and Economic Space: Essays in Third World Planning, 93–107. New Brunswick, NJ: Transaction.
- Hardoy, J. E., Mitlin. D. Satterthwaite. D. (1992). Environmental Problems in Third World Cities, Earthscan, Great Britain.
- Harold Carter 1995, The Study of Urban Geography, Arnold, London
- Harvey, D. 1973. Social Justice and the City. London: Edward Arnold.
- Jensen, J.R. (2007). Remote Sensing of the Environment: An Earth Resource Perspective, Prentice-Hall, NJ, USA.
- Marcotullio, P. McGranahan. G. (2007). Scaling Urban Environmental Challenges: From Local to Global and Back, Earthscan, Great Britain.
- Michael.P. (2009). Urban Geography: A Global Perspective, Taylor & Francis, Great Britain.
- Ramachandran R 1992, Urbanization and Urban Systems in India, Oxford University Press, Delhi.
- Singh R Y 2002, Geography of Settlement, Rawat Publication, Jaipur.
- Singh S B, (1996), “New Perspectives in Urban Geography, M.D Publication, New Delhi.
- Sivaramakrishnan 1996, Urbanization in India, Concepts Publishing Company, New Delhi.
- Vaysali Singh 2011, Urban Geography, Alfa Publication, New Delhi.

CORE COURSE: PGEM 11509 – INTRODUCTION TO FIELD RESEARCH IN GEOGRAPHY

Course Learning Outcomes

CO 1: *Understand the concepts and relevance of field work in Geography*

CO2: *Design a fieldwork research plan*

CO 3: *Execute a fieldwork in a systematic manner*

CO 4: *Demonstrate data collection and management skills.*

CO 5: *Exposure to training and research on the field*

CO6: *Adapt to and solve real world issues*

CO7: *Produce and communicate a research report*

CO 8: *Work cooperatively, equitably and inclusively as a team*

Course Content:

Module-1: Relevance Of fieldwork in Geography; Introduction to geographical fieldwork–Methods of geographical fieldwork - Idea of the field - Identification of field - Field diary - Ethics in fieldwork.

Module-2: Identification of the field; Identification of area for fieldwork - Information reviews of previous study - Pilot visit - Pilot visits - Development of research proposal & Review of literature

Module 3: Pre field (Stage 1) Academic Arrangement -. Preparation of Questionnaire for Survey. Interview and focus groups discussion. Finalization and Printout of questionnaire and base maps. Field Notebook.

Module-4 – Pre field (Stage 2); Logistics arrangement; Accommodation, Instruments needed, Health status, Field Kit, Others. Informing the local authorities.

Module 5: 10 days of field camp anywhere in Kerala

Module 6: Post-Field. Enquiry, making sense of data, compilation, Coding Cleaning, Data analysis, Report Writing and Presentation

(Each student should individually prepare and submit a report to the department after this course. Each report may contain necessary maps, statistical tables, photographs, videos and other relevant documents with a write-up. As the course focuses on field oriented practical learning, there will be no end semester examination for this course. All four credits of the course will be evaluated internally based on each student's engagements in the field and the end report submitted to the department).

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs.	Assessment
CO1	Understand the concepts and relevance of field work in Geography	PO1 & 4, PSO 3	Un	Co	10	0	Assignment on “the field”
CO2	Design a fieldwork research plan	PO3 & PSO2	Cr	Pr	10	0	Involvement in preplanning phase of the fieldwork and plan
CO3	Execute a fieldwork in a systematic manner	PO3 & 4, PSO2	Ap	Pr	5	10	Involvement in the fieldwork
CO4	Demonstrate data collection and management skills	PO3 & PSO4	Ap	Pr	0	15	Involvement and generation of data
CO5	Exposure to training and research on the field	PO 1, 3 & 4, PSO1, 3 & 4	Un	Me	5	0	Involvement in the field
CO6	Adapted to and solve real world issues	PO3, PSO4 , PSO6	Ap	Pr	0	10	Field notes and report
CO7	Produce and communicate a research report	PO2, PSO5	Cr	Pr	5	0	Report and presentations
CO8	Work cooperatively, equitably and inclusively as a team	PO3, PO4 and PSO6	Cr	Me	0	25	Involvement in the fieldwork

Essential Readings

- Bajer L . Therese (1988), Doing Social research, New York, McGraw Hill
- Darren George and Paul Malley (2016), IBM SPSS Statistics 23 step by step – A simple Guide and references, Special Indian Edition, Rouledge Publication
- Gerber, Rod and Goh Kim Chuan (2000), Fieldwork in Geography: Reflections, perspectives and actions, Springer publication
- John F. Schroder, Fieldwork in Physical Geography, Sage Knowledge.
- Lal Das (2014), Practice of Social Research: Social work Perspective, Rawat Publications, New Delhi
- Limb & Dywer: Qualitative methods in Geography
- Philips R& Jones J . 2012. Field work of Human Geographers. Sage Publication.
- Robert H. Stoddard (1982)Field Techniques and Research Methods in Geography
- Seklton T. 2001. Cross cultural research. Issues. Of Power, positionality of race in

ELECTIVE COURSE: PGEM 11522 - GEOGRAPHY OF TOURISM

Course Learning Outcomes:

- CO1.** Understand spatial distribution of resources in the evolution of tourism
- CO2.** Assess spatialities, tourism development and its critiques
- CO3.** Critique worldwide economic, cultural, political and technological exchanges and connections that tourism brings
- CO4.** Rate tourism as a key sustainable sector in country's economic growth
- CO5.** Evaluate socio-cultural, economic and environmental impacts of tourism
- CO6.** Design sustainable tourism management plan using GST for tourism development in Kerala

Course Content:

Module I:

Definition and scope; Tourism and resources: water, climate, natural and cultural landscape and wildlife resources. Economic impact of tourism on geographic areas. Differentiate urban and rural tourist sites. Social and cultural costs and benefits of tourism in Kerala.

Module II:

Tourism as an avenue of capital accumulation – globalization –rise of leisure class - tourism and economic restructuring; Spatial dimensions of tourist attractions- national and international. Promotion of Tourism: Infrastructure and support systems. Spatial and temporal dynamics of tourism development – Coastal, Urban, Rural, Eco tourism; Role of planning for the promotion of equitable tourism and generation of employment.

Module III:

Evolution, growth and development of tourism in India and Kerala; Social, cultural and economic dimensions and the environmental consequences of tourism development – biodiversity loss– Recent trends in geography of tourism: sustainable tourism, gender and tourism, tourism and climate change.

Module IV:

Tourism impact assessment: case studies of Kerala's backwater, hilly and mountain areas, and coastal tourism -application of GIS and GST in tourism research.

