University of Gour Banga

DRAFT

Syllabus for

FOUR-YEAR UNDERGRADUATE (HONOURS/ HONOURS WITH RESEARCH) COURSE IN GEOGRAPHY

UNDER NEP- 2020

Semester (I+II+III+IV+V+VI+VII+VIII)

University of Gour Banga
P.O. – Mokdumpur,
Dist. – Malda
West Bengal
PIN - 732103

Descriptive Type Question pattern

For Major Core (MC) Skill Enhancement Course (SEC) andDiscipline Specific Core (DSC)

Theory (Semester End Written Examination)

Full Marks = 25

(10 Marks x 1 Question) + (5 Marks x 3 Questions)

Question(s) containing 10 marks will be divided into three parts (6+3+1)
Question(s) containing 5 marks will be divided into two parts (3+2)

Internal Assessment

Full Marks = 10

Attendance (4) and Assessment (6)

(As mentioned in the corresponding syllabus)

Practical (Semester End Laboratory based Test)

Full Marks = 15

(07 Marksx 1 Question) + (05Marks x 1 Question) + (03 Marks for Laboratory Note Book & Viva-voce)

Word limits for descriptive type questions (Theory)

10 marks:	600 - 700
5 marks:	300 - 350

Duration of Examination

Theory paper of 25 marks: 2 hours

Practical paper of 15 marks: 2 hours

DETAILED SYLLABUS

SEMESTER-I

Course Type	Course Detail		Credits	Marks
	Theory	Practical		
Major Core (MC)	MC-1A: Geotectonic and Geomorphology (03)	MC-1B: Practical (01)	04	50
	MC-2A: Cartographic Techniques(03)	MC-2B: Practical (01)	04	50
Minor Core (MnC)	MnC-1A: Geotectonic and Geomorphology (03)	MnC-1B: Practical (01)	04	50
Skill Enhancement Course (SEC-1)	SEC-1A Elementary Statistics (02)	SEC-1B Elementary Statistics (01)	03	50
Total			**15**	**200**

Note:
Minor Core (MnC) of this discipline will be opted by other disciplines and students of this discipline will have to opt Minor Core (MnC) from other discipline as per availability of the college and staying within the periphery of University guideline.

MC-1A: Geotectonics and Geomorphology (Theory)

Total Credit	**03 Credits**
Total Marks	**35 Marks**
• Semester End Examination	25 Marks Mode: Written Examination Exam. Duration: 2 Hours Question Pattern: Students have to answer ***One***question carrying 10 marks out of ***Two*** given questions; ***Three*** questions carrying 5 marks each out of given **Six** questions. Question carrying 10 marks will have at least three parts and question carrying 5 marks will have at least two parts
• Internal Assessment	10 Marks Mode: Preparation of assignment on relevant theoretical aspects as directed by the Department

Part 1: Geotectonics

1. Origin of Universe, solar system and Earth (Tidal hypothesis and Big Bang Theory).
2. Earth's tectonic and structural evolution with special reference to geological time scale
3. Earth's interior with special reference to seismology; Isostasy: theory of Airy and Pratt, Isostatic adjustments and distribution of gravity anomalies.
4. Continental Drifting (Alfred Wegener), Palaeo-Magnetism and Seafloor Spreading, Plate tectonics.
5. Earthquake, Folds and Faults and Volcanos.

Part 2: Geomorphology

1. Geomorphology: Nature, Scope and Approaches, Fundamental concepts in Geomorphology: Thornbury
2. Denudation processes (weathering, mass movement and erosion) and resultant landforms,

3. Models on landscape evolution: Davis,Penck, and Hack
4. Development of river networks and landforms on uniclinal and folded structures.
5. Slope development and evolution of slope (Davis and King)
6. Geomorphic processes and landforms: Fluvial, Glacial, Fluvio-glacial, Aeolian, Fluvio-aeolian, Coastal and Karst.

References

1. Bloom, A. L. (2001): Geomorphology - A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges, E. M. (1990): World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W. (2011): Geosystems - An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Kale, V. S. and Gupta A.(2001): Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton, A. D. (1984): Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Selby, M.J. (2005): Earth's Changing Surface, Indian Edition, OUP
7. Skinner, Brian J. and Stephen C. Porter (2000): The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons.
8. Thornbury, W. D. (1969): Principles of Geomorphology, Wiley.

