

P.G. 4th SEMESTER SYLLABUS
DEPARTMENT OF GEOGRAPHY
COTTON UNIVERSITY

Paper Code: GPH1001C

Paper Title: Contemporary issues in Human Geography

Total Credits: 4, (L+T+P, 3+1+0)

No. of Lectures: 48

Unit	Content	No. of lectures
1	Human geography: changing nature, issues and debates; social theory in human geography.	8
2	Conceptualizing space and place: structure and dynamics of space; relational framework of space and place; sense of place.	8
3	Geography of difference and exclusion: geographies of identity and difference related to class, religion, caste, gender and location.	10
4	Social justice and political geography of difference.	4
5	Geography of social action and movements: reasons and approaches to social movements; aspects of social security; social-environmental movements in india.	10
6	Social and ethnic diversity in North East India – Social groups, tribes, religion and social tensions.	8

Reading List:

- Agnew, J. A. and Corbridge, S., 1995: *Mastering Space: Hegemony, Territory and International Political Economy*, Routledge, London.
- Benko, G. and Strohmayr, U., 1997: *Space and Social Theory: Interpreting Modernity and Postmodernity*, Blackwell Publishers, Oxford, London.
- Bhabha, H., 1994: *The Location of Culture*, Routledge, London and New York.
- Cloke, P. et al, 2005: *Introducing Human Geographies*, Hodder Arnold, UK
- Dear, M.J and Flusty, S, 2002: *The Spaces of Postmodernity, Readings in Human Geography*, Blackwell Publishers, Great Britain.
- Derek, G., Martin, R., and Smith, G., 1994: *Human Geography: Society, Space and Social Science*, Macmillan Publishers, Cambridge.
- Dikshit, R.D, 1997: *Geographical Thought A Contextual History of Ideas*, Prentice Hall India Learning Pvt. Ltd
- Harvey, D., 1996: *Justice, Nature and Geography of Difference*, Blackwell Publishers, Cambridge.
- Johnston, R. J., 1991: *A Question of Place: Exploring the Practice of Human Geography*, Blackwell Publishers, Cambridge.
- Massey, D., 1998: *Space, Place and Gender*, Polity Press, Cambridge.
- Massey, D., Allen, J., and Sarre, P., 1999: *Human Geography Today*, Blackwell Publishers, Cambridge.

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- Redcliff, M., and Benton, T., 1994: *Social Theory and Global Environment*, Routledge, London and New York.
- Sibley, D., 1995: *Geographies of Exclusion: Society, and Difference in the West*, Routledge, London.

Paper Code: GPH1002SP1

Paper Title: Modern Cartographic Techniques

Total Credits: 5 (L+T+P, 2+1+2)

No. of lectures: 32

Sl. No.	Content	No. of lectures
1	Development of computer assisted cartography/ digital cartography; map as data model, maps and data processing systems, maps and geometry, positional cartographic objects of zero, one two and three dimensions.	5
2	Data structure for modelling geographic reality: vector data – geometric, topological and feature components, data hierarchy and encoding, modelling of surfaces and solids; raster data model and TIN model – characteristics, use, relative advantages and disadvantages	5
3	Data sources, characteristics and cartographic uses: ground survey and global positioning systems, aerial photography, remote sensing, census; cartographic use, advantage and disadvantages of - digital cartographic databases of various agencies in U. S. A. and India, thematic databases, digital elevation data (GLOBE, GTOPO30, SRTM) from various sources	6
4	Data processing and analyzing system: GIS – components, structure and functions. database management functions; data entry, edit, validation, manipulation and analysis functions; data display and cartographic outputs; mapping of statistical data using GIS tools	6
5	Data processing and analyzing system: Digital Image Processing (DIP) – Image enhancement functions, band ratios – NDVI and soil moisture index; Image classification techniques	5
6	Cartographic abstraction, symbolization of feature attributes – point, line, area and volume. basic mapping techniques; understanding display colour models by electronic devices; basic consideration of colour and pattern use in map design; typography and lettering the map – functions and positioning guidelines	5
7	Practical: Use of SRTM data for profiling and contour mapping; (ii) Construction of DEM from topographical map. Digital vector mapping and representation of political boundaries, transport and communication lines, market centres, towns and district headquarters etc.; (ii)	2 credit

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	Any three thematic maps using vector polygons of given areas. LU/LC map and (ii) NDVI Computation and mapping from IRS data /LANDSAT data using standard DIP software. Drawing of cartograms using GIS tools/ manual drawing; (ii) Visual interpretation of satellite data.	
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Reading list:

