

SHRI GURU RAM RAI UNIVERSITY

(Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017)



Syllabus of MA/MSc. Geography

**Effective from Academic Session
2017-2018**

FINAL COURSE STRUCTURE – TOTAL CREDITS**Core Courses**

Course Code	SEMESTER-1	L-T-P	Credit
MGGC101	Geographic Thought	3-0-0	03
MGGC102	Advance Geomorphology	3-0-0	03
MGGC103	Geography of Natural Resources	3-0-0	03
MGGC104	Geography of India	3-0-0	03
MGGC105	India- Locational Aspects (Maps)	3-0-0	03
MGGL106	Practical	0-0-3	03
	Total		18

GEOGRAPHIC THOUGHT**Credit Course MGGC101****Internal Assessment: 40 Marks****External Assessment: 60 Marks****Note :**

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I

Contribution of Greeks and Romans Geographers with special reference to Ptolemy and Strabo, Contribution of Arab World, Geography as a Science of : (i) Location, (ii) Distribution, (iii) Arial differentiation, (iv) relationships (v) spatial organization and (vi) Region.

UNIT II

German School of Geography – Humboldt, Ritter, Ratzel.

French School of Geography – Blache&Brunhes

American School of Geography – Sauer &Huntington

UNIT III :

Models and paradigms, system theory, phenomenological approach, dualism in Geography (i) physical and human geography; (ii) Regional and Systematic Geography, Quantitative revolution.

UNIT IV: Pragmatism, positivism, functionalism, idealism, existentialism, behaviouralism, radical and humanistic geography, future of geography and contribution of Indian Geography.

Books Recommended :

1. Dickenson. R. E. – The Makers of Modern Geography, Rutledge and Kegan London
2. Freeman . T.W. – A Hundred Years of Geography, London.
3. Jones and Martin – All Possible World – A History of Geographical ideas. Odessey, Indianapolis (USA)
4. Halt Jensen A. – Geography- Its History and Concepts , Harper and Raw London.
5. Dixit R.D. – Geographical Thought – A Contextual History of Ideas .Prentice Hall, New Delhi
6. Kaushik S.D. – BhaugolikVichardharayen (Hindi) – SahityaBhawan Publication Agra.
7. HussainMajid- Evolution of Geographical Thought (English And Hindi)Rawat Publication jaipur.
8. Taylor. G. Geography in Twentieth Century; London
9. *Jagdish Singh - BhaugolikChintankaKramvikas (Hindi) Gyanodaya , Gorakhpur.*

Credit Course MGGC102

ADVANCE GEOMORPHOLOGY

Internal Assessment : 40 Marks

External Assessment : 60 Marks

Note :

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I

Fundamental concepts of Geomorphology; methods and approaches of landforms study; Theories of landscape development by Gilbert, Davis, Penk and Hack; Morphogenetic regions.

UNIT II

Plate tectonics, Mountain building, Isostasy, Theories of Slope development by Young and King, peneplain and pedi plains, geological structures and rocks.

UNIT III

Geomorphic process – River, glacier, air, underground water and coastal; mass movement and resultant land forms; morphometry of drainage basin; profile of equilibrium rejuvenation and polycyclic landscape.

UNIT IV

Applied Geomorphology engineering works, Anthropogenic process and landscape planning, Regional Geomorphology of Ganga plain, Himalyan and Konkan region, Geomorphic hazards and mitigation.

Books Recommended :

Singh, Savindra Geomorphology, PrayagPustakBhawan, Allahabad.:

Singh, Savindra, Bhooaakirtivigyan (in hindi), PrayagPustakBhawan, Allahabad.

Richard Huggett, 1998 Fundamentals of Geomorphology.

Eric Charles Frederick Bird, 2000 Coastal Geomorphology: An Introduction.

Willam D. Thornbury, Principales of Geomorphology.

Robert S. Anderson, 2008 The Little Book Of Geomorphology: Excercising The Principle Of Conservation.

Credit Course MGGC103

GEOGRAPHY OF NATURAL RESOURCES**Internal Assessment : 40 Marks****External Assessment : 60 Marks****Note :**

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I

Concepts of Natural Resources, Classification; Dynamic theory of resources, resources scarcity and adequacy, resource regionalization, Economic development and resources.

