1.1.3 2

C-1-5

M. L. Sukhadia University, Udaipur
Department of Geography, CSSH

Minutes of Meeting of the Committee Courses in Geography held on 4t march 2017, in the Department of Geography.

A. The following members were present in the Meeting:

1.	Prof.Sadhana Kothari	Convener of Committee of Courses
2.	Prof.P R Vyas	Head & Internal Member
3.	Prof I. M. Kayamkhani	Internal Member
4.	Prof Seema Jalan	Internal Member
5.	Dr.Satish Acharya,	Internal Member & Head, Meera Girls College ,Udaipur
6.	Dr. Devendra Singh Chauhan	Internal Member

B. Following deliberations took place in the meeting:

1. The Convenor welcomed all the members.
2. The minutes of the last meeting of the Committee of Courses in Geography held on 27th Feb 2017 were confirmed.
3. The Committee prepared the PG semester courses ,according to CBCS choice based credit scheme as a core papers ,elective papers ,practical's and skill courses and also finalised the existing course structure, based on regional needs and constraints, and resource potentials of the Departments in Appendix - I
4. The Committee **Resolved** to review the existing syllabus of B. A course and reviewed existing syllabus with minor changes for the session 2017-18. In III year introduced the paper Regional Geography (Five Countries) instead of World Geography Appendix – II
5. The Committee resolved that the Honours, PG Diploma courses and MPhil should be introduced from the coming session so as to enrich and enhance the capabilities and competitiveness of students aspiring for PG studies in Geography.
6. The Committee also resolved that the professional course of PG Diploma in
   - Remote Sensing and GIS
   - Town and Country Planning

   should be introduced as Self Finance Scheme (SFS).
7. It is resolved to organise workshops of faculty of the affiliated colleges to discuss the revised courses in the light of objectives, pedagogy and scheme of examination.
8. The meeting ended with a vote of thanks to the Chair.

Prof.P.R.Vyas
HEAD

Prof.Sadhana Kothari
Convener

Prof.Harsh Bhu
Chairman of Earth Sciences

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1.1.3b

मोहनलाल सुखाड़िया विश्वविद्यालय, उदयपुर
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES OF THE MEETING OF ACADEMIC COUNCIL HELD ON 16.03.2017 AT 02:30 P.M. AT THE UNIVERSITY ADM. OFFICE, MLSU, UDAIPUR

Following were present:

1. Prof. J.P. Sharma, Vice Chancellor – In Chair
2. Prof. Seema Malik
3. Prof. Vijay Shrimali
4. Prof. B.L. Ahuja
5. Prof. G. Soral
6. Prof. Sadhana Kothari
7. Prof. Farida Shah
8. Prof. Harsh Bhu
9. Prof. P.K. Singh
10. Prof. Sanjay Lodha
11. Prof. C.R. Suthar
12. Prof. N. Lakshmi
13. Prof. Hemant Dwivedi
14. Prof. M.S. Hada
15. Prof. Neeraj Sharma
16. Prof. Hanuman Prasad
17. Prof. Jinendra Jain
18. Prof. Anand Paliwal
19. Prof. B.R. Bamaniya
20. Prof. M.K. Jain
21. Prof. Kanika Sharma
22. Prof. Pradeep Trikha
23. Prof. G.S. Rathore
24. Prof. Arti Prasad
25. Prof. P.M. Yadav
26. Prof. G.S. Kumpawat
27. Prof. Hadees Ansari
28. Prof. Kalpana Jain
29. Prof. Pratibha
30. Prof. Shurveer S. Bhanawat
31. Dr. Giriraj Singh Chouhan
32. Shri H.S. Bhati, RAS, Registrar – Member Secretary

Invitee:

1. Prof. Monika Nagori
2. Prof. Anil Kothari
3. Shri Girish Kachara, Comptroller
4. Dr. R.C. Kumawat, COE
5. Shri M.K. Barber,D.R.(GAD)

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At the outset, Hon'ble Vice Chancellor extended a hearty welcome to all the members present in the meeting including new members who have joined recently in the capacity as Head of the Department. All the members reciprocated.

1. To confirm the Minutes of the Academic Council meeting held on 01.12.2016.

   While confirming the Minutes of the last Academic Council held on 01.12.2016, Dr. Giriraj Singh, Asstt.Professor, nominated member by the Vice Chancellor brought to the notice of the Chair that resolution regarding Good Academic Record at Agenda Item No. 1 has not properly been recorded. He further suggested that Good Academic Record would be as per UGC Guidelines. The Chairman informed the members that this matter is placed before the AC at Agenda Item No. 2 of this meeting. With this observation, the house RESOLVED to confirm the Minutes of the Academic Council meeting held on 01.12.2016.

2. To consider and adopt the new Amendments of UGC Regulations i.e. 3rd Amendments and 4th Amendments (Minimum Qualification for Appointments of Teachers and other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education) – 3rd Amendment, Regulations May,2016 and 4th Amendment, Regulations July, 2016.

   The new Amendments of UGC Regulations i.e. 3rd Amendments and 4th Amendments (Minimum Qualification for Appointments of Teachers and other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education) – 3rd Amendment, Regulations May,2016 and 4th Amendment, Regulations July, 2016 were discussed in detail and a final draft was prepared by the Faculty Chair Persons of the University and placed before the house.

   RESOVED to approve "Mohanlal Sukhadia University Qualifications and Procedure for Selection & Appointment on Teaching and Other Academic Posts, 2017.

3. To consider a proposal submitted by the Chairman, Faculty of Social Sciences for setting up a Chair in the name of Swami Dayanand Saraswati in the University.

   RESOLVED to approve the proposal for setting up a Chair in the name of Swami Dayanand Saraswati in the University and inform the Rajbhawan accordingly. Further resolved that Chairman, Faculty of Humanities will submit a proposal for setting up a Chair in the name of Guru Govind Singh.

4. To consider letter dated 17.02.2017 submitted by the Head, Department of Computer Science, MLSU, Udaipur regarding introducing of Courses in Cyber Studies:-
   (i) Post-Graduate Diploma in Cyber Security (PGDCS)
   (ii) Post-Graduate Diploma in Cyber Law (PGDCL), and
   (iii) Post-Graduate Diploma in Cyber Management (PGDCM)

   RESOLVED in the light of the directions of H.E. the Chancellor during 24th Convocation held on 22nd December, 2016 regarding having courses on Cyber Security to approve introduction of Cyber Studies Courses in :-
   (i) Post-Graduate Diploma in Cyber Security (PGDCS)
   (ii) Post-Graduate Diploma in Cyber Law (PGDCL), and
   (iii) Post-Graduate Diploma in Cyber Management (PGDCM)

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It is further resolved that any constituent college or post-graduate department of the University if wants to start/offer any one or all courses on credit based may introduce individual papers of requisite credits related to Cyber Studies for which separate proposal is required for approval.

5. To confirm the minutes of the meeting of Faculty of Social Sciences held on 11.02.2017.

RESOLVED to confirm the minutes of the meeting of Faculty of Social Sciences held on 11.02.2017.