Faculty Members:

CO	CO Statement	PO/ PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO 1	Understand spatial distribution of resources in the evolution of tourism	PO1 PSO1	Re, Un	Co	12	00	Assignment: review of literature on resources
CO 2	Asses spatialities, tourism development and its critiques	PO1 PSO3	Un	Co	06	06	Assignment: Tutorial
CO 3	Critique worldwide economic, cultural, political and technological exchanges and connections that tourism brings	PO1 PO3 PO4 PSO1 PSO2 PSO4	Ap An Ev	Fa Co Pr	06	06	Assignment: Review of literature
CO 4	Rate tourism as a key sustainable sector in country's economic growth	PO1 PSO1 PSO4	Un Ev	Fa Co	06	06	Assignment: Data analysis
CO 5	Evaluate socio-cultural, economic and environmental impacts of tourism	PO1 PO2 PSO1 PSO3 PSO4	Un An Ev	Fa Co Pr	06	06	Assignment: Tutorial
CO 6	Design sustainable tourism management plan using GST for tourism development in Kerala	PO2 PSO4 PSO5	An Ev Cr	Co	04	08	Assignment: Report writing and presentation

Essential Readings

- Beeton, S. 2006, Community Development through Tourism, Landlinks Press
- Bhatia A.K,1996, Tourism Development: Principles and Practices, Sterling publishers, New Delhi,
- Bhatia, A.K, 1991, International Tourism-Fundamentals and Practices, Sterling, New Delhi,
- Buckley, R. (2009): Ecotourism: Principles and Practices, CABI
- Dora Smolic Jurdana, 2006, Planning city tourism development – principles and issues, Tourism and hospitality management, volume no 12, no 2,
- Holden Andrew, 2000, *Environment and Tourism*, Routledge, London
- Hunter C and Green H, 1995, *Tourism and the Environment: A Sustainable Relationship* Routledge, London,
- Milton D.1993, *Geography of World Tourism* Prentice Hall, New York.
- Mishra Jitendra Mohan. Sampad Kumar Swain, 2011, *Tourism: Principles and Practices*, Oxford University Press, ISBN0198072368, 9780198072362
- Mustafa Mohammadi, Zainab Khalifah,2010, Local People Perception Towards Social, Economic, Environmental Impacts of Tourism, *Asian Social Science*, Volume No. 6, No.121,
- P K, Manoj, 2010, Tourism in Kerala: a study of the imperatives and impediments with focus on eco-tourism. “Saaransh” RKG Journal of Management (ISSN: 0975-4601). 1. 78-82,
- Robinson, H.1996, *Geography of Tourism* Macdonald and Evans, London,
- Shiji O, 2017, Urban tourism- the case of India, *International Journal of Advanced Education and Research*, Volume No 2,
- Stephen Williams,1998, *Tourism Geography*, Routledge, London,
- Suresh, K.T. (1994): *Tourism Policy of India: An Exploratory Study*, Equations, Bangalore
- Tribe, J. (2009): *Philosophical Issues in Tourism*. Channel View Publications

ELECTIVE COURSE: PGEM 11523 – ENVIRONMENT OF KERALA

Course Learning Outcomes:

- CO1.** Understand the ecological significance of landscapes of Kerala.
- CO2.** Understand the distribution of vegetation in relation to physiography and climate.
- CO3.** Evaluate the ecologically sensitive zones of Kerala
- CO4.** Analyse study reports on Western Ghats.
- CO5.** Analyse the significance of river systems and wetlands.
- CO6.** Evaluate various environmental movements of Kerala.

Course Content:

Module 1: Physiographic Divisions of Kerala – Highlands, Midlands and Lowlands – Topography, geology, drainage, vegetation types, climate specialties, and land use types.

Module 2: The Western Ghats and Foothills - Ecological history and significance, Major conservation sites; Environmental issues – landuse change, mining, soil erosion, pollution; Western Ghats protection reports

Module 3: The Rivers and Wetlands – Major rivers of Kerala and environmental significance, status of river systems in Kerala; Wetlands - Definition, significance and classification, status of wetlands in Kerala

Module 4: Ecological Issues and movements: Case Studies of Salient Valley movement of Palakkad, Anti Coco Cola Movement of Plachimada , Anti Endosulfan movement of Kasargod, Anti Nitta Gellatin movement of Kathikudam, Anti Quarrying movements

Faculty Members:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab /Field Hrs.	Assessment
CO1	Understand the ecological significance of landscapes of Kerala.	PO1, PSO2	Un	Co	12	00	Tutorials Assignments
CO2	Understand the distribution of vegetation in relation to physiography and climate.	PO1, PSO3	Un	Co	12	00	Tutorial and Assignments
CO3	Evaluate the ecologically sensitive zones of Kerala.	PO4, PSO3	An	Pr	10	00	Discussions
CO4	Analyse study reports on Western Ghats.	PO1, PSO2	Ev	Pr	10	00	Tutorial Review of different reports.
CO5	Analyse the significance of river systems and wetlands.	PO4, PSO3	Ev	Co	06	00	Seminars Debate
CO6	Evaluate various environmental movements of Kerala.	PO1, PSO1	Ev	Pr	06	20	Field study and discussion

Essential Readings:

Chandrasekharan C., Forest as resource-perspectives in The Natural Resources of Kerala, WWF, Thiruvananthapuram, 1997, pp. 422-423.

Chattopadhyay, S. 2017. Geomorphological Field Guide Book on Laterites and Backwaters of Kerala (Edited by AmalKar). Indian Institute of Geomorphologists, Allahabad.

Cooke, R. U. and Doornkamp, J.C., (1974). Geomorphology in Environmental Government of Kerala. Urban policy and Action Plan for Kerala. Available from <http://www.kerala.gov.in/annualprofile/urban.htm>.

Human Development Report,(2005) State Planning Board Government of Kerala.

Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.

Kamalakshan Kokkal, Environmental Problems of Kerala. (Malayalam, Keralathile Paristhithi Prashnangal), Thiruvananthapuram, STEC, 2002, pp. 3 1-32. Management- A Introduction, Clarendon Press, Oxford.

Nair, K. K (.2007) Quaternary geology and geomorphology of coastal plains of Kerala, Geological Survey of India.

Prasannakumar,V.(2007)Geomorphology International Centre for Kerala Studies, University of Kerala.

State of Environment Report Kerala, (2007). Land environments, Wetlands of Kerala and Environmental Health. Vol I.

State of Environment Report Kerala, (2007). Natural Hazards. Voll. KSCSTE, Government of Kerala.

State Planning Board, Thiruvananthapuram (2017). Economic Review.

The Ministry of Environment and Forests Government of India,(2011).Report of the Western Ghats Ecology Expert Panel Part I.

ELECTIVE COURSE: PGEM 11524 - ANCIENT GEOGRAPHY OF INDIA

Course Learning Outcomes

CO1. Understand geographical background of ancient history of Indian subcontinent

CO2. Understand history from a geographical perspective

CO3. Evaluate the major characteristics of India's physical landscape in the ancient period

CO4. Analyze various geographical factors for contributing the evolution of ancient Indian civilizations

CO5. Evaluate the how the spatial structure had been arranged in the ancient India

Course Contents

Unit I: Nature and Scope of Historical Geography; Reconstructing the historical landscapes; Evolution of Indian landmasses; Geological History of India; Sources of data and Evidence.

Unit II Geographical setting of Ancient India: Role of Mountains; Plains; Rivers; Climate in ancient India.

Unit III Ancient India Civilization and Geography; Population Characteristic, Entry and Dispersal of Human Population in Ancient Period; Geographical interpretation of the development of early civilizations, Spatial spread; Major reason of its collapses.

Unit IV. Geographical influence of evolution social structure in ancient India; Regional framework in Ancient India; Centers of Power in Ancient India; Janapadas and Maharapads; Elements in the development of socio cultural regions in Ancient India

Faculty Member:

CO	Course Outcome	PO/ PSO	CL	KC	Class sessions (approx.) (Hrs.)	Lab session/ Field visits (Hrs.)	Assessment task
CO1	Understand geographical background of ancient history of Indian subcontinent	PO1, PSO1	Un	Co	15	0	Discussion and tutorials
CO2	Understand history from a geographical perspective	PO3, PSO4	Un	Co	15	0	Book review, assignment
CO3	Evaluate the major characteristics of India's physical landscape in the ancient period	PO1, PSO1	An	Co	15	0	Tutorials, discussion
CO4	Analyze various geographical factors for contributing the evolution of ancient Indian civilizations	PO3, PSO4	An	Co	15	0	Tutorials and assignment
CO5	Evaluate the how the spatial structure had been arranged in the ancient India	PO3, PSO2	An	Pr	12	0	Tutorials Book reviews, assignments

Essential Readings:

Ahmad, A. 1999. Social Geography, Rawat Publication, New Delhi, 2019

Ahmed, A. 1993. (ed) Social Structure and Regional Development: A Social Geography. Perspective, Rawat Publications, Jaipur

Ali, S.M. 1966. The Geography of the Puranas, People's Publishing House, Delhi.