UNIT II

Land, water, mineral, energy and biotic resources- distribution, use, degradation and conservation, Global and Indian Scenario.

UNIT III

Resource appraisal, resource depletion and emerging issues like desertification, deforestation, loss of bio diversity, energy crises, water scarcity and conflicts.

UNIT IV

Natural resource data management system, concept and importance, sustainable development and conservation of resources, integrated resource management, Globalization and resources, community participation and governance; contemporary issues.

Books Recommended :

World Geography Resource Book, 2008

Resource Geography, 1994

Geography and resource analysis by Bruce Mitchell, 1979

SansadhanBhugol, Arun Kumar Yadav

Resource Geography by Majid Husain

A Study of Resource by Guha

Credit Course MGGC104

GEOGRAPHY OF INDIA

Internal Assessment : 40 Marks

External Assessment : 60 Marks

Note :

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I

Indian federalism, India unity in diversity (view points from social geography), physiography, Drainage (volume), climate mechanism of Indian Monsoon (recent theories), soil and Natural vegetation.

UNIT II

Growth, distribution and density of population, Trends of Urbanization spatial distributional pattern of settlements (rural & urban). Human development index and its components,

UNIT III

Agroclimatic region, Rainbow revolution, Industrial Complex and Industrial regions, Major river valley projects, energy crises and food security management.

UNIT IV

Growing importance of ports, experience of Rural Planning, Integrated R.D.P., Multi level planning, community participation & governance and planning contemporary issues and Economic reforms- Multinationals and liberalization.

Books Recommended :

R.L. Singh, India: A Regional Geography

Majid Husain, Geography Of India.

D.R.Khullar, A Comprehensive Geography

AlkaGotam,Advanced Geography of India; ShardaPustakBhawan, Allahabad.

S.C. Bansal,2003 Settlement & Population Geography, Rastogi Publication, Meerut.

S.C. Bansal,1997 Advanced Geography of India; Minakshi Publication, Meerut.

Credit Course MGGC105

INDIA – LOCATIONAL ASPECTS (MAP)

Internal Assessment : 40 Marks

External Assessment : 60 Marks

Objective :

The paper is designed to acquaint the students with the importance of location as one of the important aspects of geographical studies. The aim to promote awareness among students about Atlas.

Note :

There will be two parts of this course :

(A) An out line map of India will be provided to the students and they will have to mark locations on it. 15 locations will be given and 01 mark for each correct location.

(B) An out line map of India with indicated location of features in the numerals will be provided. Students will identify the location features. 15 locations features will be given for identification and 01 mark to each correct identification.

Students will provide write up (for both A and B part) on the significant geographical relevance and importance of the locations (marked and identified), whether physical, economic, cultural, ecological, environmental and commercial etc. in 30 words on each. 01 mark is allotted for each write-up.

Distribution of Marks-

(A) Locations	15	
Write up in 30 words		15
(B) Identification of locations	15	

Write up in 30 words 15

Course Contents :

Physical –

Mountain and ranges, rivers, forest, soil, lakes, and natural regions.

Cultural – State and Capitals, Important Cities, Population, Rural – Urban, Tribal Areas, Planning regions.

Economic –

Agricultural regions Cities/ belts, Industrial, regions and complexes, Power plants, Hydro Power Projects, Important ports and transport routes, important resources.

Other –

Bio diversity, National Parks, ecology of Parks.

Books Recommended :

1. Oxford Atlas
2. Mackmilan Atlas
3. Map by Practice, K. Sidharta

Credit Course MGGL106

PRACTICAL – 1

**Internal Assessment : 40 Marks
Marks**

External Assessment : 60

Note :

The syllabus for practical is related to laboratory work on cartographic mapping. The practical exam will be of three hours duration. The division of marks in Practical exam is given below:

Laboratory work is divided into four units. Two exercises are to be set from each unit with internal choice and candidates will be required to attempt four exercises in all. The cartographic mapping work examination will be of three hours duration in which exercises will be given on Cartography. All questions carry equal marks.

UNIT I

Projections-Mercator's, Polyconic, International, Gnomonic (Equational Aspect), Gall's Stereographic, interrupted Mollweide's and Sinusoidal.