6. To consider conferment of Ph.D. degree entitled "Volatility in Indian Stock Market : Empirical Study on Volatility Index" to Ms. Ranjana Kothari.

RESOLVED conferment of Ph.D. degree entitled "Volatility in Indian Stock Market : Empirical Study on Volatility Index" to Ms. Ranjana Kothari.

7. To consider the issue related to Ph.D. viva voce of Mr. Sandeep Kumawat.

RESOLVED that the Head of the Department concerned will put his/her signature in the Ph.D. Viva Voce report after verifying that the Viva Voce was conducted. No payment be made to the External Examiner for the Viva Voce conducted on 29.09.2016.

8. To consider and implement the UGC Gazette Notification dated 05.03.2016 regarding eligibility criteria to be a Research Supervisor, Co-Supervisor, Number of M.Phil / Ph.D. Scholars permissible per Supervisor, minimum and maximum period of submission, extension, etc.

RESOLVED to implement the UGC Gazette Notification dated 05.03.2016 regarding eligibility criteria to be a Research Supervisor, Co-Supervisor, Number of M.Phil / Ph.D. Scholars permissible per Supervisor, minimum and maximum period of submission, extension, etc.

Further, resolved that admission to M.Phil. program will be made through RET only. The M.Phil. program will be run only when a minimum of 5 students are admitted otherwise it will not be run. A committee consisting of following members is constituted for framing the rules, regulations and modalities for Ph.D. and M.Phil. programmes:

i) Prof. Seema Malik
ii) Prof. B.L. Ahuja
iii) Prof. G. Soral
iv) Prof. Sanjay Lodha

9. To consider report of the committee for shifting of all affiliated colleges of Banswara, Dungarpur and Pratapgarh districts in Govind Guru Tribal University, Banswara.

RESOLVED to approve the report of the committee constituted in compliance of the letter vide No. P.25(1)Shiksha-4/2013 Part Jaipur dated 20.01.2016 of Principal Secretary, Technical & Higher Education for shifting of all affiliated colleges of Banswara, Dungarpur and Pratapgarh districts in Govind Guru Tribal University, Banswara.

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Further, the Comptroller is authorized to include additional provisions of funds in the University Budget 2017-18 to overcome the loss of revenue due to the shifting of above affiliated colleges and the State Govt. be requested to enhance the grant to compensate the revenue loss occurring on account of shifting of colleges of these districts.

10. To consider the proposal received from the Comptroller office for increase in fee by 10% every year.

RESOLVED to approve the proposal of increase of entire fee by 10% every year.

11. To consider the Panel of Experts for appointment on various teaching posts.

RESOLVED to approve the Panel of Experts for appointment of various teaching posts except Business Management & Tourism with the remarks that the same may be sent after consideration and approval of the Faculty of Management. .

12. To confirm the Minutes of the Meeting of Faculty of Science held on 17.2.2017.

RESOLVED to confirm the Minutes of the Meeting of Faculty of Science held on 17.02.2017.

13. To report various orders/letters issued by the University (reported at Sr.No.(i) to (xxx)).

RESOLVED to approve the orders/letters issued by the University reported at Sr.No.(i) to (xxx).

SUPPLEMENTARY AGENDA

S/1. To confirm the Minutes of the Meeting of Committee of Courses and Faculty meeting of Faculty of Management Studies held on 07.03.2017.

RESOLVED to confirm the Minutes of the Meetings of Committee of Courses and Faculty of Management Studies held on 07.03.2017 with following amendments:
The pattern of examination would be as follows:
Section 'A' and Section 'B' will be as per old pattern of Examination.
Section 'C' of case/practical application will be compulsory comprising of 20 marks.

S/2. To confirm the Minutes of the Meeting of Committee of Courses, Faculty of Education held on 11.02.2017.

RESOLVED to confirm the Minutes of the Meetings of Committee of Courses and Faculty of Education held on 11.02.2017.

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S/3. To confirm the Minutes of the meeting of the Faculty of Social Sciences held on 10.03.2017.

RESOLVED to confirm the Minutes of the meeting of the Faculty of Social Sciences held on 10.03.2017.

S/4. To confirm the Minutes of the Meeting of the Faculty of Humanities held on 12.02.2017.

RESOLVED to confirm the Minutes of the Meeting of the Faculty of Humanities held on 12.02.2017.

S/5. To confirm the Minutes of the Meeting of the Faculty of Commerce held on 11.02.2017 and 14.03.2017.

RESOLVED to confirm the Minutes of the Meeting of the Faculty of Commerce held on 11.02.2017 and 14.03.2017.

S/6. To consider the proposal for Finishing School for Skill Development and Placement of the students.

RESOLVED to approve the proposal for starting the Finishing School for Skill Development and Placement of the students in the University on Self Financing basis, the details of fee, course and other related issue will be evolved by the Committee constituted for this purpose.

S/7. To consider Minutes of the Meeting held on 06.03.2017 regarding formation of new Department of Hotel, Tourism and Travel Management.

RESOLVED to refer the minutes to the Chairman, Faculty of Management Studies for consideration in the meeting of the Faculty. The recommendation of the Faculty may be put in the next Academic Council for consideration.

S/8. To consider various issues (Five Agenda Items) submitted by the Dean, Post- Graduate Studies.

The following issues submitted by the Dean, Postgraduate Studies were considered and RESOLVED as under -

(i) Henceforth, the Examiners for Research Entrance Test may be shortlisted by the Hon'ble Vice Chancellor from the panel of Experts forwarded by the Departmental Committee of the respective Departments or a separate panel of 10 experts submitted by the Heads of Departments.

(ii) Henceforth, separate papers may be set for Zoology, Biotechnology, Botany, Polymer Science and Chemistry for the Research Entrance Test Paper-II.

(iii) Considered the minutes of the Postgraduate Research Board meeting of Pharmacy held on 11.03.2017 and approved.

(iv) Admission to M.Phil and Ph.D. in all the subjects will be through Research Entrance Test (Common Entrance Test) and the minimum number of students to run the M.Phil

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course in any Department should be five, if less than five students opt for it and deposit the fee, M.Phil. course shall not be run.

(v) Henceforth, in case of any objection vis-à-vis Answer Key, the same would be forwarded to the Departmental Committee of the respective Department and the Answer Key would be revised according to the unanimous decision of the members of the Departmental Committee.

Some of the members raised the matter of declining to accept a Ph.D. Scholar by the Supervisor and requested to take decision in the matter. After discussion, it was resolved that if any Supervisor declines to accept a Ph.D. scholar, he/she may be served a show cause notice by the Dean, Post Graduate Studies and appropriate action be taken accordingly.

S/9. To consider letter received from the Chairman, Faculty of Management Studies regarding the award of Ph.D. to candidate appearing from Commerce Faculty.

RESOLVED to approve that the Ph.D. degree will be awarded only in the subject in which the candidate has appeared for Research Entrance Test and as well as the candidate shall be admitted to the same subject in which he/she has appeared in RET.

S/10. To consider the revised procedure and format for affiliation to colleges to make it more transparent and available on the requisite information on University web site.