Baker, A.R.H (ed.) 1972. Progress in Historical Geography, David and Charles.

Baker, A.R.H., Hamshere, J.D., Langton, J., 1972. Geographical Interpretation of historical Sources, David and Charles.

Bharadwaj, O.P., 1986. Studies in the Historical Geography of Ancient India, Sundeep Prakashan, Delhi.

Butin, Robin A., 1993. Historical Geography: Through the Gates of Space and Time, Edward Arnold, London.

Graham Brian, Nash Catherine, 2000. Modern Historical Geographies, Longman, Essex, England.

Guelke, L., 1982. *Historical Understanding in Geography: An idealist approach*, Cambridge University Press, Cambridge.

Law, B., 1968. *Historical Geography of Ancient India*, Societe Asiatique deiParis, Paris.

Pacione, M., 1987. *Historical Geography: Progress and Prospect*, Croom Helm, London.

Roberts, P.E., 1995. *Historical Geography of India*, Vol. I & II, Printwell, Jaipur.

Sanjeev Sanyal. 2012. *Land of the Seven Rivers. A Brief of Indian Geography*. Penguin Global

Sanujit, . (2011,). *Ancient Geography of India*. Ancient History Encyclopedia.

SEMESTER IV

CORE COURSE: PGES 11510 - GEOGRAPHIES OF DISASTERS IN KERALA

Course Learning Outcomes:

- CO1.** Understand the natural and anthropogenic dynamics in the disruptions of natural processes
- CO2.** Evaluate the conditions that lead to disasters and provide practical and strategic plans for disaster mitigation
- CO3.** Develop post disaster reconstruction plans that consider sustainable environment
- CO4.** Analyze relationships between disaster characteristics and culture, socio-economic development (risk is a function of vulnerability and exposure; socio-economic conditions – HDI)
- CO5.** Create a variety of GST for DRR

Course Content:

Module 1: Key concepts and approaches: disasters – natural and anthropogenic; Crisis approach – early detection, warnings and communication - Risk and risk reduction – Human ecology, vulnerability, vulnerable communities and resilience, adaptation and mitigation – Contextualizing climate change – theoretical considerations.

Module 2: Concepts in physical and social/human geography as determinants in disasters; Tropical cyclones and disaster risk mitigation in coastal Kerala -Disasters in the context of changes in climate and weather in mountainous terrain (relief, climate, soil, drainage, vegetation) –Landuse and landslides–Floods, flood-plains and river basins – Ocean acidification and fishing communities – Sea level rise impacts on coasts and islands.

Module 3: History of hazards and disasters and emerging geographical patterns: Case studies – Tsunamis-2014, Ockhi and August 2018 Deluge – Critical evaluation of Gadgil, Kasturirangan and Oommen reports in the light of development paradigms for coastal, mountain/hill area development.

Module 4: Inequality, social stratification and disasters – culture and the social construction of disasters – culture as a source of resilience and vulnerability–conceptual, ethical and methodological issues in disaster research – Management issues: community based disaster management – State responses to disasters – Disaster recovery and role of GIS and GST.

Faculty Members:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO 1	Understand the natural and anthropogenic dynamics in the disruptions of natural processes	PO1 PSO1 PSO2	Un	Co	12	00	Assignment: Review of literature
CO 2	Evaluate the conditions that lead to disasters and provide practical and strategic plans for disaster mitigation	PO1 PSO2 PSO3	Un Ev	Co Pr	06	06	Assignment: Field work and data collection
CO 3	Develop post disaster reconstruction plans that consider sustainable environment	PO1 PO2 PSO4	An, Cr	Fa Co Pr	06	06	Assignment: Lab work
CO 4	Analyze relationships between disaster characteristics, culture, and socio-economic development (risk is a function of vulnerability and exposure; socio-economic conditions – HDI)	PO1 PO2 PSO3 PSO4	An	Co Pr	06	06	Assignment: Lab work
CO 5	Create a variety of GST for DRR	PO1 PO2 PSO1 PSO5	Cr	Fa Pr	04	08	Assignment: Disaster Management Plan Preparation

Essential Readings:

Agarwal Anil and Narain Sunita (Ed) (1999): State of India's Environment the Citizens Report, Centre for Science and Environment, New Delhi

Asian Disaster Preparedness Centre. 2008. Monitoring and reporting progress on community-based disaster risk management in Philippines, partnerships for disaster reduction—South East Asia Phase 4. Bangkok: Asian Disaster Preparedness Centre.

Bryant Edward (2000): Natural Hazards, Cambridge University Press

Centre for Earth Science Studies, 1997. Report of the workshop of Research Agenda, Environment Development Interface in Kerala. Trivandrum.

Chattopadhyay, Kumar, GLIMPSES OF KERALA THROUGH MAPS, Centre For Earth Science Studies, Thiruvananthapuram, April, 2013.

Chattopadhyay, S and Chattopadhyay, M., 1995. Terrain Analysis of Kerala: Concept, Method and Application (Technical Monograph No.1/95, State Committee on Science, Technology and Environment, Government of Kerala, Thiruvananthapuram)

Chattopadhyay, S, Velayutham, S and Salim, M B, 1986. Trends of deforestation in Kerala. In India's Environment: Problems and Perspectives, eds. B P Radhakrishna and K Ramachandran.

CSE (2019) State of India's Environment 2019. <http://www.downtoearth.org.in/>

Daly Herman E and Twonseed Kenneth N (Ed) (1993): Valuing the earth – Economics, Ecology and Ethics, MIT Press, London

Delica-Willison, Z. (2005). Community-based disaster risk management: Local level solutions to disaster risks. Tropical Coasts, 12(1), 66–73.

DIPECHO. (2010). Community-based best practices for disaster risk reduction (pp. 1–119). Maputo: UNDP.

Dupont, R.R. Baxter, T.E. and Theodore, L. (1998): Environmental Management: - Problems and Solutions, CRC Press

Franke R, 1993. Life Is a Little Better: Redistribution as a development strategy in Nadur village, Kerala. Westview Press, Colorado

Geological Society of India, 1976. Geology and Mineral Resources of the States of India, Part IX, Kerala, Misc. Pub. 30

Geological Society of India, Bangalore. PP 289 – 298 Chattopadhyay, S and Carpenter, R A, 1991. Sustainable development: Scientific jargon or a practical management alternative? Annals, National Association of Geographers, India, Vol. XI, No 2, pp 112

Kerala State Landuse Board, 1995. Land Resources of Kerala, Government of Kerala, Trivandrum

M.G., Gardner, R.H., and Graham, G., 1995. Sustainability at landscape and regional scale. In Defining and Measuring Sustainability - The Bio-geophysical Foundations, edited by Mohan Munshinge and Walter Shearer (The United Nations university and the World Bank), pp 137-143.

