Semester III

Jharkhand, NEP, FYUGP 2022 onwards			
COURSES OF STUDY FOR FOUR YEAR UNDERGRADUATE PROGRAMME 2022 onwards for GEOGRAPHY			
Table 6: Semester wise Course Code and Credit Points:			
Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		
	Code	Papers	Credits
III	AEC-3	Language and Communication Skills (MIL-2 Modern Indian Language including TRL)	02
	SEC-3	Skill Enhancement Course-3	03
	MDC-3	Geography: An Introduction	03
	MN-1B(Theory)	Geospatial Information	03
	MN-1B(Practical)	Fundamentals of Remote Sensing	01
	MJ-4(Theory)	Introduction to Global Economic System	03
	MJ-5(Theory)	Environment and Natural Resource Management	03
	MJ-3(Practical)	Cartographic Techniques	02

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MN-1B Geospatial Information Technology (Theory)

Credit 3 Hours 45
Full Marks 75 Passing Marks 30

Learning Outcomes:
After the completion of course, the students will have ability to:
1. Appreciate the basic concepts and historical development of geographical information technology

2. Acquire knowledge on data structure, interpolation, modelling, functions and working of geographical information technology

3. Apply the geographical information technology for sustainable development of the nation

Course Content: Theory Paper		**45 Hrs**
1. Introduction	Definitions, Concept and Historical Development of geospatial technology.	10
2. Web data sources	Registration and projection; Data structures; Data interpolation and modelling, Aerial photogrammetry	15
3. Geospatial Data	Working on spatial information system: Raster and Vector Data	10
4. Application of GIS & Remote Sensing	Information retrieval; Topological modelling; Networks; Overlay; Data output	10

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

References:

1. D. Tomlin., (1990): *Geographic Information Systems and Cartographic Modeling*, Prentice-Hall, Englewood Cliffs, NJ, ISBN 0-13-350927-3.

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9. Samet, H., (1995): *Spatial Data Structures in Modern Database Systems: The Object Model, Interoperability, and Beyond*, W. Kim, Ed., Addison-Wesley/ACM Press, 361-385. http://www.cs.umd.edu/~hjs/pubs/kim.ps

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MN-1B Fundamentals of Remote Sensing (Practical)

Credit 1 Teaching Hours 30
Full Mark 25 Passing Mark 10

Learning Outcomes:

After the completion, of course, the students will have the ability to:
1. Appreciate the strength and application of remote sensing
2. Map the resources, their location and availability
3. Apply this knowledge for sustainable development

Course Content: Practical		30Hrs
1. Functions of Geospatial Information System:	Principles, Types and Geometry of Acrial Photograph; EMR Interaction with Atmosphere and Earth Surface; Satellites – geostationary and remote sensing (Landsat and IRS) and Sensors, Resolution (spatial and temporal).	**15**
2. Image Processing and Data Analysis	Geo-Referencing, Editing and Output, Application of GPS, Sustainable development of Natural Resources	**15**

Note for Assessment:- Final Examination 15 Marks+5 Marks Viva-Voce+5 Marks Practical Note Book=25 Marks

References:

1. Anji Reddy, M. (2008): Textbook of Remote Sensing and Geographic Information System, B.S. Publication, Hyderabad

2. Campbell, J. B., (2007): *Introduction to Remote Sensing*, Guildford Press.

3. Chauniyal, D.D., (2010): *Sudur Samvedanevam Bhogolik Suchana Pranali (Hindi)*, Sharda Pustak Bhawan, Allahabad.

Jensen, J. R., (2004): *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall Inc., New Jersey.

5. Jensen, J.R. (2007): *Remote Sensing of the Environment: An Earth Resource Perspective*, Prentice-Hall Inc., New Jersey.

6. Joseph, G. (2005): *Fundamentals of Remote Sensing*, United Press India.

7. Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet (2019): *Spatial Information Technology for Sustainable Development Goals*, Springer.

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MJ-4 Introduction to Global Economic System

Credit 3 Hours 45
Full Marks 75 Passing Marks 30

Learning Outcome:
After the completion of course, the students will have ability to:
1. Distinguish different types of economic activities and their utilities.