RESOLVED to approve the procedure for grant of affiliation / extension of colleges. To make it more transparent, the prescribed format for affiliation / extension to provide requisite information will be available on University website.

S/11. To consider proposal for setting up Centre for Entrepreneurship and Small Business Development (CESBD).

RESOLVED to approve the proposal for setting up Centre for Entrepreneurship and Small Business Development (CESBD) on Self Financing basis and send the proposal to the Government for financial support.

S/12. To consider the scheme for Governance of Self Financing Courses of Studies/ Programmes.

RESOLVED to approve the scheme for Governance of Self Financing Courses of Studies / Programmes.

S/13. To consider the minutes of Faculty of Earth Science dated 14.03.2017.

RESOLVED to confirm the minutes of Faculty of Earth Science dated 14.03.2017.

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TABLE AGENDA

T/1. To consider proposal submitted by the Controller of Examinations regarding the semester evaluation may be conducted through the Coordinators appointed by the HVC and the evaluated answer books/award will be examined by the committee consisting of the Chairman of Faculty, HOD and one senior Professor/Teacher of the concerned department. After the approval from the Committee, result of the semester will be prepared and published as per the norms.

RESOLVED to approve the proposal.

T/2. To consider proposal submitted by the Chairman, University Sports Board regarding
(i) relaxation in the qualification (Good Academic Record)of the post of Assistant Director Physical Education.
(ii) Starting of MA in Yogic Science from coming session.

RESOLVED that the matter regarding Good Academic Record has already been resolved at item 2 above; and further resolved to approve the Syllabus for M.A. in Yoga to start it from the next academic session 2017-18 on Self Financing basis.

T/3. Considered conferment of Ph.D. degree to the successful candidates for the period from 19.11.2016 to 15.03.2017.

RESOLVED to approve conferment of Ph.D. degree to the successful candidates for the period from 19.11.2016 to 15.03.2017.

T/4. To consider a proposal for the establishment of "वंषावली अध्ययन एवं शोध केन्द", submitted by Prof. Pratibha, Head, Department of History, MLSU, Udaipur.

RESOLVED to approve the proposal for the establishment of "वंषावली अध्ययन एवं शोध केन्द", submitted by Prof. Pratibha, Head, Department of History, MLSU, Udaipur and also send the proposal to get Financial assistance under RUSA.

The meeting ended with a vote of thanks to the Chair.

(Prof. J.P. Sharma)
VICE CHANCELLOR

(H.S. Bhati)
REGISTRAR

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1.1.3 C

C-I-7

मोहनलाल सुखाड़िया विश्वविद्यालय, उदयपुर

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES OF THE MEETING OF THE BOARD OF MANAGEMENT HELD ON 10.06.2017 AT 11.00 A.M. IN THE UNIVERSITY ADMINISTRATIVE OFFICE OF THE UNIVERSITY.

The following members attended the meeting :

1. Prof. J.P.Sharma, Vice Chancellor — In Chair
2. Shri Nana Lal Ahari, MLA
3. Prof. R.V.Singh (Chancellor's Nominee)
4. Prof. Seema Malik, Professor
5. Prof. Vijay Shrimali, Professor
6. Prof. G.Soral, Dean, UCCMS
7. Prof. Anand Paliwal, Dean, UCLaw
8. Dr. Ashish Sisodia, Asstt. Prof.
9. Dr. Himanshu Mehta, Principal, Pacific College
10. Dr. (Mrs.) Kumudini Chanwariya, Nominee Finance Deptt.
11. Dr. Rameshwar Ameta, Principal, MG College, Nominee Higher Education Deptt.
12. Shri H.S.Bhati, Registrar — Member Secretary

Invitee :

1. Shri Girish Kachhara, Comptroller

Before starting the business of the House, representatives of Non-teaching Staff Association & Class IV Union of the University were invited to present their submission on the matters (i) Representation in BOM ; (ii) Regularization of temporary employees ; (iii) APIR for all the categories of staff in the University ; (iv) Seniority list of LDC ; (v) Bonus marks to contractual staff in the appointment process ; and (vi) Same honorarium to the persons working in various departments of the University.

Shri Roop Singh Meena and others were also invited to present their submission on Roaster, Backlog, SC/ST representation in Roster Committee and UGC rules regarding Good Academic Record.

Later on the House started its business. At the outset, the Vice Chancellor welcomed all the members and the same was reciprocated by all the members. Then, item wise agenda were taken up with the permission of the chair.

01.	To confirm the minutes of the BOM meeting held on 28.04.2016.

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Himmat Singh Bhati
Registrar
Mohanlal Sukhadia Univ.
Udaipur (Raj.)

	While confirming the minutes of the BOM meeting held on 28.04.2016, Prof. R.V. Singh raised the matter regarding non holdings of the meetings of the committee constituted vide Resolution No. T/2 and T/3. After appraisal by the HVC and discussion, the minutes of the BOM meeting dated 28.04.2016 were confirmed.
02.	To confirm the minutes of the Academic Council meetings held on 04.06.2016, 01.12.2016 and 16.03.2017 including **"Mohanlal Sukhadia University Qualifications and Procedure for Selection & Appointment on Teaching and Other Academic Posts, 2017"** (Res. No. 2 of AC meeting dated 16.03.2017).
	Considered and resolved to confirm the minutes of the meetings of Academic Council held on 04.06.2016, 01.12.2016 and 16.03.2017 including **"Mohanlal Sukhadia University Qualifications and Procedure for Selection & Appointment on Teaching and Other Academic Posts, 2017"** (Res. No. 2 of AC meeting dated 16.03.2017).
03.	To confirm the minutes of the Council of Deans meeting held on 4.5.2016, 23.6.2016, 14.10.2016, 20.01.2017, 28.03.2017 and 27.04.2017.
	Considered and resolved to confirm the minutes of the meetings of Council of Deans held on 4.5.2016, 23.6.2016, 14.10.2016, 20.01.2017, 28.03.2017 and 27.04.2017.
04.	To consider and approve the Budget Estimates for the year 2017-2018 and Revised Estimates for the year 2016-2017.
	The BOM considered the Minutes of the meeting of the Finance Committee held on 10.06.2017 and resolved to confirm the same. The Finance Committee vide Resolution No. 2 considered and approved the Budget Estimates for the year 2017-18 and Revised Estimates for the year 2016-17. Accordingly, the BOM resolved to approve the Budget Estimates for the year 2017-2018 and Revised Estimates for the year 2016-2017.
05.	To consider Annual Report of the University for the Academic Session 2015-2016.
	It has been apprised by the HVC that submission of the Annual Report of the University to the Govt. and various agencies is mandatory. After discussion, it was resolved to approve the Annual Report of the University for the Academic Session 2015-2016.
06.	To consider directions given by The Commissioner, Person with Disabilities, Jaipur in response of representation of Dr. Vipul Sharma regarding relaxation in the experience for the post of Dy. Registrar and Asstt. Registrar for physically disabled persons.
	The matter was discussed at length. It was brought to the notice of the BOM that The-Commissioner, Persons with Disabilities, Jaipur has not issued any order but issued the directions only to consider the matter. It was decided that whenever summon is received, the University will submit its view points and finally resolved not to reduce the qualifications for the post of Dy. Registrar.
07	To consider replacement of the Convener of the Committee constituted vide BOM Resolution No.3 dated 28.04.2016 to examine the matter of Dr. Shilpa Seth regarding the