MC-1B:Geotectonics and Geomorphology (Practical)

Total Credit	**01 Credit**
Total Marks	**15 Marks**
• Semester End Examination	15 Marks Mode: Laboratory based Examination Exam. Duration: 2 Hours Question Pattern::Students have to perform ***One*** Practical carrying 7 marks; Another ***One*** Practical carrying 5 marks.3 marks for submission of Laboratory Note Book duly signed by the Teacher followed by the performance in a viva-voce

List of Practical

1. **SOI topographical maps:** Construction and interpretation of relief profiles (serial, superimposed, projected and composite.
2. **Drainage Basin Morphometry:** Delineation of watershed, Stream ordering (Strahlar) and Morphometric analysis: Relative Relief (after Smith), Dissection Index (after DovNir), Average Slope (after Wentworth).

References:

1. Gupta K.K. and Tyagi, V. C., (1992): Working with Map, Survey of India, DST, New Delhi.
2. Kannan, M., Yadav, S. (2022): Practical Geography, Rawat Publications, Jaipur.
3. Khan, Z. A. (1998): Textbook of Practical Geography, Concept Publishing Company, New Delhi.
4. Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar
5. Saha, P.K. and Basu, P. (2009): Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata.
6. Sarkar, A. (2008): Practical Geography: A Systematic Approach, Orient BlackSwan, Kolkata.
7. Sen, P.K. (1989). Geomorphological Analysis of Drainage Basin: An Introduction to Morphometric and Hydrological Parameters, University of Burdwan.
8. Singh, R.L. and Singh, P.B. (2009): Elements of Practical Geography, Kalyani Publishers, New Delhi.
9. Vaidyanadhan, R., Subbarao, K.V. (2014). Landforms of India from Topomaps and Images, Geological Society of India

MC-2A: Cartographic Techniques(Theory)

Total Credit	**03**	**Credits**
Total Marks	**35**	**Marks**
• Semester End Examination	25	Marks Mode: Written Examination Exam. Duration: 2 Hours Question Pattern: Students have to answer ***One*** question carrying 10 marks out of ***Two*** given questions; ***Three*** questions carrying 5 marks each out of given **Six** questions. Question carrying 10 marks will have at least three parts and question carrying 5 marks will have at least two parts
• Internal Assessment	10	Marks Mode: Preparation of assignment on relevant theoretical aspects as directed by the Department)

Cartographic Techniques

1. Introduction to Cartography: Nature, scope and development, elements, and applications.
2. Concept and application of map scale: Plain, comparative, diagonal and Positive Vernier
3. Coordinate systems: Grid, concept of geoid, spheroid, rectangular and geographical coordinate system,
4. Map projections: concept, classification, properties and uses; Concept and significance of UTM projection.
5. Concept of map, components, classifications, importance and uses.
6. Geographical data and Cartograms: Techniques, advantages, and disadvantages of Line, Bar, Dot and Sphere, Proportional circles, Isopleths, and choropleth.

References

1. Anson R. and Ormelling F. J. (1994): International Cartographic Association: Basic Cartographic Vol. Pregmen Press.
2. Gupta K.K. and Tyagi, V. C. (1992): Working with Map, Survey of India, DST, New Delhi.
3. Kennedy, M., Kopp, S. (2001): Understanding Map Projections, Esri Press
4. Mishra R.P. and Ramesh, A. (1989): Fundamentals of Cartography, Concept, New Delhi.
5. Monkhouse F. J. and Wilkinson H. R. (1973): Maps and Diagrams, Methuen, London.
6. Rhind D. W. and Taylor D. R. F. (eds.) (1989): Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
7. Robinson A. H. (2009): Elements of Cartography, John Wiley and Sons, New York.
8. Singh R. L. and Singh R. P. B. (1999): Elements of Practical Geography, Kalyani Publishers.
9. Sarkar, A. (2015): Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

MC-2B: Cartographic Techniques (Practical)

Total Credit	**01**	**Credit**
Total Marks	**15**	**Marks**
• Semester End Examination	15	Marks Mode: Laboratory based Examination Exam. Duration: 2 Hours Question Pattern: Students have toperform***One***Practicalcarrying 7 marks; Another ***One***Practical carrying 5 marks.3 marks for submission of Laboratory Note Book duly signed by the Teacher followed by the performance in a viva-voce.

List of Practical

1. **Map Scale:** Scale conversion: Statement, RF, Graphical (Linear, Comparative, Diagonal, Positive vernier); Enlargement and reduction of scale.
2. **Map Projections:** Cylindrical Equal Area, Mercator's, Simple conical with one standard parallel, Bonne's, Polar Zenithal Gnomonic.
3. **Geographical Data Representation and Interpretation**:Line, Bar, Dot and Sphere, Proportional circles, Isoplethand choropleth.