Morrisawa M (Ed) (1994): Geomorphology and Natural Hazards, Elsevier, Amsterdam

Munasinghe, M and McNeely, J, 1995. Key concept and terminology of sustainable development. In Defining and Measuring Sustainability - The BioGeophysical Foundations, edited by Mohan

Nair, K. M., 1995. Geological history and natural resources of lowlands of Kerala. In Science and Technology for Development (State Committee on Science, Technology and Environment, Government of Kerala, Thiruvananthapuram)

Rangachari R, Sengupta Nirmal, et al (2000): WCD Case Study Large Dams: India's Experience Final Report, Secretariat of World Commission on Dams

Singh Savindra (2000): Environmental Geography, Parag Pustak Bhavan, Allahabad

Smith, K. (2001): Environmental Hazards: Assessing Risk and Reducing Disaster, Routledge

Turk J. (1985): Introduction to Environmental Studies, Saunders, College Publication, Japan

CORE COURSE: PGES 11511 – CLIMATOLOGY AND CLIMATE CHANGE

Course Learning Outcome

- CO1. Understand the fundamentals climatology and climate change.*
- CO2. Evaluate climate change scenarios and their impacts*
- CO3. Analyse observed and projected trends and impacts of climate change.*
- CO4. Evaluate the whole framework of international negotiations on climate change with reference to India's position*
- CO5. Demonstrate local specific adaptation and mitigation strategies to curb climate change risk*

Course Content:

Module 1. Introduction of Climatology and Climate - Concepts and Process; Climate change theories - Evidence and Causes

Module 2

Climate data and its uses - Sources of Data, Methods and Techniques of Data Analysis; Interpretation; Weather Information; Urban Heat Island - Land use change and microclimate. Monsoon variability

Module 3

Climate Change Adaptation and Mitigation framework: International Legal and Policy Framework of Climate Change, UNFCCC, Different Party groups under the Convention, Major Conference of Parties and their relevance. .

Module 4

India in International Climate Change negotiations; Climate Change implications in India and Kerala. Adaption and Mitigation strategy; National Action Plan on Climate Change.

Faculty Members:

CO	Course Outcome	PO/PSO	CL	KC	Class sessions (approx.) (Hrs.)	Lab session/ Field visits (Hrs.)	Assessment
CO1	Understand the fundamentals climatology and climate change	PO1, PSO1	Un	Co	14	0	Tutorials assignment
CO2	Evaluate different climate change scenarios and their impacts	PO2, PSO1	Ev	Pr	12	0	Tutorials, discussion and assignment
CO3	Analyse observed and projected trends and impacts of climate change.	PO3, PSO4	Ev	Pr	6	4	Lab works, assignment discussion and presentation
CO4	Evaluate the whole framework of international negotiations on climate change with reference to India's position	PO 3 & 4, PSO4	Ev	Pr	10	0	Discussion, debates and presentation
CO5	Develop local specific adaptation and mitigation strategies to curb climate change risk	PO2 & 3, PSO2 & 5	Cr	Me	6	4	Field visit and presentation

Essential Readings

- Adger, W. N. 2006. Vulnerability, *Global Environmental Change*, 16 (3), 268-281
- Barros, Vicente R. (eds.), 2014. *Climate Change 2014. Impacts, Adaptation and Vulnerability: Global and Sectoral Aspects. Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Part B; Regional Aspect)*, Cambridge University Press, New York.
- Barry, R.G. and Chorley, R.J. 2003. *Atmosphere, Weather and Climate*, Routledge, London
- Brewster, E. N. 2010. *Climate Change Adaptation: Steps for a Vulnerable Planet*, New York, Nova Science
- Critchfield, H. J. 1983. *General Climatology*. Prentice Hall India Ltd (2010 Reprint)
- IPCC, 2013. *Climate Change 2013: The Physical Science Basis, the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA,
- John E Hobbs, 2016. *Applied climatology: A study of Atmospheric Resources*, Elsevier, London
- Lal, D. S. 2003. *Climatology*, Allahabad: Sharda Pustak Bhawa
- Oliver, J.E. 1993. *Climatology: An Atmospheric Science*, Pearson Education India, New Delhi
- Reid, Hannah. 2014. *Climate change and human development*, London, UK : Zed Books
- Trewartha G. T., 1980. *An Introduction to Climate*, McGraw Hill Company, New York.

CORE COURSE: PGES 11512 - DISSERTATION

Course Learning Outcomes

CO1: Design and execute a meaningful research project that demonstrates spatial thinking

CO2: Articulate research or project objectives and questions clearly and situate research within an academic or Scholarly context

CO3: Understand the challenges of empirical geographical research

CO4: Able to deal with practical research problems

CO5: Narrate the research process clearly in the form of a formal multi-chapter master's dissertation in a structured format.

CO6: Defend her/his thesis in any scholarly engagements

Course Content:

MSc dissertations (a minimum of 50 pages or 15,000 words) at the fourth semester of the programme (6 Credits) to demonstrate a student's ability to formulate a geographic research problem, collect and analyze relevant data or appropriate literature, arrive at logical conclusions, and to present the entire exercise at a seminar in the department. MSc dissertations are more often learning experiences than substantive contributions to the field. Each student has to prepare and present a proposal towards the end of the third semester. The proposal may consist of

1. Tentative Title
2. Introduction or overview
Broad and brief explanation of the study
3. Statement of the problem
Discuss the problem to be addressed in the research—the gaps, perplexities, or inadequacies in existing theory, empirical knowledge, practice, or policy that prompted the study. First state the problem generally, and then state the specifics that your research will address.
4. Study area
Map of the proposed study area (including location map). A brief description of the study area. Social and environmental history of the area. Topography, population, land use etc.
5. Brief review of literature
The literature review should carefully examine prior research and thought relevant to key aspects of your anticipated research. It should be used to inform:
 - a) The problem to be addressed and its significance
 - b) The theoretical foundation or conceptual framework
 - c) The research questions, hypotheses, foreshadowed problems, or conjectures
 - d) The research paradigm and the methodology
6. Theoretical framework
A brief discussion on the proposed theoretical framework of your study, relevance, rationality etc.
7. Research Questions/Hypothesis

Research questions address problems of the study. Each research question seeks answers to a specific problem situation described in your study. Research questions should relate to the conceptual framework. Each question should address and target a separate problem situation. If the study is strictly quantitative, state the hypothesis which intended to be tested.

8. Methodology and Methods

Briefly and specifically explain the types of methods proposed to employ for the collection of data. Explain the sampling methods (its rationality) and proposed samples. Briefly explain the analytical tools intended to use to for the research.

9. An outline of the proposed chapters of the dissertation

Each chapter with its major contents

10. Timeline of the study

Detailed timeline:

- a. Date of synopsis finalisation
- b. Date of synopsis presentation
- c. Date of Methodology presentation
- d. Dates of starting and ending of field work
- e. Dates of chapters presentations
- f. Date of final submission

11. Limitations

12. List of References

There will be generally no restrictions on the type of geographical study that one can undertake. The dissertation may be carried out within one of the systematic branches of the subject, or in an interdisciplinary nature. Each student have to carried out the dissertation work under the supervision of a faculty member and should submit three copies of the work done to the department 10 days before the commencement of the fourth end semester examinations.

The Report of the Dissertation work may consists of

- a. Define and defend the purpose of the dissertation.
- b. Define its place and function within geography.
- c. Demonstrate its philosophy and methodology.
- d. Demonstrate a rigorous pattern of experimental conception and/or data collection.
- e. Demonstrate an appropriate approach to analysis.
- f. Demonstrate a relevant and realistic conclusion.
- g. Realise its limitations within the specific field of research.