Himmat Singh Bhati
Registrar
Mohanlal Sukhadia University
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e-I-15

Department of Geography,MLSU
M.A./M.Sc. CBCS Syllabus session 2017-18

Sno	Course Code	Title of the Course	L-T-P	No.of Credits	Max.Marks 100		
					Univ.Exam	Int. Exam	TOTAL
I semester							
1	M1GEOG1-CT01	: Geographical Thoughts	3-1-0	4	80	20	100
2	M1GEOG2-CT02	: Geomorphology	3-1-0	4	80	20	100
3	M1GEOG3-CT03	: Economic Geography	3-1-0	4	80	20	100
4	M1GEOG4-CT04	: Climatology and Oceanography	3-1-0	4	80	20	100
5	M1GEOG1-CP01	*PRAC : Surveying & Leveling*	0-0-8	4	100		100
6	M1GEOG2-CP02	*PRAC : Air-Photo Interpretation*	0-0-8	4	100		100
II semester							
1	M2GEOG1-CT05	: Geography of India	3-1-0	4	80	20	100
2	M2GEOG2-CT06	: Geography of Resources	3-1-0	4	80	20	100
3	M2GEOG3-CT07	: Regional Development and Planning	3-1-0	4	80	20	100
4	M2GEOG4-CT08	: Political Geography	3-1-0	4	80	20	100
5	M2GEOG1-CP03	*PRAC : Cartography- I **	0-0-8	4	100		100
6	M2GEOG2-CP04	*PRAC : Basics of Remote Sensing and Image Interpretation*	0-0-8	4	100		100
7	M2GEOG1-Skill 01	*Skill : Digital Cartography*	0-0-4	2	100		100
	** Cartography I : Techniques of Climatic Data Analysis,Geomorphology*						
III semester							
1	M3GEOG1-CT09	:Agricultural Geography	3-1-0	4	80	20	100
2	M3GEOG2-CT10	: Urban Geography & Planning	3-1-0	4	80	20	100
3	**Elective: Any one of the following**						
	M3GEOG3-ET11-A	:Environmental Geography	3-1-0	4	80	20	100
	M3GEOG3-ET11-B	: Geography of Rajasthan	3-1-0	4	80	20	100
4	**Elective: Any one of the following**						
	M3GEOG4-ET12-A	:Cultural Geography	3-1-0	4	80	20	100
	M3GEOG4-ET12-B	:Transport Geography	3-1-0	4	80	20	100
5	M3GEOG1-CP05	*PRAC :Advanced Cartograohy II ***	0-0-8	4	100		100
6	M3GEOG2-CP06	*PRAC : Basics of Geographical Information System*	0-0-8	4	100		100
	*** Advanced Cartography II : Techniques of Demographic Data Analysis and Projections(Mathematical)*						
IV semester							
1	M4GEOG1-CT13	:Industrial Geography	3-1-0	4	80	20	100
2	M4GEOG2-CT14	: Population & Settlement Geography	3-1-0	4	80	20	100
3	**Elective: Any one of the following**						
	M4GEOG3-ET15 - A	: Geographical Research Methodology	3-1-0	4	80	20	100
	M4GEOG3-ET15 - B	:Social Geography	3-1-0	4	80	20	100
4	**Elective: Any one of the following**						
	M4GEOG4-ET16 - A	:Quantitative methods in Geography	3-1-0	4	80	20	100

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	M4GEOG4-ET16 - B	:World Geography	3-1-0	4	80	20	100
5	M4GEOG1-CP07	*PRAC :Geospatial Techniques for Applied Geographical Research*	0-0-8	4	100		100
6	M4GEOG2-CP08	*Project work on Natural Resource Management using RSGIS*	0-0-8	4	100		100
7	M4GEOG1-Skill 02	*Skill : Statistical Analysis using Software*	0-0-4	2	100		100

M.A./M.Sc. Geography
First Semester
Paper – I (M1GEOG1-CT01) Geographical Thoughts

Unit – I

a) Definition, Philosophy and nature of geography
b) Scope and Contents of Geography
c) Detailed study of Greek and Roman scholars
d) Nature of Geographical Thoughts in Ancient India

Unit – II

a) Geographical knowledge during the Ancient & medieval period
b) Dark age of Geography
c) The Arabic period
d) Contribution of Varenius and Kant

Unit – III

a) Main characteristics of German school of thoughts- Contribution of Alexander von Humbolt
b) Contribution of Carl Ritter & Ratzel
c) Main characteristics of French school of thought-Contributions of Paul Vidal de la Blache
d) Contribution of Jean Brunhes

Unit – IV

Main characteristics of American school of thoughts-
a) Contribution of W. M. Davis
b) Contribution of Carl O. Sauer
c) Main characteristics of British school of thoughts
d) Changing methods & Technique in Geography.

Unit – V

a) Environmental determinism, possibilism and neo-determinism
b) Concept of Region, , Study of aerial differentiation,
c) Dichotomies in geography, Systematic and Regional, &Qualitative and Quantitative geography
d) Impact of Positivism, Humanism, Radicalism & Behaiouralism in Geography.

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5. Dickinson, R. and O. J. R. Howarth, Making of Geography, Calarendon Press
6. Dickinson, R. E., The Makers of Modern Geography, Routledge and Kegan Paul, London, 1969
7. Dikshit R. D., Geographical Thought: A Contextual History of Ideas, Prentice Hall of India Pvt. Ltd. 2000

M.A./M.Sc. Geography
First Semester
Practical -I (M1GEOG2-CP01) Surveying & Leveling

Unit – I Introduction

a) Surveying as an art and science, principles of surveying
b) General errors and inaccuracies in surveying
c) Precautions in using survey instruments
d) Trignometrical methods of solution of triangles and computation of lengths

Unit – II Plane table

a) Use of Plane Table in composite surveys and related methods, methods of resectioning
b) General planning of large area plane surveys
c) A composite survey of college campus or village/neighborhood
d) Drawing of control points and surveyed plan

Unit – III Theodolite and Tacheometer

a) Theodolite as an instrument of surveying and leveling, adjustment of Theodolite
b) Computation of Theodolite bearings
c) Computation of length of triangles and plotting of control points
d) Telemetry: stadia and tangential

Unit – IV Clinometer

a) Use of Clinometer as instrument of leveling
b) Measuring spot heights
c) Contouring and interpolation of contours
d) Drawing of profiles

Unit – V Dumpy level

a) Use of Dumpy level as an instrument of leveling and adjustment of the dumpy level
b) Principles: calculation of difference of level, series leveling, back sights, foresights, intermediate sights
c) Level book and computation of reduced level: Rise and Fall and collimation method
d) Plotting of profiles

Note:

1. Candidates will submit following exercises as record work:
   i. Resectioning: 3 exercises of geographical methods of Llano's, Bessel's and trial and error
   ii. Profiles: 2 exercises based on leveling measurements obtained with dumpy level
   iii. Contouring: 1 exercise based on leveling measurements obtained with dumpy level
   iv. Contouring: 1 exercise based on leveling measurements obtained with clinometers
   v. Measuring and plotting reduced levels using tacheometer: 2 exercises
   vi. Triangulation survey based on a minimum of 15 control points using theodolite: 2 exercises including one related to composite survey
   vii. Plan of un-surveyed campus/neighbourhood/village area based on composite survey: 1 exercise (10 day's camp)
   viii. Thematic maps showing characteristics of the surveyed area: form of built-up area, and building material: 6 exercises

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2. All exercises will be based on surveying and leveling work done by the candidates themselves for areas hitherto un-surveyed

References:

1. Clark, D., Plane and Geodetic Surveying, Constable
2. Davis, R. E. and F. S. Foot, Surveying: Theory and Practice, McGraw Hill
3. Hinks, H.R., Map and Survey, Cambridge
4. Kanetkar, T. P., Surveying and leveling, Volume I & II, A. U. Grah Prakashan
5. Kiley, P. T., Surveying and leveling, Volume I & II, A. U. Grah Prakashan
6. Survey Manual, Volume I-VIII, Survey of India
7. Williamson, J. T., Surveying and Field Work, Constable

Practical Exam Scheme

Distribution of Marks: - Total Marks (100) = Internal marks (20) + External marks (80)

Internal marks- 20

1. Test paper - 10 Marks
2. Objective paper - 10 marks (10 objective questions)

External marks-80

Candidates will be examined by an external examiner in consultation with the internal examiner

The distribution of 80 marks will be as follows:

A. Test paper	-	20 Marks
B. Survey exercise	-	25 Marks
C. Record work	-	15 Marks
D. Viva-voce	-	10 Marks
E. Performance in survey camp	-	10 marks

A- Test Paper – 20 marks

The practical test paper of two hours duration and candidates will be required to answer two questions out of four questions.

B- Survey exercise – 25 marks

Working on each instrument with following distribution of marks:

Instrument	Exercise	Marks	Time (minutes)
A. Plane Table	Resectioning	5	35-
B. Theodolite	Measurement of angle between two points	5	10
C. Dumpy Level	Measuring level difference between two distant points	5	10
D. Clinometer	Measuring heights of and level difference between two distant points	5	10
E. Tacheometer	Measurement distance of any distant point	5	10

The practical exercise, record work and viva-voce examination shall be conducted by external examiner in consultation with the internal examiner.

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M.A./M.Sc. Geography
First Semester
Practical -II (M1GEOG2-CP02) Air Photo Interpretation

Unit – I: Introduction

a) Definition
b) Scope
c) Development of aerial photography
d) Interpretation techniques

Unit – II: Types and quality of aerial photographs

a) Types of aerial photographs
b) Factors affecting quality of aerial photographs
c) Aerial photographs versus maps
d) Usages of aerial photographs in interdisciplinary research

Unit – III: Tools and geometry of air photography and interpretation:

a) Pocket stereoscope and mirror stereoscope
b) Aerial camera, lens and filters
c) Geometry of aerial photographs
d) Stereogram, stereo triplet and mosaic

Unit – IV: Basic air photo measurements:

a) Photographic scale
b) Measuring height of object
c) Calculation of area, number of strips and number of air photos
d) Measuring angles, direction and slope measurement

Unit – V

a) Elements of object identification,
b) Interpretation and mapping of natural landscapes
c) Interpretation and mapping of cultural landscapes
d) Field checking

Practical Exercises

Notes:
Students are required to perform one experiment from each unit during examination.

1) Stereo test
2) Orientation of stereo model under mirror stereoscope (1 exercise)
3) Calculate the photo base & flight line. (2 exercises)
4) Determination of photo/image scale (1exercise)
5) Determination of heights using single photograph (1exercise)
6) Objects identification by Pocket Stereograph (1 exercises)
7) Interpretation and mapping of natural landscapes :physical aspects, drainage patterns, river basins, and vegetation (8 exercises)
8) Interpretation and mapping of cultural landscapes: land use, agricultural utilisation, field patterns, cultural aspects, settlements and transportation lines (8 Exercises)

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One local field trip will be conducted for field verification of aerial photographs of Udaipur city and nearby areas. Students will be required to prepare a Field Report and submit along with the Record Work.

References

1. American Society of photogrammetry: Manual of remote sensing, ASP, Falls Church, VA, 1983
2. Avery, T. E., Interpretation of Aerial Photographs, Burges
3. Barrett, E. C. and L. F. Curtis, Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York, 1992
4. Compbell, J., Introduction to Remote Sensing, Guilford, New York, 1989
5. Curran, Paul J., Principles of Remote Sensing, Longman, London, 1985
6. Hord, R. M., Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989
7. Kennie and Methue, Remote Sensing in Civil Engineering Survey, University Press, London
8. Luder, D., Aerial Photograph Interpretation: Principles and Applications, McGraw Hill, New York, 1959
9. Plates, J. E. and L. W. Snagery, remote Sensing Techniques for Analysis, Hamilton Publishing Company
10. Robert, G. Reeves et al, Manual of Remote Sensing, Volume I & II
11. Smith, H. T. V., Aerial Photographs and their Applications, Appleton Century Crofts
12. Spurr, S. H., Photogrammetry and Photo Interpretation, Ronald Press
13. Talbut, A. Essentials of Aerial Surveying and Photo Interpretation
14. Thomas, M. Lillesand and Ralf W. Kefer, Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1994
15. Tomar, M. S. and A. R. Maslekar, Aerial Photographs in Land use and Forest Surveys, Kishore and Company, Dehradun

Practical Exam Scheme

Distribution of marks: - Total marks (100) = Internal marks (20) + External marks (80)

Internal marks - 20

1. The identification of objects (at least 10) on the air photo pairs shall be of 30 minutes duration and will carry 10 marks
2. Objective paper -10 marks (10 objective questions)

External marks - 80

Candidates will be examined by an external examiner in consultation with the internal examiner.

The distribution of 80 marks will be as follows:

A.	Test paper	-	25 Marks
B.	Lab exercise	-	30 Marks
C.	Record work	-	15 Marks
D.	Viva-voce	-	10 Marks

A- Test Paper – 25 marks

The Practical test paper of two hours duration and candidates will be required to answer two questions out of four questions.

B- Lab exercise – 30 marks

Practical exercise shall be of three hours duration and candidates will be required to attempt any 2 exercises out of 4 exercises based on aerial photographs.

C- Record work – 15 marks

D- Viva-Voce - 10 marks

The practical exercise, record work and viva-voce examination shall be conducted by external examiner in consultation with the internal examiner.