2. Appreciate the factors responsible for the location and distribution of activities.

3. Examine the significance and relevance of theories in relation to the location of different economic activities.

Course Content: Theory Paper		45 Hrs
1. Introduction	Introduction to Global Economic System: Concept and Classification of Economic Activities.	10
2. Primary Activities	Agriculture and major crops Rice, Wheat, Cotton, Sugarcane and Tea, Agricultural Region of the World (Derwent Whittlesey), Von Thunen's Agriculture Location Precision Agriculture, Forestry, Fishing and Mining	15
3. Secondary Activities	Manufacturing (Cotton Textile, Iron and Steel), Concept of Manufacturing Regions, Special Economic Zones and Technology Parks, Weber's Industry location theory.	10
4. Tertiary Activities	Transport, Trade and Services, Impact of Globalisation on development of countries	10

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

References:

1. Alexander, J. W., (1963): Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Bagchi-Sen, S. and Smith, H. L., (2006): Economic Geography: Past, Present and Future, Taylor and Francis.
3. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. (2000): The New Oxford Handbook of Economic Geography, Oxford Press.
4. Coe, N. M., Kelly P. F. and Yeung H. W., (2007): Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
5. Combes, P., Mayer T. and Thisse, J. F., (2008): Economic Geography: The Integration of Regions and Nations, Princeton University Press,

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11. Leong, G.C. & Morgan G.C., (1982): Human and Economic Geography, Oxford Publications
12. Prithwish, Roy (2014): Economic Geography - A study of Resources, New Central Book Agency, Kolkata.
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14. Siddhartha, K., (2013): Economic Geography, Kisalaya Publications Pvt. Ltd., New Delhi.
15. Wheeler, J. O., (1998): Economic Geography, Wiley.
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MJ-5 Environment and Natural Resource Management

Credit 3
Full Marks 75

Hours 45
Passing Marks 30

Learning Outcome:

After the completion, of course, the students will have the ability to:

1. Understand the dynamic interactive relationship between man and environment.

2. Have a sound understanding of distribution, utilization and proper management of natural resources at the global level.

3. Make an assessment and review of planning and policies related to the environment and natural resources.

Course Content: Theory Paper		**45 Hrs**
1. Introduction	**Environment and Natural Resource Management**: Concept, Human-Environment Relationships; Ecosystem: Concept, Structure and Functions	10
Environmental Problems	Tropical, Temperate and Polar Ecosystems, Depletion and Protection of Ozon Layer, Acid Rain, Green House Gases.	15
3. Natural Resource	Concept, Classification, Distribution, Utilisation, Problems and Management of Land, Water, Forests and Energy.	10
4. Natural Resource Appraisal and Conservation of Environment and Natural Resources	Transport, Trade and Services, Impact of Globalisation on development of countries	10

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

References:

1. Chandna, R. C., (2002): Environmental Geography, Kalyani, Ludhiana.

2. Cunninghum, W. P. and Cunninghum, M. A., (2004): Principals of EnvironmentalScience: Inquiry and applications, Tata Macgraw Hill, New Delhi.

3. Goudie, A., (2001): The Nature of the Environment, Blackwell, Oxford.

4. Holechek, J. L. C., Richard, A., Fisher, J. T. and Valdez, R., (2003): Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.

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MJ-03 Cartographic Techniques (Practical)

Credit 2 | Teaching Hours 60
Full Mark 50 | Passing Mark 20

Learning Outcome:
After the completion, of course, the students will have the ability to:
1. Read and prepare maps.

2. Comprehend locational and spatial aspects of the earth's surface.

3. Assess the roles of structure, stage and time in shaping the landforms, interpret geomorphological maps and apply the knowledge in geographical research.

Course Content: Practical		60Hrs
1. Introduction	Nature, Scope and History of Cartography, Techniques in Cartography	15
2. **Scales**	Concept and application; Graphical Construction of Plain, Comparative and Diagonal Scales.	15
3. Map Projections	Classification, Properties and Uses; Conical Projections: One Standard parallel and Two Standard parallel Cylindrical Projection: Mercator's Projections, Zenithal Projection: Gnomonic, Stereographic and reference to Universal Transverse Mercator (UTM) Projection.	20
4. Weather Map	Weather symbols, Representation of atmospheric features, Interpretation of Indian daily weather maps (July, October and January)	10

Note for Assessment: - Final Examination 30 Marks+10 Marks Viva-Voce+10 Marks Practical Note Book=50 Marks

Practical Record: A Project File in pencil, comprising one exercise each, on the scale, map projection,
interpretation of topographic sheet and slope analysis.