UNIT II

Slope analysis by Wentworth', Smith's, Henry- Raiz's and Robinson's Methods. Analysis of relief characteristics from contours, profiles Transverse, longitudinal, Serial, Superimposed, Projected and Composite.

UNIT III

Morphometric analysis- Area height, Altimetric frequency and Hypsometric curve; Drainage density, stream order, Elongation, circularity and bifurcation ratio.

UNIT IV

Interpretation of Topographical maps – land use and settlements.

Topographical mapping

Geological Cross Section drawing.

Books Recommended :

1. Gupta K.K and Tyagi V.C., 1992: Working with Maps, Survey of India, DST, New Delhi.
2. Mishra R.P. and Ramesh A., 1989: Fundamentals of Cartography, Concept Publishing.
3. Singh R.L. and Singh R.P.B., 1999: Elements of Practical Geography, Kalyani Publishers.
4. Singh R.L, 1998: PrayogicBhoogolRooprekha, Kalyani Publications.

SEMESTER II

Course Codes

Code Course	Semester II	L-T-P	Credit
MGGC201	Geography of the Himalaya	3-0-0	03
MGGC202	Advance Climatology	3-0-0	03
MGGC203	Environmental Study	3-0-0	03
MGGC204	Remote Sensing and GIS	3-0-0	03
MGGC205	World (Excluding India) Locational Aspects (Maps)	3-0-0	03

MGGL206	Practical	0-0-3	03
	Total		18

GEOGRAPHY OF THE HIMALAYA

Course CodeMGGC201

Paper –I

Time- 3 Hrs.

Assessment:40 Marks

Internal

End Semester Exam:60

Marks

Note:

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I

Geo- physical identity; origin of Himalaya and its structure; Himalaya as regional entity; geopolitical issues, cultural appraisal, Himalayan people; Geo-sensitivity of Himalaya. Future of Himalaya.

UNIT II

Physiography; landforms, drainage (volume) and Himalaya as water tower, glaciers; lakes; passes; climate; natural vegetation, natural hazards. Geo- Ecological problems of Himalaya created by anthropogenic activities.

UNIT III

Demography and Economy-Distribution, density and growth of population, migration, urbanization, tourism and power projects.

UNIT IV

Geographical account of Western, Central and Eastern Himalaya. Regional analysis of Kashmir, Laddak, Kangra and Lahul, Doon, Kathmandu, Dhiyang Valley, Tista Valley, Mountain Development Planning and Policy.

Books Recommended :

1. Lal, J.S. & Moddie, : The Himalaya- Aspect of Change A.D. (ed).
2. Bose, S.C.: Land and people of the Himalaya.
3. Kayastha, S. : The Himalayan Beas Basin.
4. Valdin, K.S. (ed.) : Kumaun – Land and People.
5. Singh, T.V. (ed.) : Mountain and Development.
6. Singh, O.P. (ed.) : The Himalaya-Nature, Man & Culture.
7. Joshi, S.C. and others : Kumaun Himalaya

ADVANCE CLIMATOLOGY**Credit Course MGGC202****Paper –II****Time- 3 Hrs.****Internal****Assessment:40 Marks****End Semester Exam:60****Marks****Note:**

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I Meaning, scope and development of climatology, Atmosphere equilibrium, Adiabatic temperature change, Jet Stream, El- Nino, La- Nin, Walker circulation, Southern Oscillation, precipitation & humidity.

UNIT II

Air masses- origin, growth, classification, and distribution, Horizontal and Vertical motion of winds. Fronts and front genesis, cyclones and anticyclones; temperate and tropical cyclones;

UNIT III

Climate classification of Koppen and Thornthwaite. Major Climate types, Weather analysis; weather and human behaviour, Weather modification, atmospheric hazards, cloud bursts.

UNIT IV

Climatic changes- definition & detection : Tree rings, Glacial ice & Oxygen Isotope analysis; causes : Plate tectonics, Volcanic activity, orbital variations: Solar variability. Human impact on global climate, Global Warming, artificial climate and acid precipitation.