- *American Society of Photogrammetry*, 1960: Manual of Photographic Interpretation, Banta Publishing Co., Menasha, Wisconsin.
- Anderson, J. R., et al., 1976: *A Landuse / Landcover Classification System for Uses with Remote Sensing Data*, USGS Professional Paper.
- Avery, T. E., 1963: *Interpretation of Aerial Photography*, Burgess Publishing Co., Minneapolis.
- Cromely, R. G., 1992: *Digital Cartography*, Prentice Hall Inc., Engle Wood Cliffs, New Jersey.
- Curtis, H., 2000: *The GPS Accuracy Improvement Initiative*, GPS World, June, 2000.
- Gopi, S., 2005: *Global Positioning System Principles and Applications*, Ta McGraw Hill, New Delhi.
- Jensen, J. R., 2011: *Remote Sensing of the Environment – An Earth Resource Perspective*, 3rd Impression, Pearson, New Delhi.
- Robinson, A. H.; Morrison, J. L.; Muehrcke, P. C.; Kimerling, A. J. And Guptill, S. C., 1995: *Elements of Cartography*, John Wiley & Sons Inc, New York.

Paper Code: GPH1002SP2

Paper Title: Agricultural Geography of India

Total Credits: 5 (L+T+P, 2+1+2)

No of Lectures: 32

Units	Content	No. of lectures
1	Place of Indian agriculture: in global economy, type, characteristics, growth, distribution and development; Critical appreciation of large scale and small scale agriculture, Agricultural regions of India and their characteristics.	8
2	Agricultural land use pattern and shifting cropping pattern in India; Regional variation in the levels of agricultural development in India - Food deficit and food surplus regions; nutritional index.	6
3	Problems of Indian agriculture: crop and cropping hazards, sustainability of agricultural practices and production	6
4	Contemporary Issues of Indian agriculture: Food, nutrition and hunger, food security, food aid programmes; environmental degradation; role of irrigation, fertilizers, insecticides and pesticides, technological know-how.	6

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5	Agriculture in North East India – Agriculture as an economic basis of North East India; major food crops and cash crops produced; problems and prospects of agriculture in North East India with special reference to Assam	6
6	Practical: Agricultural regionalization: linkage method and composite index method, Crop diversification, intensity of cropping: Index of cropping intensity, Composite index of agricultural development. Intensity of cropping in various districts of Assam.	2 credit

Reading list:

- Bayliss Smith, T. P., 1987: *The Ecology of Agricultural Systems*. Cambridge University Press, London.
- Berry, B. J. L. et. al., 1976: *The Geography of Economic Systems*. Prentice Hall, New York, 1976.
- Brown, L.R.: *The Changing World Food Prospects - The Nineties and Beyond*. World Watch Institute, Washington D.C., 1990.
- Das, M. M., 1984: *Peasant Agriculture in Assam: A Structural Analysis*, InterIndia Publications, New Delhi.
- Dyson, T.: *Population and Food - Global Trends and Future Prospects*. Routledge, London, 1996.
- Singh, J. and Dhillon, S.S.: *Agricultural Geography*, Tata McGraw Hill Pub., New Delhi, 1988.
- Sukla, S. P. and Agarwal, A.K.: *Agriculture in North East India*.
- Whittlesey, D., 1936: *Major Agricultural Regions of the World*, Annals of the Association of American Geographers, 26.

Paper Code: GPH1002SP3

Paper Title: Channel Form and Processes

Total Credits: 5(L+T+P=2+1+2)

No of Lectures: 32

Unit	Content	No. of lectures
1	River channel processes-forces acting in channel, velocity distribution, types of flow and their characteristics; erosion, deposition, and transportation of sediment in channel, grain size analysis of sediment.	6
2	Channel form - the longitudinal profile, grade, plan geometry, channel pattern-straight, meandering and braided, initiation and development of meandering channels, geometry of meanders, flow in meanders, mechanics and causes of braiding.	6
3	Cross sectional form, hydraulic geometry analysis, variation in hydraulic characteristics at-a-station, and in a downstream direction.	5

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4	Fluvial landforms - processes and pattern of development of flood plain, alluvial fan and delta.	5
5	Channel changes in time and over space. Fluvio – geomorphic hazards: flood and bank erosion, sedimentation, landslides and soil erosion with special reference to North East India.	5
6	Effects of man on channel processes - Dam and reservoir construction, channel straightening, bank stabilization, sand and gravel extraction.	5
7	PRACTICAL: Discharge hydrograph, stage –discharge relationship, frequency analysis of hydrologic event (flood / rainfall) by – (a) plotting position, (b) log-pearson type-iii distribution and gamble’s extreme value distribution. identification and mapping of straight, sinuous, meandering and braided channels in satellite imagery or aerial photographs / topographical maps, computation of sinuosity index, braiding index and longitudinal profile of river, width versus discharge, depth versus discharge and velocity versus discharge relationships from empirical data, identification and mapping of fluvial landforms in satellite imagery or aerial photographs / topographical maps	2 credit

Reading list:

- Chorley, R. J. (ed), 1969: *Water, Earth and Man*, Methuen, London.
- Garde, R. J. and RangaRaju, K.G.: *Mechanism of Sediment Transportation*.
- Goudie, Andrew, et. Al. (eds), 1981: *Geomorphological Techniques*, George Allen & Unwin
- Gregory, K. J. and Walling, D. E., 1973: *Drainage basin Form and Processes*,
- King. C. A. M., 1966: *Techniques in Geomorphology*, Edward Arnold, London. Unwin, London.
- Leopold, Wolman and Miller, 1964: *Fluvial Processes in Geomorphology*, W. H. Freeman and Company, San Francisco.
- Morisawa, M., 1968: *Streams: Their Dynamics and Morphology*, McGraw Hill Book Company, New York.

Paper Title: GPH1002SP4

Paper Title: Principles & Application of GIS & GPS

Total Credits: 5 (L+T+P=2+1+2)

No of Lectures: 32

Unit	Content	No. of lectures
1	Geographical Information Sciences – a brief history; Definitions of GIS, Components of a GIS; Data models and their use; Referencing systems and earth models and geodetic aspects.	5

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2	Database structure and their organization in computer, Database Management Systems; Spatial data structures – the choice between vector and raster; Data input, verification, storage and output.	6
3	Creating continuous surfaces from point data; Methods for interpolation; Digital elevation models and their uses; Map overlays- arithmetic and weighted overlays.	6
4	Spatial analysis and operations: The basic classes of operations for spatial analysis; Operations on the attributes of geographic entities.	5
5	Introduction to GPS and its working principles – satellite position, ranging, time calculation, GPS errors and their corrections, GPS Receivers and its features, DGPS working principles, Accuracy in DGPS.	4
6	GPS surveying methods – absolute positioning and relative / differential positioning, static surveying and kinematic surveying; Real time kinematic (RTK) surveying; Topographic mapping and GIS applications for GPS / DGPS.	6
7	<p>Practical:</p> <ul style="list-style-type: none"> -Georeferencing of Raster map / image and Coordinate transformation; (ii) Vector data creation and editing and presentation of thematic outputs -Point attribute mapping by (i) continuous raster grids and (ii) TIN; Line attribute mapping by (iii) continuous raster grids and (iv) TIN -Geoprocessing / Proximity analysis (i) point buffering, (ii) line buffering; (iii) Raster Overlays of two or more layers; (iv) Thematic mapping of polygon attributes (any two) and their raster conversions -GPS / DGPS coordinates mapping by using database / text files Surveying by GPS / DGPS for topographic mapping; (ii) Mapping of location based services / events by GPS/DGPS. 	2 credit

Reading list:

- Burrough, P. A., 1986: *Principles of Geographical Information Systems in Land Resources Assessment*, Clarendon Press, Oxford
- Burrough, P. A. and McDonnell, R. A., 1998: *Principles of Geographical Information Systems*, Oxford University Press, Oxford.
- Curtis, H., 2000: *The GPS Accuracy Improvement Initiative*, GPS World, June, 2000.
- Chrisman, N., 1997: *Exploring Geographic Information Systems*, John Wiley & Sons Inc.,
- De Mars, M. N., 1999: *Fundamentals of Geographic Information Systems*, John Wiley & Sons Inc., New York.
- Gopi, S., 2005: *Global Positioning System Principles and Applications*, Tata McGraw Hill, New Delhi.
- Kraaak, M. and Ormelling, F., 2004: *Cartography Visualization of Geospatial Data*, Pearson Education, Delhi.

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Paper Title: GPH1002SP5

Paper Title: Regional and Global Perspective of Development

Total Credits: 5 (L+T+P=2+1+2)

No of Lectures: 32

Unit	Content	No. of lectures
1	The concept of development, development indicators: per capita income, energy and demographic indicators	6
2	Theories of under development: Marxist, Centre-periphery and Dependency theories, Regional development perspectives in Netherland and Italy, Social dimensions of regional development	8
3	Patterns of world economic development: agricultural, industrial, commercial and technological, Planning for problem areas in India: tribal sub-plan, drought prone areas, Approaches to mapping of Indian economic development: development-index approach, consensus approach, subjective integration approach	8
4	Urban renaissance of 1990s in UK, Urban revitalization in United States: Policies and practices, Africa's political and social development issues	6
5	Sustainable development: objectives, strategies and possibilities, Development and globalisation	4
6	<p>Practical:</p> <ul style="list-style-type: none"> - Regionalisation using methods of: (a) Overlapping of different themes (b) Ranking using mean and standard deviation. - Use of disparity index - mapping development of Indian states using HDI measures - Distribution of economic activities and settlements. - Network analysis: Application of aggregate connectivity for regional Development using (a) alpha, beta, gamma and cyclomatic number and (b) Use of Accessibility and Detour Index 	2 credit

Reading List:

- Barua, P. C., 1990: *Development Planning of North East India*, Mittal Publications, New Delhi.
- Boaduo, N. A.-P. (2008). *Africa's Political, Industrial and Economic Development Dilemma in the Contemporary Era of the African Union*. *The Journal of Pan African Studies* , 93-106.
- Chand, M. and Puri, V. K. 1993: *Regional Planning in India*, Allied Publishers Limited, B/M Asraf, Ali Road, New Delhi-110002.
- Chandna, . R. C., 2000: *Regional Planning: A Comprehensive Text*, Kalyani Publishers, New Delhi.