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International Cartographic Association.
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Semester –IV

COURSES OF STUDY FOR FOUR YEAR UNDERGRADUATE PROGRAMME 2022 onwards forGEOGRAPHY			
Semester wise Course Code and Credit Points:			
Semester	**Common, Introductory, Major, Minor, Vocational & InternshipCourses**		
	Code	**Papers**	**Credits**
IV	AEC-3	Language and Communication Skills (MIL-2/English-2)	04
	VAC-2	Valuc Added Course-2	02
	MN-2B(Theory)	Rural Development	03
	MN-2B(Practical)	Project Report on Rural Development	01
	MJ-6(Theory)	Geography of India	03
	MJ-7(Theory)	Regional Planning and SustainableDevelopment	03
	MJ-8(Theory)	Evolution of Geographical Thought	03
	MJ-4(Practical)	Fundamentals of Remote Sensing (Practical)	03

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MN-2B Rural Development (Theory)

Credit 3 Hours 45

Full Marks 75 Passing Marks 30

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Appreciate the concepts, needs and various approaches to rural development;

2. Understand the strong economic bases of rural areas of India;

3. Appreciate the area based and target group-based approaches and provision of services to rural development.

Course Content: Practical		45Hrs
1. Defining Development:	Inter-Dependence of Urban and Rural Sectors of the Economy, Need for Rural Development, Gandhian Approach of Rural Development.	10
2. Rural Economic Base	Panchayati Raj System, Agriculture and Allied Sectors, Seasonality and Need for Expanding Non-Farm Activities, Co-operatives, PURA.	10
3. Area and Target Based Approach to Rural Development:	Drought Prone Area Programmes, PMGSY, SJSY, MNREGA, Jan DhanYojana and Rural Connectivity.	15
4. Provision of Services	Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro credit	10

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

References:

1. Anand, Subhash.,(2013): *Dynamics of Rural Development*, Research India Press, Delhi

2. Gilg, A. W., (1985): *An Introduction to Rural Geography,* Edwin Arnold, London.

3. Krishnamurthy, J.,(2000): *Rural Development - Problems and Prospects,* RawatPubls., Jaipur

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8. Ramachandran, H., and Guimaraes, J.P.C., (1991): *Integrated Rural Development in Asia–Leaning fromRecent Experience,* Concept Publishing, New Delhi.

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10. Singh, R.B., (1985): Geography of Rural Development, Inter India, New Delhi.

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MN-2B(Practical) Project Report on Rural Development

Credit 1 Teaching Hours 30
Full Marks 25 Passing Marks 10

Course Content: Practical		**30Hrs**
1.Socioeconomic Development	Introduction to Socio-economic Indicators, and construction of composite indices (Ranking Method based on secondary data)	15
2.Policies and programmes	Critical Review of any latest policy and programme based on field survey	15

Note:-Prepare a project report on any one (based on own choices)

Note for Assessment:- Final Examination 15 Marks+5 Marks Viva-Voce+5 Marks Practical Note Book=25 Marks

Reference

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MJ-06 Geography of India (Theory)

Credit 3 Hours 45
Full Marks 75 Passing Marks 30

Learning outcomes:
After the completion, of course, the students will have the ability to:
1. Understand the physical profile of the country

2. Study the resource endowment and its spatial distribution and utilization for sustainable development

3. Synthesise and develop the idea of regional dimensions.

Course Content:		**45Hrs**
1. Physical:	Location, Physiographic Divisions, Climate characteristics and classification, Soil and Natural Vegetation	10
2. **Population**:	Distribution and Growth, Structure, Social; Distribution of Population by Race, Caste, Religion, Language, Tribes and their Correlates.	10
3. **Economic**:	Mineral and Power Resources; Distribution and Utilization of Iron Ore, Coal, Petroleum, Gas; Agricultural Production of Rice, Wheat, Cotton and Sugarcane; Spatial Patterns of Industrial Development: Automobile and Information Technology	15
4. **Regionalisation of India**:	Physiographic (R. L. Singh), Socio-Cultural (Sopher), Economic (Sengupta)	10

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

References:

1. Deshpande, C. D., (1992): *India: A Regional Interpretation*, ICSSR, New Delhi.
2. Douglas, L. Johnson.,(2009): World Regional Geography, Tenth edition, Pearson Education Inc, New Jersey.
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MJ-07 Regional Planning and Sustainable Development (Theory)

Credit 3
Full Marks 75
Hours 45
Passing Marks 30

Learning outcomes:

After the completion, of course, the students will have the ability to:

1. Identify notable lagging regions and solutions for their overall development
2. Have a comprehensive understanding of the different regions and the application of different models and theories for integrated regional development.
3. Select appropriate indicators for the measurement of socio-economic regional development.