Faculty Members:

CO	Course Outcome	PO/PSO	CL	KC	Class sessions (approx.) (Hrs.)	Lab session/ Field visits (Hrs.)	Assessment
CO1	Design and execute a meaningful research project that demonstrates spatial thinking	PO1, PSO2	Ap	9	10	10	Proposal Design and Fieldwork
CO2	Articulate research or project objectives and questions clearly and situate research within an academic or Scholarly context	PO2, PSO3	Ap	Pr	12	00	Presentation and Discussion
CO3	Understand the challenges of empirical geographical research	PO3, PO4 PSO4	Ev	Pr	00	20	Lab works, assignment discussion and presentation
CO4	Able to deal with practical research problems	PO 3 & 4, PSO4, 5, 6	Ev	Pr	00	20	Discussion, debates and presentation
CO5	Narrate the research process clearly in the form of a formal multi-chapter master's dissertation in a structured format.	PO2 , PSO2 & 5	Cr	Me	06	00	Field visit and presentation
CO6	Defend her/his thesis in any scholarly engagements	PO1, PO2 & 3, PSO2 & 5	Cr	Me	06	00	Field visit and presentation

Essential Readings

Baxter, L., Hughes, C. & Tight, M. (1996) How to research. Open University Press.

Bell, J. (1993) Doing your research project. Open University Press.

Bird, J. (1993) The changing worlds of geography: a guide to concepts and methods. Clarendon

Clifford, N. & Valentine, G., (2003) Key Methods in Geography. Sage.

Cooper, B.M. (1964) Writing technical reports. Penguin.

Creswell, J.W. (1994) Research design: qualitative and quantitative methods. Sage.

Daniel R. Montello and Paul Sutton, (2006), An Introduction to Scientific Research Methods in Geography and Environmental Studies

Haines-Young, R.H. & Petch, J.R. (1986) Physical Geography: its nature and methods. Harper.

Johnston, R. (1991) *Geography and geographers*. 4th edition. Arnold.

Kate L. Turabian, (2018), *A Manual for Writers of Research Papers, Theses, and Dissertations, Eighth Edition: Chicago Style for Students and Researchers* (Chicago Guides to Writing, Editing, and Publishing) Eighth Edition

ELECTIVE COURSE: PGES 11525 – FLUVIAL AND COASTAL GEOMORPHOLOGY

Course Learning Outcomes

CO 1: *Understand linkages between river channel form and processes*

CO 2: *Analyse fluvial geomorphological processes for river management and restoration*

CO 3: *Understand coastal landforms and processes*

CO 4: *Determine river and coastal landforms from remotely sensed data*

CO5: *Propose measures to conserve riparian and mangrove vegetation*

CO 6: *Integrate river and coastal systems to larger socio-ecological systems*

Course Content:

Module 1: Drainage basin and stream network, Fluvial Process – flow, erosion and sediment transportation in rivers - River morphology – bed forms and channel forms – River landforms, river landforms of Kerala

Module 2: Channel pattern types – flood plain formation, sedimentology – river channel change; Riparian ecosystem – structural and functional characteristics environmental services; Human involvement in river networks and ecosystem destructions

Module 3: The coastal zone - Factors influencing coastal morphology and processes; Sea level fluctuations and changes; Wave processes – sediment transportation – Coastal landforms, coastal landforms of Kerala

Module 4: Salt marshes and mangrove ecosystems – conservation and management

Module 5: Field study – Identification of river and coastal processes and landforms; field study of riparian and mangrove ecosystems

Faculty Members:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs.	Assessment
CO1	Understand linkages between river channel form and processes	PO1 & PSO1	Un	Co	05	10	Field observation and report
CO2	Analyse fluvial geomorphological processes for river management and restoration	PO1, PSO3	An	Co	10	10	Assignment
CO3	Understand coastal landforms and processes	PO1 & PSO1	Ev	Co	05	15	Field observation and report
CO4	Determine river and coastal landforms from remotely sensed data	PO2 and PSO4	An	Pr	05	10	Lab assignments
CO5	Propose measures to conserve riparian and mangrove vegetation	PO3, PSO4	Cr	Pr	10	15	Project proposal
CO6	Integrate river and coastal systems to larger socio-ecological systems	PO1, PO4 and PSO6	Cr	Me	10	20	Assignment and exam

Essential Readings:

- Ahmed, E. (1972): Coastal Geomorphology of India', Orient Longmans, Delhi.
- Bird, E. (2000): Coastal Geomorphology. An Introduction, John Wiley and Sons, Chichester.
- Bird, E. C. F. (1984): Coasts – An Introduction to Coastal Geomorphology, Australian National University Press, Canberra.
- Bird, E.C.F. (1985), 'Coastline Changes: A Review, John Wiley, Chichester.
- Charlton, R.2008. Fundamentals of Fluvial Geomorphology, Routledge, London
- Chorley R.J. (ed) 'Introduction of Fluvial Processes Methuen & Co. London, 1973.
- Coates D.R. And Vitek J.I. Thresholds in Geomorphology. George Allen Unwin,
- Davies, J.L. (1972): Geographical Variation in Coastal Development, Oliver & Boyd, Edinburgh.

Davis J L (1980): Geographical variation in coastal development, Longman, New York

Dikshit, K.R. (1983): Contributions to Indian Geography – Geomorphology, Heritage, New Delhi.

Embelton and Thornes (1979): Process in geomorphology, Arnold, London

Fairbridge R (1968): Encyclopedia of Geomorphology.

Fisher, J. S. and Dolan, R.(1977): Beach Processes and Coastal Hydrodynamics, Dowden, Hutchinson & Ross Inc., Stroudsburg, Pennsylvania.

Geogory K.J. and Walling, D.E.: Drainage Basin: Forms and Process-A Geomorphological Approach. John Wiley & Sons, New York, 1985.London 1980.

Gleick, P.H. (ed): Water in Crisis Oxford University Press, New York 1993.

Gregory K.J. 'River Channel Changes' John Wiley & Sons, New York, 1977.

Guilcher, A. (1958): Coastal and Submarine Morphology, Methuen and Company Limited, London.

Guilcher, A. (1988): Coral Reef Geomorphology, John Wiley, Chichester.

Hails J and Carr A (1975): Nearshore sediment dynamics and sedimentation, Wiley, London

Johnson, D.W. (1965): Shore Processes and Shoreline Development, Hanfer, New York.

Kale, V.S. and Gupta, A. (2001): Introduction to Geomorphology, Orient Longman, Calcutta.

Karlekar Shrikant (1993): Coastal geomorphology of Konkan, Aparna Publication, Pune

King, C.A.M. (1972): Beaches and Coasts, Edward Arnold, London.

Kingston D.Fluvial Forms and Processes Edward Arnold, London, 1984.

Leopold C.B et.al.: Fluvial Processes in Geomorphology; Freeman, London 1964.

Masselink G, Hughes M G (2003): Introduction to coastal processes and geomorphology, Arnold, London

Morisawa (ed) Fluvial Geomorphology. George Allen & Unwin, 1981.

Morisawa M: 'Streams – Their Dynamics and Morphology' McGraw Hill, New York, 1968.

Pethick John (1984): An Introduction to coastal geomorphology, Arnold Heinemann, London

Pethik (1984): An introduction to coastal geomorphology, Edward ArnoldPublishers, Baltimore.

Snead, R.E. (1982): Coastal Landforms and Surface Features, Hutchinson Ross, Stroudsburg, Pennsylvania.

Steers, J. (1971): Introduction to Coastline Development' Macmillan, London.

Steers, J. A. (1971): Applied Coastal Geomorphology, MacMillan, London.

Steers, J.A. (1969): The Sea Coast: Oliver Boyd, London.