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M.A./M.Sc. Geography
Second Semester
Practical -II (M2GEOG2-CP04) Basics of Remote Sensing and Image Interpretation

UNIT I Basics of Remote Sensing

a) Historical development; significance of remote sensing in geographical studies
b) Electromagnetic Radiation (EMR) Spectrum; Laws of radiation
c) Stages of Remote Sensing, EMR interaction with earth's surface
d) Spectral signatures, typical spectral reflectance curves of vegetation, soil and water

UNIT II Remote Sensing Satellites and Platforms

a) Orbits and platforms for earth observation; Swath, Row, Path
b) Satellite and sensor types: geo-synchronous and polar satellites, active and passive systems
c) Sensor types: Along Track, Across Track
d) Sensor specifications of IRS and Landsat satellite series

UNIT III Image Characteristics

a) Image formats - BIL, BIP, BSQ; Image display, color composites
b) Fundamental image statistics, image histogram
c) Image resolutions - spatial, spectral, radiometric and temporal resolution
d) Characteristics of major satellite systems: IRS, Landsat, NOAA, IKONOS, World-View satellite System

UNIT III Image Preparation

a) Geometric errors: Types
b) Geometric corrections: Image to map rectification, georeferencing
c) Resampling techniques
d) Contrast enhancement techniques: stretching, histogram equalization, density slicing

Unit V Image Interpretation and Thematic Map Generation

a) Visual Image Interpretation: principles, elements, interpretation keys
b) Manual Digitization and map composition
c) Interpretation and mapping of natural landscapes using satellite image.
d) Interpretation and mapping of cultural landscapes using satellite image.

Practical Exercises:

1. Familiarization with the software –ILLWIS/ Erdas Imagine/ ENVI/ SAGA
2. Data acquisition-accessing satellite data of area of interest, digital referencing system
3. Data import and subset

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4. Observation and identification of earth's features in various spectral bands and different types of images (PAN/ multi-spectral)
5. Observation of spectral profiles of water, soil and vegetation
6. Analysis of image histograms
7. Image display – Grey scale, pseudo color, TCC, FCC
8. Georeferencing toposheets
9. Geometric correction- Image to map rectification: NN, Bi-linear and Cubic interpolation
10. Image enhancement: Stretching, interpretation of results
11. Image enhancement: Histogram Equalization, interpretation of results
12. Image enhancement: Density Slicing, interpretation of results
13. Identification of features using elements of visual interpretation
14. Thematic map generation using visual interpretation and on-screen manual digitization/ analog multi-spectral images: Natural landscape
15. Thematic map generation using visual interpretation and on-screen manual digitization/ analog images: Cultural landscape
16. Computation of area of different classes

Exercises will be implemented in ERDAS, ENVI, ILLWIS, SAGA or any other DIP Software as per availability. One computer system will be provided to each student for conducting practical exercises.

One local field trip will be conducted for field verification of satellite image of Udaipur city and nearby areas. Students will be required to prepare a Field Report and submit along with the Record Work.

Suggested Readings

1. American Society of Photogrammetry, 1983. *Manual of Remote Sensing*, ASP, Falls Church, VA
2. Barrett, E. C. and L. F. Curtis, 1992. *Fundamentals of Remote Sensing and Air Photo Interpretation*, Macmillan, New York
3. Campbell, J., 1989. *Introduction to Remote Sensing*, Guilford, New York
4. Chauniyal, D.D., 2004. *Remote Sensing and Geographical Information Systems* (**in Hindi**), Sharda Pustak Bhawan, Allahabad
5. Curran, Paul J., 1985. *Principles of Remote Sensing*, Longman, London
6. Jenson J.R., 1996. *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall, New Jersey
7. Jenson, J.R., 2000. *Remote Sensing of the Environment: An Earth Resource Perspective.* Perason Education
8. Lillesand, T.M., Keifer R.W. & Chipman, J.W., 2008. *Remote Sensing and Image Interpretation.* John Wiley & Sons, New Delhi
9. Pratt W.K., 1978. *Digital Image Processing.* Wiley, New York
10. Vyas P.R., Remote sensing and Geographical Information System : basics and Applications 2014

WEB RESOURCES

1. *Ebook on Remote Sensing Applications,* www.**nrsc**.gov.in/Learning_Centre_**EBook**.html
2. *E-Tutorial on Fundamentals of Remote Sensing*, Canada Centre for Mapping and Earth Observation, Natural Resources Canada, accessible at http://www.nrcan.gc.ca/earth-sciences/geomatics

Practical Exam Scheme

Distribution of Marks: Total marks (100) = Internal marks (20) + External marks (80)

Internal marks - 20

1. The identification of objects (at least 10) on the satellite imagery shall be of 30 minutes duration and will carry 10 marks.
2. Objective paper – 10 marks (10 objective questions)

External marks -80

Candidates will be examined by an external examiner in consultation with the internal examiner.
The distribution of 80 marks will be as follows:

A-	Test paper	-	25 Marks
B-	Lab exercise	-	30 Marks
C-	Record work	-	15 Marks
D-	Viva-voce	-	10 Marks

A- Test paper – 25 marks
The practical test paper of two hours duration and candidates will be required another two question out of four questions.

B- Lab exercise – 30 marks
Practical exercise shall be of three hours duration and candidates will be required to attempt any 2 exercises out of 4 exercises one based on the satellite imagery.

C- Record work – 15 marks

D- Viva-Voce - 10 marks

The practical exercise, record work and viva-voce examination shall be conducted by external examiner in consultation with the internal examiner.

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M.A./M.Sc. Geography
Second Semester
Skill-I (M2GEOG1-SKILL-01) Digital Cartography

Unit-I: Introduction

a) Nature & Scope
b) Concepts in Digital Cartography
c) Cartographic Visualization
d) Geo-visualization

Unit II: Overview of Software Packages

a) ArcGIS
b) QGIS
c) Microsoft Excel, SPSS
d) AUTOCAD

Unit-III: Maps

a) Introduction to maps: types
b) Cartographic communication – virtual, cognitive, temporal and permanent maps
c) Mapping techniques: preparation of dot, choropleth, isopleths chorochromatic and choroschematic maps
d) Map composition: symbolization, map layout, labeling and annotation

Unit IV: Diagrams

a) Construction of simple line, poly line, trend graphs
b) Construction of simple, multiple, compound bar diagrams, histograms
c) Construction of cartograms, value area cartograms
d) Preparation of maps using proportional squares, circles, spheres

Unit V: Cartographic Modeling

a) Cartographic modeling and its types
b) 3D modeling
c) TIN
d) DEM

Lab exercises

a) Preparation and editing of data in microsoft excel
a) Preparation and editing of data in SPSS
b) Generation of vector point, line, polygon map and cartographic symbolization
c) Map composition

References

1. Allpress, J.D., Visual geography, Part-I [George Harrap]
2. Bagrew,L.: History of Cartography, C.A.Watts and Co., London, 1964.
3. Barrett,E.C. and Curtis,L.F.: Introduction to Environmental Remote Sensing, Chapman and Hall Ltd., London, 1976.