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- Friedman, J. and William Alonso (eds), 1964: *Regional Development and Planning*, Cambridge, Mass. M.I.T. Press.
- Friedman, J., 1973: *Utilization, Planning and National Development*, Bererly Hills, Sage Publications.
- Kidwai, A. H., 1985: *Disparities in the Levels of Regional Development and Spatial Differentiation in India in the Historic Context*, CSRD, JNU, Mimeo.
- Lawal, G. (2006). *Global and Development: The Implications for the African Economy*. *Humanity & Social Science Journal* , 65-78.
- Macinonis, and Parrillo, 2010: *Cities and Urban Life*, PHI Learning Pvt. Ltd., New Delhi.
- Mishra, R.P., 1992: *Regional Planning Concepts*, Techniques, Policies and Case Studies, New Delhi. Concept Publishing Company
- Mukherjee, A., 1993: *A Perspective Plan for a Hill District, Heritage*, New Delhi.
- Sandesara, J. C., 1992: *Industrial Policy and Planning, 1947-91: Tendencies, Interpretations and Issues*, Sage Publications, New Delhi.
- Sivaramakrishnan, K. C., et al., 2005: *Handbook of Urbanization in India – an Analysis of Trends and Processes*, OUP, New Delhi.
- Snallenbrock, A. J. H. and Spit, T. J. M., 1992: *Regions and Regionalization in the Netherlands*, TijdschriftVoor, Econ. En. Soc. Geografie. 82 (3).
- Sutton, D. S. (2008). *Urban Revitalization in the United States: Policies and Practices, Final Report*. Seoul National University: USURRP.

Paper Code: GPH1002SP6

Paper Title: Social Geography of India

Total Credits: 5 (L+T+P= 2+1+2)

No of Lectures: 32

Unit	Content	No. of lectures
1	Social differentiation and region formation, social structure and social stratification as reflected in race, tribe, caste, language, dialect and religion in India; Indian unity and diversity.	4
2	Social evolution in India: The pre-history and historic scene with special reference to the Janapadas of ancient India and the Mughal Subahs. Social change in India: effects of sanskritization, westernization and modernization.	6
3	Social well-being: Concepts of social well-being, physical quality of life, Human development; measurement of human development with social, economic and environmental indicators; Rural urban disparity in India with respect to health care; education and shelter; deprivation and discrimination issues relating to women and underprivileged groups	8

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4	Public policy and social planning in India: review of five year plans and area plans towards social policy in India; strategies to improve social well-being in tribal, hill, drought and flood prone areas; social and environmental impact assessment of development projects.	8
5	Geographical diversity in social composition, problems of identity consciousness, questions of regionalism and nationalism in contemporary North-East India, cultural diversity in North-east India: Bases of cultural diversity-race, religion and language. Ethnic groups and tribal groups of North-East India	6
6	Practical: Social Survey Methods, Social area analysis by composite 'Z' score, Social interaction and diffusion patterns, Diversity Index (Simpson's Method), Distribution and concentration pattern among social groups (India/N.E. India/Assam), disparity mapping of population characteristics and social well-being, world distribution of races, religious hearths, migration of population	2 credit

Reading list:

- Ahmad, A., 1999: *Social Geography*, Rawat Publication, Jaipur and New Delhi.
- Ahmad, A. (ed), 1993: *Social Structure and Regional Development: A Social Geography perspective*, Rawat Publication, Jaipur.
- Noble, A. G. and Dutta, A. K. (eds): *India: Cultural Pattern and Processes*, West View Press, Colorado.
- Srinivas, M.N., 1986: *India: Social Structure*, Hindustan Publishing Corporation, Delhi.
- Pecion, M., 1987: *Social Geography: Process and Prospect*, Croom Helm, London.
- Smith, D.M., 1977: *Human Geography: A Welfare Approach*, Edward Arnold, London.
- Sopher, D.E.(ed): *An Exploration Of India: Geographical Perspectives on Society and Culture*, Longman, London

Paper Code: GPH1003OP1

Paper Title: Environmental Geography

Total Credits: 4 = 3+1+0

Paper Code: GPH1004DPW

Paper Title: Dissertation & Project Work

Total Credits: 6