Tooley M M and Shennan I (1987): Sea level changes, Basil Blackwell, Oxford, U K

ELECTIVE COURSE : PGES 11526 - HYDROLOGY AND WATER RESOURCES

Course Learning Outcomes

CO 1: *Understand the fundamental concepts of hydrology*

CO 2: *Justify the importance of water resource management*

CO 3: *Analyse water resource potential through various methods and techniques*

CO 4: *Monitor the water quality and status*

CO 5: *Evaluate the contemporary issues on water resource management*

CO 6: *Suggest water conservation plans to attain sustainable development*

Course Content:

Module-1

Bases of Hydrology: Scope, approach and development of Hydrology; Hydrological cycle; Human influence on the hydrological cycle; Precipitation types, characteristics and measurements; Interception; Evaporation: factors affecting evaporation from free water surface and soil; Evapotranspiration: estimation and its control

Module-2

Water and Its Disposition. Soil moisture and its zones; Infiltration; Groundwater: occurrence, storage, recharge and discharge; Runoff: its sources and components, factors affecting runoff; River regimes; floods and droughts; Hydrograph: components and separation, water balance: measures and time-space characteristics

Module-3

Water as a resource: Factors affecting water resources development, Water Resource Problems: water demand and supply, water quality, interstate water disputes, institutional and financial constraints, eco-hydrological consequences of environmental degradation

Module-4

Water Resource Management: social and institutional considerations in water management, water quality management and Pollution control, water management in urban areas, watershed management, conjunctive use of surface and ground water

Module-5

Field Work – Groundwater basin investigation and data collection – groundwater management modelling

Faculty Member/s:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions / Tutorial Hours	Lab / Field Hrs.	Assessment
CO1	Understand the fundamental concepts of hydrology	PO1 & PSO1	Un	Co	10	0	Assignment
CO2	Justify the importance of water resource management	PO1 & PSO2	Un	Co	5	5	Tutorial – Article review
CO3	Analyse water resource potential through various methods and techniques	PO1 & PSO3 PSO4	An	Pr	5	5	Lab oriented assignments of water quality
CO4	Monitor the water quality and status	PO1 & PSO3 PSO4	An	Pr	5	5	Lab oriented assignments of water quality
CO5	Evaluate the contemporary issues on water resource management	PO1 & PSO4 PSO5	An	Co	10	5	Assignment on contemporary issues of water resources
CO6	Suggest water conservation plans to attain sustainable development	PO1 & PSO2 PSO5	Ap	Pr	5	10	Field based project on sustainable conservation techniques

Essential readings

- Agarwal, Anil, Sunita Narrain and Indira Khurana (2001), Making water everybody's business, New Delhi: Centre for science and environment
- Amita Mehta, NASA Satellite, Sensors and earth system models used for water resource management, Applied Remote Sensing Training, National Aeronautics and Space Administration.
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- Gujar R.K and B.C Jat (2017), Geography of water resources, Rawat Publications, Jaipur.
- Kakati, Sabitri Saikia (2008) A study on quality of drinking water in Lakhimpur district of Assam with reference to health hazard, Gauhati University, <http://hdl.handle.net/10603/66983>
- Karanth K.R (1989), Hydrology, Tata McGraw, Hill Pub Co, New Delhi.
- Raja Nazkat Ali Khan (2013), Indus Water Treaty A Geo Political Study, University of Kashmir, <http://hdl.handle.net/10603/14384>
- Raveendra, M (2013), Water balance drought analysis and watershed development of the Anantapuram district Andhra Pradesh India, P.hD Thesis, Sri Krishnadevaraya University, <http://hdl.handle.net/10603/18369>
- Vaidyanathan A (2008), Water resources-contemporary issues on irrigation, Oxford University Press, India

ELECTIVE COURSE: PGES 11527 - DECENTRALISED PLANNING

Course Learning Outcomes:

CO1: Understand the significance of decentralised planning

CO2: Understand the planning process at each level of Local Institutions

CO3: Evaluate role of the Local Governments in the planning

CO4: Comprehend the advantages of local level planning with people's participation

CO5: Create a spatial data base for local level planning

Course Content:

Module 1: Planning: Evolution, Concept, Types, Stages and Limitations - Decentralized Planning: History, Concept, importance and Approaches - Need for Decentralized Planning - Difference between Centralized Planning and Decentralized Planning - Recent Initiatives of Decentralized planning in India - Decentralized Planning Process - District Planning Committee - Metropolitan Planning Committee

Module 2: Approaches to Decentralised Planning: Bottom up approach, Trickle-down theory - Local level planning - Multi-level planning for Development: Sectoral Plans - Special Component Plans – Planning for empowerment

Module 3 : Resource Mobilisation - Importance of resources for decentralised planning - Current mechanism/organisational set up for resource mobilisation - Resource generation and sharing - Operational impediments and institutional problems in resource mobilisation - Budget and its elements - Optimum utilisation of resources – Scope and opportunities of mobilising resources from scientific institutions

Module 4: Methodologies and Techniques for Decentralised Planning - Database Information - Information Systems for Development Challenges – Incorporation of GIS data and other scientific inputs for Decentralised Planning – Resource Mapping

Module 5: Decentralised Planning in India: Experiences and Prospects; Decentralised Planning and Five-Year Plans - Decentralized Development Planning: Critical Issues in Change and Transformation – Initiatives and interventions by scientific institutions – Decentralised planning 'the Kerala Experience'

Faculty Member/s:

CO	CO Statement	PO/ PSO	CL	KC	Class Sessions/T utorial Hrs.	Lab/ Field Hrs.	Assessment
CO1	Understand the significance of decentralised planning	PO1, PSO2	Un	Co	10	00	Assignment on concept of planning
CO2	Understand the planning process at each level of Local Institutions	PO1, PSO3	An	Co	15	00	Appreciation of Documentaries
CO3	Evaluate role of the Local Governments in the planning	PO1, PSO3	An	Co	15	00	Assignment
CO4	Comprehend the advantages of local level planning with people's participation	PO4, PSO3	Ev	Co	04	20	Visit and report of Grama Sabhas
CO5	Create a spatial data base for local level planning	PO4, PSO3	Ev	Co	06	30	Generation of a ward level resource map

Essential Readings:

Action Programme for the 11 FYP, New Delhi: Planning Commission.

Administrative Reforms and Public Grievances website, <http://arc.gov.in/6-1.pdf>

Company.

Concept Publishing Company.

Experiences, New Delhi: Concept Publishing Company.

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Government of India. (2007). Sixth Report on Local Governance: An Inspiring journey into the

Hooja, Rakesh and Prakash Chand Mathur. (Eds.) (1991), District and Decentralized Planning,

<http://www.indiaenvironmentportal.org.in/files/Man%20and%20development%202.pdf>

ISS. (1994), Decentralised Planning and Panchayati Raj, New Delhi: Institute of Social Sciences.

Issac, Thomas and Richard, W. Franke. (Eds.) (2000). Local Democracy and Development: People's Campaign for Decentralisation in Kerala, New Delhi: Leftward.

Jaipur: Rawat Publications.

John, M.S. and Jos Chathukulam. (2002), Building Social Capital through State Initiative – Meghalaya), Man and Development. Retrieved from

Mishra, S.N. et.al. (2000), Decentralised Planning and Panchayati Raj Institutions, New Delhi: Mittal Publications.

Participatory Planning in Kerala, Economic and Political Weekly, Vol. XXXVII, No.20, 18 May.

Rai, Manoj, et. al. (Eds.) (2001). The State of Panchayats: A Participatory Perspective, New Delhi : Samskriti.