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4. Bernhardsen, Tor, Geographic Information Systems, Viak IT, Longum Park, Norway, 1992
5. Lobeck, A.K. and Tellington, W.J., Military Maps and Air-Photographs [Mc Graw Hill]
6. Lobeck, A.K., Block Diagrams [John Wiley]
7. Mather, Paul M., 1991: Computer Applications in Geography, John Wiley & Sons, Inc., New York.
8. Monkhouse, F.J. and Wilkinson, H.R., Maps and Diagrams [Methuen]
9. Raisz, E., Principles of Cartography [Mc Graw hill]
10. Robinson, A.H., Elements of Cartography [John Wiley]
11. Stamp. L.D., Models
12. Sylvester, D., Maps and Landscape [George Philip and sons] Allpress, J.D., Visual geography, Part-I [George Harrap]

Practical Exam Scheme

Distribution of Marks: - Total marks (100) = Internal marks (20) + External marks (80)

Internal marks- 20

1. One assignment based on computer – 10 marks
2. Objective Paper- 10 marks (10 objective questions)

External marks-80

Candidates will be examined by an external examiner in consultation with the internal examiner.

The distribution of 80 marks will be as follows:

A. Test paper - 25 Marks
B. Lab exercise - 30 Marks
C. Record work - 15 Marks
D. Viva-voce - 10 Marks

A- Test Paper – 25 marks

The Practical test paper of two hours duration and candidates will be required another two question out of four questions.

B- Lab exercise – 30 marks

Practical exercise shall be of three hours duration and candidates will be required to attempt any 2 exercises out of 4 exercises based on computer.

C- Record work – 15 marks

D- Viva-Voce - 10 marks

The practical exercise, record work and viva-voce examination shall be conducted by external examiner in consultation with the internal examiner.

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M.A./M.Sc. Geography
Third Semester
Practical – II (M3GEOG2-CP06) Basics of Geographical Information System

UNIT I: Introduction to GIS

a) Definition, evolution and components of GIS
b) Representation of geographical data in GIS
c) Geospatial data structure and formats
d) Data models: raster and vector data models

UNIT II: Coordinate Systems and Transformation

a) Datums, ellipsoid , geoid
b) Projected and Geographic Coordinate Systems, UTM coordinate system
c) Geometric transformation: map to map, image to map
d) Resampling, Root Mean Square Error

UNIT III: Data Generation and Database Management

a) Data Input, Spatial data editing
b) Topology
c) Attribute data input and management: data types, data entry, joining and relating tables
d) Attribute data manipulation

UNIT IV: Data Exploration

a) Descriptive statistics
b) Spatial data query, attribute data query, raster data query
c) Data generalization; data classification; zonal statistics
d) Data visualization and map composition

UNIT V: Introduction to Web Data Sources

a) Google Earth
b) Bhuvan
c) Water Resources Information System (India-WRIS)
d) Open Street Maps (OSM)

Practical exercises will be done using available GIS software - QGIS & ArcGIS - any other GIS software available in the department. One computer per student will be provided. Students will be required to prepare a record work of the outputs of all exercises conducted in the lab. In addition the students will also be required to submit the outputs in soft copy in a CD.

Lab Exercises (No. of exercises):

1. Familiarization with the software (1)
2. Importing raster data in GIS (1)
3. Geo-referencing and projecting a toposheet (1)

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4. Geo-referencing and projecting a scanned map (1)
5. Generation of vector- point, line & polygon data - generating attribute data -GIS software (3)
6. Generation of vector- point, line & polygon data - generating attribute data - Google Earth (3)
7. Linking spatial and aspatial data- Table join (Excel file) (1)
8. Data visualization (2)
9. Computation of descriptive statistics (2)
10. Attribute data query (1)
11. Spatial data query (1)
12. Raster data query (1)
13. Data generalization (1)
14. Data classification (1)
15. Map composition (1)
16. Use of web sources for data acquisition using Bhuvan/ Google Earth/ India-WRIS/ OSM (3)

Suggested Readings

1. Bernhardsen, Tor, 1992. *Geographic Information Systems: An Introduction*. Wiley India
2. Burrough, P.A. and McDonnell, R., 1998. *Principles of Geographic Information Systems*. Oxford University Press, Oxford
3. Chang, Kang-tsung, 2003. *Introduction to Geographical Information Systems*. Tata McGraw Hill Publ. Co., New Delhi
4. Chauniyal, D.D., 2004. *Remote Sensing and Geographical Information Systems* **(in Hindi)**, Sharda Pustak Bhawan, Allahabad
5. Clarke, Keith C., 2003. *Getting Started with Geographical Information Systems*. Prentice Hall
6. Demeers, Michael N., 2000. *Fundamentals of Geographical Information Systems*, John Wiley, Singapore
7. Heywood, Ian, 2003. *An Introduction to Geographical Information Systems*. 2nd Ed. Pearson Publ. Co., Singapore
8. Lo, C.P. and Yeung, Albert K. W. 2002. *Concepts and Techniques of Geographic Information Systems*. Prentice Hall of India, New Delhi.
9. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. 1999. *Geographic Information Systems. Principles, Techniques, Management, Applications*. John Wiley, New York.
10. Reddy, M. Anji 2001. *Textbook of Remote Sensing and Geographic Information Systems*. B. S. Publs., Hyderabad.
11. Vyas P.R.,Remote Sensing and Geographical Information System and Remote Sensing : Basics and Applications, Rawat Publications, Jaipur, New Delhi-2014

WEB RESOURCES

1. www.qgistutorials.com
2. http://www.pasda.psu.edu/tutorials/gisbasics.asp
3. https://earth.google.com
4. bhuvan.nrsc.gov.in
5. india-wris.nrsc.gov.in

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6. https://openstreetmap.org
7. http://openstreetmap.in

Practical Exam Scheme

Practical exercise will be done using GIS software – QGIS, ArcGIS, Arc View, TNTMips, ERDAS or any other GIS Software available in the department. One computer per student will be provided.

Distribution of Marks: Total marks (100) = Internal marks (20) + External marks (80)

Internal marks- 20

1. One assignment based on computer – 10 marks
2. Objective paper- 10 marks (10 objective questions)

External marks-80

Candidates will be examined by an external examiner in consultation with the internal examiner

The distribution of 80 marks will be as follows:

A- Test paper	-	25 Marks
B- Lab exercise	-	30 Marks
C- Record work	-	15 Marks
D- Viva-voce	-	10 Marks

A- Test paper – 25 marks

The Practical test paper of two hours duration and candidates will be required another two question out of four questions.

B- Lab exercise – 30 marks

Practical exercise shall be of three hours duration and candidates will be required to attempt any 2 exercises out of 4 exercises based on different GIS Software.

C- Record work – 15 marks

Student will be required to prepare a record work of the output of all exercise conducted in the lab. In addition the students will also be required to submit the output in soft copy in a CD.

D- Viva-Voce - 10 marks

The practical exercise, record work and viva-voce examination shall be conducted by external examiner in consultation with the internal examiner.