Books Recommended :

1. Chorley, R.G. AND Barry, R.G. : Atmosphere, Weather and Climate Methuen & Co. Ltd., London, 1995.
2. Critchfield, H.J.: General Climatology, Prentice Hall of India, New Delhi, 2002.
3. Sidharta, K.: Climatology, KitabMahal, New Delhi.
4. Trewartha, G.T. : An Introduction to Climate, McGraw Hill Series in Geography.
5. Miller, A. et al : World Climatology, Elbs and Edward Arnold, 1979.
6. Singh, Savindra : Climatology,, PrayagPustakBhawan, Allahabad.:
7. Singh, Savindra, JalvayuVigyan (in Hindi), PrayagPustakBhawan, Allahabad.

ENVIRONMENTAL STUDY

Credit Course -MGGC203

Paper – III

Time- 3 Hrs.

Assessment:40

Exam:60

Note:

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

Internal

End Semester

UNIT I

Meaning and scope of environmental geography, Basic Principles of environmental geography; composition and types of environment, Ecological Principles, Man- Environment relationship. Restoration of ecology.

UNIT II

Ecosystem: Concept and components, Trophic levels; Food chains and Food Webs, Energy flow in the ecosystem, Ecosystem, Ecosystem stability, High land-Low and interactive system, human ecological adaptation.

UNIT III

Environmental degradation, Environmental Pollution (Air, Water and Solid Waste Ganga Pollution & Ganga action plan. Environmental Problems- Global Warming. Ozone depletion and Green house effects, transformation of nature by man, global ecological imbalances.

UNIT IV

Environmental management: Concept and approaches; Ecosystem management strategies, Environmental dimension in Planning – sustainable development, eco-development, limits to growth, Environmental impact assessment, RIO summit, Kyoto protocol & carbon trading.

Books Recommended :

1. Singh, Savindra : Environmental Management, Prayag Pustak Bhawan, Allahabad.:
2. Singh, Savindra, Paryawan Bhoog (in hindi), Prayag Pustak Bhawan, Allahabad.
3. Furley, P.A. and Newey, W.W. : Man and the Biosphere, Butterworth, London.
4. Arvil, R.: Man and Environment, Penguin.
5. Bhatt H.P. & Bhatt Sangita (ed.): Environment – Yesterday, today & tomorrow 1992.

REMOTE SENSING AND GIS**Credit Course -MGGC204****Paper –IV****Time- 3 Hrs.****Assessment:40****Internal****End Semester Exam:60****Marks**

Note:

The paper consists of four units. Two questions will be set from each unit. The candidates will be required to answer one question from each unit. The candidate will be required to attempt 04 questions in all. Answer should be precise. All questions carry equal marks.

UNIT I

Definition, process and stages of Remote Sensing, energy sources and radiation; EMR, energy interaction with atmosphere and earth surface, principles of micro wave Remote Sensing.

Types of R.S., platforms; satellites and sensor; sensor resolution, digital image and satellite imagery, elements of visual image interpretation; digital image processing techniques.

UNIT II

Definition, history Types, classification and planning mission of A.P.; basic geometric characteristics – scale, height overlap, mosaic, resolution, stereoscopic, 3D viewing, uses of A.P. in landform mapping and urban planning.

UNIT III

Definition, concept, scope and components of GIS, data and information, geo referencing and rectification, data inputting methods and GPS.

UNIT IV

Computer cartography and mapping in digital age; Internal GIS, Web GIS, DTM; Recent trends of GIS, emerging branches of GIS Science.

Application of remote sensing and GIS in watershed management, weather information, disaster forecast and geo information.

Books Recommended :

1. Sabine, F.F.: Remote Sensing- Principles& Interpretation.
2. 2. Chauniyal. D.D.: Remote Sensing and G.I.S.(Hindi).
3. Demer, M.N.: Fundamentals of Geographic Information System.
4. Aronoff, S.: Principles of Geographical Information System : Socio-Economic Applications.

5. Aronoff, S.: Geographical Information System – A Management Perspective

Credit Course -MGGC205

World (Excluding India) Locational Aspects (Map)

Paper –V

Time-3 Hrs.

Internal

Assessment:40Marks

End Semester Exam:60

Marks

Note:

The paper is designed to acquaint the students with the importance of location as one of the important aspects of geographical studies. The aim is to promote awareness among students about Atlas. There will be two parts of this course:

- (A) An out line map of World will be provided to the students and they will have to mark locations. 15 locations will be given and a mark for each correct location.
- (B) (B) An out line map of World with indicated location of features in the numerals will be provided. Students will identify the location features. 15 location features will be given for identification and 01 mark to each correct identification.