Course Content:		**45Hrs**
1. **Definition of Region, Evolution andTypes of Regional Planning**:	Formal, Functional, and Planning Regions and Regional Planning; Need and types of Regional Planning.	10
2. **Choice of a Region for Planning**:	Characteristics of an Ideal Planning Region, Delineation of Planning Region, Regionalization of India forPlanning (Agro-Ecological Zones)	10
3. **Theories and Models for RegionalPlanning**:	Growth Pole Model of Perroux; Growth Centre Model in Indian Context, Myrdal, Hirschman, Rostow and Friedmann, Village Cluster.	10
4. **Sustainable Development**:	Concept of Development and Underdevelopment, Efficiency-Equity Debate, Definition, Components and Sustainability for Development. Development Indicators (Economic, Social and Environmental), Sustainable Development Policies andProgrammes: Rio+20; Goal-Based Development, Principles of Good Governance.	15

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

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1. Agyeman, Julian, Robert, D. Bullard and Bob, Evans., (Eds.) (2003): Just Sustainability's: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.).

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5. Blij, H. J. De., (1971): Geography: Regions and Concepts, John Wiley and Sons.

6. Chandana R.C., (2013): Pradeshik Niyojan Tatha Vikas, Kalyani Publishers, New Delhi

7. Friedmann, J. and Alonso W. (1975): Regional Policy - Readings in Theory and Applications, MIT Press, Massachusetts.

8. Pathak, C. R. (2003): *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.

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MJ-08 Evolution of Geographical Thought(Theory)

Credit 3 Hours 45
Full Marks 75 Passing Marks 30

Learning outcomes:
After the completion, of course, the students will have the ability to:
1. Distinguish the paradigms in geography discipline through time

2. Understand the geographical thinking in different regions of the world

3. Appreciate the past and future trends of world geography in general and Indian geography in particular

Course Content:		**45Hrs**
1. Paradigms	**Paradigms** in Geography, Early Origins of Geographical Thinking regarding the Classical and Medieval Philosophies.	10
2. **Modern**	Evolution of Geographical Thinking and Disciplinary Trends in Germany,France, Britain, United States of America.	10
3. **Debates**	**Debates** – Environmental Determinismand Possibilism, Systematic and Regional, Ideographic and Nomothetic.	10
4. **Trends**	Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Feminism; Towards Post- Modernism – Changing Concept of Space in Geography, Future of Geography.	15

Note for Assessment: - Final Examination 60 Marks+ Internal Examination 10+ Attendance 5 Marks =75 Marks

References:

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2. Bonnett, A., (2008): *What is Geography*? Sage.

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MJ-04 Fundamentals of Remote Sensing (Practical)

Credit 2 Teaching Hours 60
Full Mark 50 Passing Mark 20

Learning Outcomes:

After the completion, of course, the students will have the ability to:

1. Appreciate the strength and application of remote sensing
2. Map the resources, their location and availability
3. Apply this knowledge for sustainable development

Course Content: Practical		60Hrs
1. Remote Sensing	Definition, Development, Platforms and Types	**15**
2. Aerial Photography and Satellite RemoteSensing:	Principles, Types and Geometry of Aerial Photograph; EMR Interaction with Atmosphere and Earth Surface; Satellites – geostationary and remote sensing (Landsat and IRS) and Sensors, Resolution (spatial and temporal).	**20**
3. Introduction to Image Processing and Data Analysis:	Geo-Referencing; Editing and Output.	**15**
4. Interpretation and Application of RemoteSensing:	Forests Monitoring, Water Resources and Natural hazards, Land use/ Land Cover, Urban Sprawl Analysis.	**10**

Note for Assessment: - Final Examination 30 Marks+10 Marks Viva-Voce+10 MarksPractical Note Book=50 Marks

Practical Record:

A project file consisting of two exercises will be done from aerial photos and satellite images(scale, orientation and interpretation) and 3 exercises on using any Software on the above- mentioned themes.

References:

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