Sanyal, Bikash Mohan. (2001). India: Decentralized Planning: Themes and Issues, New Delhi:

Sundaram, K.V. (2012). Development Planning at the Grassroots. New Delhi: Concept Publishing

Sundaram, V. (1997). Decentralized Multilevel Planning Principles and Practices, Asian and African

Umdor, Sumardin, (2009) Decentralised Planning in the Sixth Scheduled Area of India (A Study of

ELECTIVE COURSE: PGES 11528 - GEOGRAPHIES OF DEVELOPMENT**Course Learning Outcomes**

- CO1. Critically analyze the idea of development
- CO2. Evaluate theories and approaches to development
- CO3. Measure and analyze various aspects of development
- CO4. Critically evaluate through theories and concepts, case studies at different scale.

Module 1: The Concept of Development: Meaning and definitions; History of development - Colonization, nationalism, state oriented development, neoliberalism, globalization and development.

Module 2: Approaches to Development: Economic Development, Sustainable Development, Decentralized Development, Alternative Development.

Module 3: Measuring Development; Variables and Indices; Economic growth, Human development, Gender Development, Happiness index and their Spatial pattern.

Module 4: Development in Practice - Global, National, Regional and Local Case Studies.

ELECTIVE COURSE: PGES 11528 - GEOGRAPHIES OF DEVELOPMENT**Credits: 4****Faculty Member/s:**

CO	CO Statement	PO/ PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO1	Critically analyze the idea of development	PO1, PSO2	An	Co	06	00	Assignment on Development discourses
CO2	Evaluate theories and approaches to development	PO3, PSO2	Ev	Co	10	00	Discussions and tutorial
CO3	Measure and analyze various aspects of development	PO3, PSO4	An	Pr	10	00	Assignment
CO4	Critically evaluate through theories and concepts, case studies at different scale.	PO2 & 4, PSO6	Ev	Pr	6	00	Assignment based on field study on a particular theme

Reading list

Amartya Sen Development as Power M. Rethinking Development Geographies
Wills (2011) . Theories of practices of Development

Desai, V. and Potter, R. (Eds). 2014. The Companion to Development Studies, 3rd Edition, London and New York: Routledge (Paperback)

Escobar, Arturo, “Imagining a Post-Development Era? Critical Thought, Development and Social Movements”, Social Text, No. 31/32, Third World and Post-Colonial Issues (1992), pp. 20-56.

Mark boyle (2015) Human Geographty a concise introduction

Peet Rihcar. Theories of Development

Porter, P., Faust, D and Nagar, F. 2009. A World of Difference: Encountering and Contesting Development. New York: The Guilford Press.

Potter et al. 2008. Geographies of Development

Seligson, M and Passe-Smith, J. (Eds.) 1998. Development and Underdevelopment, 2ndEdition. Boulder and London: Lynne Rienner Publishers.

UNDP Reports

World Banks Reports

ELECTIVE COURSE: PGES 11529 - GEOGRAPHY OF WORLD ECONOMY

Course Learning Outcomes

- CO1.** Understand spatial changes brought about by the flow of capital and goods across national borders
- CO2.** Interpret inequality in terms of spatial patterns of change and its political implications
- CO3.** Determine spatial patterns emerging from non-economic changes (wars, epidemics, migration, civil conflicts)
- CO4.** Analyze structural transformation brought about by global flow of capital
- CO5.** Differentiate malign and benign forces in productions systems across world economies
- CO6.** Design policy responses to the resultant divergent income groups due to rapid economic growth in developing nations

Course Content:

Module 1: Historical evolution of nature-society relations in globalizing economy - and Geographical dynamics of accumulation in the era of liberalism and neo-liberalism – Globalization and new economic spaces - Synthesize and apply principles from economic geography to political and cultural dynamics of globalization.

Module 2: Globalization of Production Systems: Evolution of trans-national corporations, patterns and processes of Globalization, spatial organization of finance, global office and informational economy.

Module 3: Spatial transformation of core and periphery-transformation of the periphery, forms of agricultural reorganization in the periphery, agri-business and agro marketing, formation of new industrial regions – EPZs and SEZs as engines of economic growth – merits and demerits.

Module 4: Spatial Outcomes of Economic Integration, Regions and Localities in the World Economy-International and supranational institutional integrations, significance of regional integration as a strategy for the development of periphery.

Faculty Members:

CO	CO Statement	PO/PSO	CL	KC	Class Sessions/ Tutorial Hrs.	Lab/ Field Hrs.	Assessment
CO 1	Understand spatial changes brought about by the flow of capital and goods across national borders	PO1 PSO1	Re Un	Co	12	00	Assignment: Book review
CO 2	Interpret inequality in terms of spatial patterns of change and its political implications	PO1 PO2 PSO1 PSO5	Un An	Co	08	04	Assignment: Tutorial
CO 3	Determine spatial patterns emerging from non-economic changes (wars, epidemics, migration, civil conflicts)	PO1 PO3 PSO1 PSO2 PSO4	An, Ev	Fa Co Pr	04	08	Assignment: Review reports and articles
CO 4	Analyze structural transformation brought about by global flow of capital	PO1 PO2 PSO1 PSO2 PSO4	An Ev Cr	Co Pr	06	06	Assignment: Tutorial
CO 5	Differentiate malign and benign forces in productions systems across world economies	PO1 PO3 PSO1 PSO4	Un An Ev	Co Pr	02	10	Assignment: Field work
CO 6	Design policy responses to the resultant divergent income groups due to rapid economic growth in developing nations	PO2 PO3 PSO2 PSO4 PSO5	An Ev Cr	Co	02	10	Assignment: Report writing and presentation

Essential Reading:

Banerjee – Guha Swapna, 2004: Space, Society and Geography, Rawat Publication, Jaipur and New Delhi

Banerjee – Guha, Swapna 1997, Spatial Dynamics of International Capital, Orient Longman

Banerjee- Guha, S. 2004, Space, Society and Geography, Rawat, New Delhi

Banerjee- Guha, Swapna 2010, Accumulation by Dispossession- Transformative Cities in The New Global Order, Sage, New Delhi.

Banerjee-Guha, Swapna. "Critical Geographical Praxis: Globalisation and Socio-Spatial Disorder." Economic and Political Weekly 37, no. 44/45 (2002): 4503-509.

Brakman Steven, Garretsen Haerry and Warrewijk Van Charles, 2009; The New Introduction to Geographical Economics, Cambridge University Press, UK. 24

Bryson John, Henry Nick, Keeble David and Martin Ron, (Eds.), 1999: The Economic Geography Reader – Producing and Consuming Global Capitalism, John Wiley and Sons Ltd., New York

Castree Noel, Coe M Neil, Ward Kevin and Samers Michael, 2004: Spaces of Work: Global Capitalism and The Geographies of Labour, Sage, London

Desai Vandana and Potter B. Robert 2011: The Companion to Development Studies, A Hodder – Viva Edition, London

Knox Paul, Agnew John and McCarthy Linda, 2008: The Geography of the World Economy, Hodder Education, UK

Liemt Van Gijbert (1992): Industry On The Move – Causes And Consequences Of International Relocation In The Manufacturing Industry, International Labour Office, Geneva

Power Marcus, (2003), Rethinking Development Geographies, Routledge, London

Raju Saraswati, Satishkumar M., Corbridge Stuart, 2006, Colonial and Post-Colonial Geographies of India, Sage, New Delhi.

Schuz Michael, Soderbaum Fredrick and Ojendal Joakim, 2011: Regionalization in a Globalizing World, Zed Books, London And New York.