Students will provide write up (for both A and B Part) on the significant geographical relevance and importance of the locations (marked and identified), whether physical, economic, cultural, ecological, environmental and commercial etc. in 30 words on each. 01 mark is allotted for each write-up.

Distribution of Marks-

(C) Locations	15	
Write up in 30 words		15

(D) Identification of locations	15
Write up in 30 words	15

Course Contents :**Physical –**

Mountain and ranges, rivers, forest, soil, lakes, and natural regions, oceans and seas, climate and change, major currents, major land forms.

Cultural – Nation and Capitals, Important Cities, Population, Tribal Areas, cultural regions, Agglomeration, poverty, Metropolitan, Megalopolis.

Economic –

Agro-climatic regions & Agricultural regions, human ecological regions, Industrial regions and major industrial centres, major iron and coal fields, transport routes (land and sea).

Environment & Other –

Major eco system, zoo geographical regions, bio- geographical regions, Biome & biomass, popular biosphere reserves, SAARC, ASIAN, OPEC, places in news and geographical events, contemporary issues.

Books Recommended :

1. India & the World- NATMO
2. School Atlas
3. Britanica World Atlas
4. Oxford Atlas
5. Mackmilan Atlas
6. Map by Practice, K. Sidharta

Credit Course -MGGL206:**PRACTICAL – 1**

**Internal Assessment : 40 Marks
Marks**

External Assessment : 60

Note : The syllabi for practical is divided into two section , Section – 'A' is related to Laboratory work , and Section 'B' is related to field work (Geographical Tour) . The laboratory work is divided into four units .eight question will be set selecting at least two question from each unit . Candidate will have to attempt four question selecting at least one question from each unit . The division of marks in Practical is given below-

Laboratory work	-	M.M. 14
Field Work	-	M.M. 30
Sessional record	-	M.M. 11
Viva – Voce	-	M.M. 05

SECTION A – LABORATORY WORK

UNIT – I:

Basic of Computer , Concept of maps , Coordinates System, Projection (WGS84 and Everest), Types of files , Export Import file , Layer stacking of Multispectral Imagery .

UNIT - II :

Concept of Geo referencing (maps to image, image to image), sub – setting with the help of AOI layers , Mosaicking, Radiometric and stacking of Multispectral Imagery. Geometric errors and correction, image Classification .

UNIT- III :

Spatial data integration, Digitization (Point , line , Polygon), Non Spatial data integration, Editing of Spatial and Non Spatial data , Building Topology .

UNIT – IV :

Basics of GPS and Computer Cartography & mapping .

Books Recommended:

1. Jenson, J.R. : Introduction to Digital Image Processing, Prentice Hall, Englewood cliffs, NJ.
2. Pratt, W.K. : Digital Image processing, John Wiley & Sons, New York, 1995.
3. Hord, R.M. : Digital Image Processing of Remotely sensed Data, Academic Press, New York, 1989.
4. Nag, P.: Thematic cartography and Remote Sensing, concept Publishing House, New Delhi.
5. Sinha, P.K. & Sinha, P.: Computer Fundamentals, 3rd Ed. B.P.B. Publication.

SECTION- B – FIELD WORK

The field study is compulsory for all students, those who will not take part, will not give any mark for this. The field study work is designed to acquaint the students that, "Geography is an observational science" and field work is one of the important methodologies in geographical studies.

The students are to be sensitized about pre field work preparation, conduct of field work, post field work and report writing.

Field study tour to provide traverses across and macro regions of the country specially problem areas, areas in news and needs will be arranged of about two week duration. Students will be trained in field work collection of data, mapping, sketching and collection of socio economic data etc. using observational and interview method etc.

The report will involve statement of objective, selection of area (with reasons), method of field study and data collection, analysis of collected data/ information etc. in which minimum 5 maps and diagrams and 6 pages of write up is necessary.

FIELD STUDY GUIDE (TEACHER)-

Students will submit a precise report (1 or 2 pages) of field study work with the list of students present/ attended the field study to the HOD concern.