References

1. Kennedy, M., Kopp, S. (2001): Understanding Map Projections, Esri Press.
2. Kimerling, A.J., Buckley, A.R., Muehrcke, P.C., Muehrcke, J.O. (2011): Map Use: Reading, Analysis, Interpretation, 7th ed, Esri Press.
3. Monkhouse, F.J., Wilkinson, H.R. (1971): Maps and Diagrams: Their Compilation and Construction, 3rd ed (2017 reprint), Alphaneumera-Kolkata. Pearson II,
4. Pearson, F. (1990): Map Projections: Theory and Applications 2nd ed, CRC Press.
5. Robinson, A.H., Morrison, J.L., Phillip, C.M., Kimerling, A.J., Guptill, S.C. (1995): Elements of Cartography, 6th ed, Wiley.
6. Sarkar, A. (2015): Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan Private Ltd.
7. Singh, R.L., Singh, R.P.B. (2008): Elements of Practical Geography, Kalyani Publishers.
8. Vaidyanadhan, R., Subbarao, K.V. (2014): Landforms of India from Topomaps and Images, Geological Society of India.

MnC-1A: Geotectonic& Geomorphology (Theory)

[This will be opted by the students of other disciplines only]

Total Credit	**03**	**Credits**
Total Marks	**35**	**Marks**
• Semester End Examination	25	Marks Mode: Written Examination; Exam. Duration: 2 Hours; Question Pattern: Students have to answer ***One***question carrying 10 marks out of ***Two*** given questions; ***Three*** questions carrying 5 marks each out of given **Six** questions. Question carrying 10 marks will have at least three parts and question carrying 5 marks will have at least two parts.
• Internal Assessment	10	Marks Mode: Preparation of assignment on relevant theoretical aspects as directed by the Department

Part 1: Geotectonics

1. Origin of Universe, solar system and Earth (Tidal hypothesis and Big Bang Theory).
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3. Earth's interior with special reference to seismology; Isostasy: theory of Airy and Pratt, Isostatic adjustments and distribution of gravity anomalies.
4. Continental Drifting (Alfred Wegener), Palaeo-Magnetism and Seafloor Spreading, Plate tectonics.
5. Earthquake, Folds and Faults and Volcanos.

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1. Geomorphology: Nature, Scope and Approaches, Fundamental concepts in Geomorphology: Thornbury

2. Denudation processes (weathering, mass movement and erosion) and resultant landforms,
3. Models on landscape evolution: Davis, Penck, and Hack
4. Development of river networks and landforms on uniclinal and folded structures.
5. Slope development and evolution of slope (Davis and King)
6. Geomorphic processes and landforms: Fluvial, Glacial, Fluvio-glacial, Aeolian, Fluvio-aeolian, Coastal and Karst.

References

1. Bloom, A. L. (2001): Geomorphology - A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges, E. M. (1990): World Geomorphology, Cambridge University Press, Cambridge.
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4. Kale, V. S. and Gupta A. (2001): Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton, A. D. (1984): Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Selby, M.J. (2005): Earth's Changing Surface, Indian Edition, OUP
7. Skinner, Brian J. and Stephen C. Porter (2000): The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons.
8. Thornbury, W. D. (1969): Principles of Geomorphology, Wiley.

MnC-1B:Geotectonics and Geomorphology (Practical)

Total Credit	**01**	**Credit**
Total Marks	**15**	**Marks**
• Semester End Examination	15	Marks Mode: Laboratory based Examination; Exam. Duration: 2 Hours Question Pattern: Students have toperform***One***Practicalcarrying 7 marks; Another ***One***Practical carrying 5 marks.3 marks for submission of Laboratory Note Book duly signed by the Teacher followed by the performance in a viva-voce.

List of Practical

1. **SOI topographical maps:** Construction and interpretation of relief profiles (serial, superimposed, projected and composite.
2. **Drainage Basin Morphometry:** Delineation of watershed, Stream ordering (Strahlar) and Morphometric analysis: Relative Relief (after Smith), Dissection Index (after DovNir), Average Slope (after Wentworth).