Scott J Allen, (2006): Geography and Economy – The Clarendon Lecture in Geography and Environmental Studies, Clarendon Press, Oxford, New York

Sheppard Eric and Barnes Trevor J., 2000, A Companion to Economic Geography, Blackwell, Massachusetts

Wood Andrew and Roberts Susan, 2011: Economic Geography - Places, Network and Flows, Routledge, London And New York

Yeung, Henry Wai-chung. "The Limits to Globalization Theory: A Geographic Perspective on Global Economic Change." Economic Geography 78, no. 3 (2002): 285-305. doi:10.2307/4140811.

ELECTIVE COURSE: PGES 11530 - POLITICAL ECOLOGY

Course Learning Outcome

CO1. Understand concepts-theories in political ecology

CO2. Critically understand nature society relationship

CO3. Analyses the role of political organisation in shaping environmental concerns

CO4. Analyse popular social movements and conflicts associated to environmental degradation.

Course Content:

Module: 1

Political Ecology key concepts and debates; Nature as social construction. Historic understanding of nature

Module: 2 Theorizing nature-society-Political Economic relationships

Module: 3: Role of organisations for environment planning and conservation; The State, International Organisations and Inter-governmental Panels, ENGOs: Environmental Negotiations and Conflicts.

Module: 4. Environmental movements; Environment and Social justice; Grassroots movements and struggles. Political alliances from the below; Community Environmental Practices; Global, National and Local Case Studies

Faculty Member/s:

CO	Course Outcome	PO/PSO	CL	KC	Class sessions (approx) (Hrs.)	Lab session/ Field visits (Hrs.)	Assessment task
CO1	Understand concepts-theories in political ecology	PO1, PSO1	Un	Co	12	0	Book reviews, Documentaries Discussion and tutorial assignment
CO2	Understand critical theories and themes related to nature and environment	PO1, PSO1	Un	Co	12	0	Discussion and debates
CO3	Analyse the role of political organisation in shaping environmental concern	PO1, PSO4,	An	Pr	12	0	Discussion and debates, Field visits
CO4	Analyse popular social movements and conflicts associated to environmental degradation.	PO1, PSO1	Un	Co	10	0	Tutorial assignment and presentation

Reading items

- Adams, W.M. 2008. Green Development: environment and sustainability in a developing world. Routledge. London (3rd edition)
- Adams, W.M. 2004. Against Extinction. Earthscan.
- Botkin, D. B. (1990). Discordant harmonies. A new ecology for the twenty-first century. Oxford, UK: Oxford University Press.
- Bryant, Raymond L. and Sinead Bailey. 1997. Third World Political Ecology. Routledge.
- Castree, N. 1995. The nature of produced nature: materiality and knowledge construction in Marxism. *Antipode* 27, 12-48
- Clewell, A. F., & Aronson, J. 2007. Ecological Restoration: Principles, Values, and Structure of an Emerging Profession. Island Press, Washington, DC
- Eugene Odum. . Fundamental of Ecology (Fifth edition)
- Harvey, David .2005. A Brief History of Neoliberalism. Oxford: Oxford University Press.
- J. O'Connor .1994. 'Is Sustainable Capitalism Possible?'
- Le Billon, P. 2015 Environmental Conflict. In Perreault, Bridge and McCarthy (editors), 2015. The Handbook of Political Ecology, London: Routledge 598-608
- Mitchell, Timothy 2009. Carbon democracy. *Economy and Society*, 38(3): 399-432.
- Peet, R. and Watts, M.J. 1996. eds. Liberation ecologies: environment, development, social movements. Routledge:
- Peet, R., Robbins, P., Watts, M. 2010. Global nature. Global political ecology, Routledge,.
- Ribot. J .2010. 'Vulnerability does not fall from the sky', in R. Mearnsed.
- Robbins P. 2000., 'The Practical Politics of Knowing: State Environmental Knowledge and Local Political Economy', *Economic Geography* 76(2): 126-144.
- Robbins, P. 2012. Political versus apolitical ecologies. *Political ecology: A critical introduction* (2nd edition), John Wiley & Sons, 11---24.
- Walker, Peter .2005. Political ecology: Where is the ecology? *Progress in Human Geography*.

ELECTIVE COURSE: PGES 11531 - SOCIAL AND CULTURAL GEOGRAPHY

Course Learning Outcome

CO1. *Locate the sub discipline of Social and Cultural Geography within the discipline*

CO2. *Critically understand the key concepts of Social and Cultural Geography*

CO3. *Demonstrate knowledge of key methods in analysing cultural geography*

CO4. *Apply concepts and evaluate emerging issues in contemporary cultural context*

Module 1: Morphology of landscape and its critique, New Cultural Geography and its critique, recent trends.

Module 2; Concepts in social and cultural geography:. Caste, Class, Gender, Sexualities, Race, Ethnicity; Culture, Politics, Power, Cultural Politics, Critical infrastructure, Ideology, Hegemony, Identity, Space and Place.

Module 3: Doing Cultural Geography: Iconography, Reading landscapes, Photography and Films.

Module 4: Issues: Regionalism, Nationalism and Globalisation; Migration and identity; Tourism and landscape; Cultural politics of Caste, Gender, Sexuality & Religion, Migration & Identity

Faculty Member/s:

CO	Course Outcome	PO/PSO	CL	KC	Class sessions (approx.) (Hrs.)	Lab session/ Field visits (Hrs.)	Assignment task
CO1	Locate the sub discipline of Social and Cultural Geography within the discipline	PO1, PSO2	Un	Co	14	0	Reading, Tutorial assignment and discussion
CO2	Critically understand the key concepts of Social and Cultural Geography	PO1, PSO3	An	Co	12	0	Reading, Tutorial assignment and discussion
CO3	Demonstrate knowledge of key methods in analysing cultural geography	PO2, PSO4	An & Ap	Pr	10	0	Short field assignments
CO4	Apply concepts and evaluate emerging issues in contemporary cultural context.	PO1, 2 & PSO1, 2, 3 & 6	Ev	Pr	8	0	Assignments

Essential Readings:

- Ahmad, A. 1999. Social Geography, Rawat Publication, New Delhi, 2019
- Ahmed, A. 1993. (ed) Social Structure and Regional Development: A Social Geography. Perspective, Rawat Publications, Jaipur
- Anderson, K. Domosh, M., Pile, S., Thift, N (eds). 2002. Handbook of Cultural Geography. Sage
- Cosgrove Denis (1984) Social Transformation and Symbolic Landscape, Croom Helen, London.
- Crang, Mike. 1998. Cultural Geography, Routledge, London
- Feasibility reports. By KILA
- Pannikar, K.M. 1959. Geographical Factors in Indian History, Bharatiya Vidya Bhavan, Bombay
- Pannur writings. Africa in Kerala. Ente Hridathile Adivasi
- Personality of India
- Rachel, Pain. (eds). Introducing Social Geographies, Arnold Hodder group, London & Oxford University Press
- Raza, M. and Ahmed, A. 1990. An Atlas of Tribal India, Concept Publishing Co, Delhi.
- Robertson Iaian and Penny Richards, .2003. Studying Cultural Landscapes, Oxford University Press, London and New York.

Said, E. 1993. Culture and Imperialism, Alfred Knopf, New York

Sauer, C. O. 1925. The Morphology of Landscape. University of California Publication, Geography

Singh, K.S. 1993. People of India Vol I to XI, Oxford University Press, New Delhi

Sopher, D. (ed.) 1980. An Exploration of India: Geographical Perspectives on Society and Culture, Cornell Press, New York.

Tribes and Caste in South India

Tribes of Kerala. AAD. Loiz

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