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1. Gupta K.K. and Tyagi, V. C., (1992): Working with Map, Survey of India, DST, New Delhi.
2. Kannan, M., Yadav, S. (2022): Practical Geography, Rawat Publications, Jaipur.
3. Khan, Z. A. (1998): Textbook of Practical Geography, Concept Publishing Company, New Delhi.
4. Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar
5. Saha, P.K. and Basu, P. (2009): Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata.
6. Sarkar, A. (2008): Practical Geography: A Systematic Approach, Orient BlackSwan, Kolkata.
7. Sen, P.K. (1989). Geomorphological Analysis of Drainage Basin: An Introduction to Morphometric and Hydrological Parameters, University of Burdwan.
8. Singh, R.L. and Singh, P.B. (2009): Elements of Practical Geography, Kalyani Publishers, New Delhi.
9. Vaidyanadhan, R., Subbarao, K.V. (2014). Landforms of India from Topomaps and Images, Geological Society of India

SEC-1A:Elementary Statistics (Theory)

Total Credit	**02**	**Credits**
Total Marks	**35**	**Marks**
• Semester End Examination	25	Marks Mode: Written Examination; Exam. Duration: 2 Hours; Question Pattern: Students have to answer ***One***question carrying 10 marks out of ***Two*** given questions; ***Three*** questions carrying 5 marks each out of given **Six** questions. Question carrying 10 marks will have at least three parts and question carrying 5 marks will have at least two parts.
• Internal Assessment	10	Marks Mode: Preparation of assignment on relevant theoretical aspects as directed by the Department

1. Concepts and significance of statistics in Geography.
2. Collection of Data: Primary and secondary.
3. Classification and Tabulation of Data: Frequency Distribution (Simple and cumulative) and Diagrammatic representation.
4. Data measurement scales: Nominal, Ordinal, Interval and Ratio.
5. Sampling: Needs, types, and significance. Method of random sampling.
6. Central tendency: Mean, median, mode.
7. Measures of dispersion: range, quartile deviation, mean deviation, standard deviation; coefficient of variation (CV).
8. Correlation and regression: Rank correlation, product moment correlation; linear regression.

References

1. Berry B. J. L. and Marble D. F. (eds.) (1968): Spatial Analysis – A Reader in Statistical Geography, Prentice Hall.
2. Ebdon D. (1977): Statistics in Geography: A Practical Approach.
3. Gupta, S.P. (2003): Statistical Methods (31st Edition), S. Chand & Sons.
4. Hammond P. and McCullagh P. S. (1978): Quantitative Techniques in Geography: An Introduction, Oxford University Press
5. King L. S. (1969): Statistical Analysis in Geography, Prentice-Hall.
6. Mahmood A. (1977): Statistical Methods in Geographical Studies, Concept Publishing Company, Delhi.
7. Pal S. K.(1998): Statistics for Geoscientists, Tata McGraw Hill, New Delhi.
8. Sarkar, A. (2013): Quantitative Geography: Techniques and Presentations. Orient Black Swan Private Ltd., Orient Blackswan Pvt. Ltd, New Delhi
9. Silk J. (1979): Statistical Concepts in Geography, Allen and Unwin, London.
10. Spiegel M., Lindstorm, D. (1999): Statistics, Schaum's Outline Series.
11. Yeats M. (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.

SEC-1B:Elementary Statistics (Practical)

Total Credit	**01**	**Credit**
Total Marks	**15**	**Marks**
• Semester End Examination	15	Marks Mode: Laboratory based Examination; Exam. Duration: 2 Hours Question Pattern: :Students have to perform ***One*** Practicalcarrying 7 marks; Another ***One*** Practical carrying 5 marks. 3 marks for submission of Laboratory Note Book duly signed by the Teacher followed by the performance in a viva-voce.

List of Practical

1. Construction of histogram and frequency curve; measures of central tendency; computation of mean (arithmetic and geometric), median and mode.
2. Measures of dispersions: Mean Deviation, Standarddeviation and coefficient of variation
3. Computation of correlation (Pearson) and Linear regression (Least square method).

References

1. Berry B. J. L. and Marble D. F. (eds.) (1968): Spatial Analysis – A Reader in Statistical Geography, Prentice Hall.
2. Ebdon D. (1977): Statistics in Geography: A Practical Approach.
3. Gupta, S.P. (2003): Statistical Methods (31st Edition), S. Chand & Sons.
4. Hammond P. and McCullagh P. S. (1978): Quantitative Techniques in Geography: An Introduction, Oxford University Press
5. King L. S. (1969): Statistical Analysis in Geography, Prentice-Hall.
6. Mahmood A. (1977): Statistical Methods in Geographical Studies, Concept Publishing Company, Delhi.
7. Pal S. K.(1998): Statistics for Geoscientists, Tata McGraw Hill, New Delhi.
8. Sarkar, A. (2013): Quantitative Geography: Techniques and Presentations. Orient Black Swan Private Ltd., Orient Blackswan Pvt. Ltd, New Delhi
9. Silk J. (1979): Statistical Concepts in Geography, Allen and Unwin, London.
10. Spiegel M., Lindstorm, D. (1999): Statistics, Schaum's Outline Series.
11. Yeats M. (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.