M.A./M.Sc. Geography
Fourth Semester
Practical - I (M4GEOG1-CP07)

GEOSPATIAL TECHNIQUES FOR APPLIED GEOGRAPHICAL RESEARCH

UNIT I: Digital Image Processing: Data Preparation

a) Data preparation: geometric corrections, reprojection
b) Radiometric errors & corrections - image normalization, Dark Object Subtraction
c) Contrast enhancement - linear stretching techniques, non-linear -histogram equalization
d) Band ratioing- NDVI & NDWI

UNIT II: Thematic Map Generation

a) Image statistics, feature space
b) Unsupervised classification- Minimum distance
c) Supervised classification - training, signature evaluation, parametric (Maximum Likelihood) and non-parametric classifiers (Parallelepiped, Minimum Distance)
d) Accuracy assessment - overall, user's & producer's accuracy, Kappa

UNIT III: Spatial Analysis in GIS

a) Types of spatial analytical functions in GIS
b) Buffer, clip, update, union, intersection
c) Map overlay
d) Remote sensing and GIS data integration; sources of error

UNIT IV: Statistical Surfaces

a) Generation of statistical surfaces
b) Methods of spatial interpolation: linear, nonlinear- IDW
c) DEM, TIN and their derivatives
d) Terrain analysis

UNIT IV: Spatial Pattern Analysis

a) Point pattern analysis: Nearest Neighbour analysis
b) Spatial auto-correlation
c) Global indices (Geary's *c,* Global Moran's I & Getis-Ord General G Index)
d) Local indices (Local Moran's I & Getis- Ord Gi * index)

*** Laboratory Practical Exercises (No. of exercises)**

1 Introduction to Bhuvan/NASA portal (2)

2 Acquisition of satellite data and DEM (2)
3 Geo-referencing of toposheets (1)
4 Image to map rectification (1)
5 Radiometric correction of satellite images- DOS (1)
6 Contrast enhancement (2)
7 Image ratioing - generation and interpretation of NDVI image (1)
8 Thematic map generation using supervised classification (1)
9 Thematic map generation using unsupervised classification (1)
10 Extraction of topographic attributes and landscape features using DEM (3)
11 Spatial interpolation of point data using IDW and evaluation of results (4)
12 Settlement pattern analysis- Nearest Neighbor technique (1)
13 Computation of Geary's *c,* Global Moran's I & Getis-Ord General G Index and interpretation of results - population data (3)
14 Computation of Local Moran's I & Getis- Ord Gi * index and interpretation of results - population data (2)

Exercises will be implemented in ERDAS, ENVI, Illwis, QGIS, TNT Mips, Arc View, ArcGIS or any other DIP and GIS Software as per availability. One computer per student will be provided.

Suggested Readings

1. Chang, Kang-tsung, 2003: Introduction to Geographical Information Systems. Tata McGraw Hill Publ. Co., New Delhi
2. Chauniyal, D.D., 2004. *Remote Sensing and Geographical Information Systems* (**in Hindi**), Sharda Pustak Bhawan, Allahabad
3. Dobesch Hartwig, Dumolard Pierre & Dyras Izabela, 2007. *Spatial Interpolation for Climate Data* (Ed.), Geographical Information Systems Series, ISTE Ltd., USA
4. Goodchild, M.F., Park, B.O. and Steyaert, L.T. (Ed.) 1993, Environmental Modelling with GIS. Oxford University Press, Oxford.
5. Jenson J.R., 1996. *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall, New Jersey
6. Jenson, J.R., 2000. *Remote Sensing of the Environment: An Earth Resource Perspective.* Perason Education
7. Lillesand, T.M., Keifer R.W. & Chipman, J.W., 2008. *Remote Sensing and Image Interpretation*, John Wiley & Sons, New Delhi
8. Lloyd, Christopher D., 2010. *Spatial Data Analysis: An Introduction for GIS Users,* Oxford University Press
9. Longley, P. And Batty, M. (eds.) 1996. Spatial Analysis: Modelling in a GIS Environment. Geo-Information International, Cambridge
10. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. 1999. Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley, New York.
11. Maguirre, David J.; Michael F. Goodchild and David W. Rhind 1999. Geographical Information Systems: Principles and Application. Geo Information International, Vol.2, Longman Pub., N.Y.
12. Martin, D. 1996, Geographic Information Systems: Socio-economic Applications. Routledge, London
13. Mitchell Andy, 1999. *The ESRI Guide to GIS Analysis (Volume I) Geographic Patterns and Relationships*. ESRI Press, California.

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14. Mitchell Andy, 2009. *The ESRI Guide to GIS Analysis (Volume II) Spatial Measurements and Statistics*. ESRI Press, California.
15. American Society of Photogrammetry, 1983. *Manual of Remote Sensing*, ASP, Falls Church, VA
16. Barrett, E. C. and L. F. Curtis, 1992. *Fundamentals of Remote Sensing and Air Photo Interpretation*, Macmillan, New York
17. Campbell, J., 1989. *Introduction to Remote Sensing*, Guilford, New York
18. Chauniyal, D.D., 2004. *Remote Sensing and Geographical Information Systems* **(in Hindi)**, Sharda Pustak Bhawan, Allahabad
19. Curran, Paul J., 1985. *Principles of Remote Sensing*, Longman, London
20. Jenson J.R., 1996. *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall, New Jersey
21. Jenson, J.R., 2000. *Remote Sensing of the Environment: An Earth Resource Perspective.* Perason Education
22. Lillesand, T.M., Keifer R.W. & Chipman, J.W., 2008. *Remote Sensing and Image Interpretation.* John Wiley & Sons, New Delhi
23. Pratt W.K., 1978. *Digital Image Processing.* Wiley, New York

WEB RESOURCES

1. *Ebook on Remote Sensing Applications,* www.**nrsc**.gov.in/Learning_Centre_**EBook**.html
2. *E-Tutorial on Fundamentals of Remote Sensing*, Canada Centre for Mapping and Earth Observation, Natural Resources Canada, accessible at http://www.nrcan.gc.ca/earth-sciences/geomatics

Practical Exam Scheme

Distribution of Marks: Total marks (100) = Internal marks (20) + External marks (80)

Internal marks- 20

1. One assignment based on computer - 10 marks
2. Objective paper - 10 marks (10 objective questions)

External marks-80

Candidates will be examined by an external examiner in consultation with the internal examiner
The distribution of 80 marks will be as follows:

A- Test paper	-	25 Marks
B- Lab exercise	-	30 Marks
C- Record work	-	15 Marks
D- Viva-Voce	-	10 Marks

A- Test paper – 25 marks
The practical test paper of two hours duration and candidates will be required answer two questions out of four questions.

B- Lab exercise – 30 marks
Practical exercise shall be of three hours duration and candidates will be required to attempt any 2 exercises out of 4 exercises based on different GIS Software.

C- Record work – 15 marks
Student will be required to prepare a record work of the outputs of all exercises conducted in the lab. In addition the students will also be required to submit the output in soft copy in a CD.

D- Viva-Voce - 10 marks
The practical exercises, record work and viva-voce examination shall be conducted by external examiner in consultation with the internal examiner.

HEAD
DEPARTMENT OF GEOGRAPHY
M.L. SUKHADIA UNIVERSITY
UDAIPUR (Rajasthan)

M.A./ M.Sc. Geography
Fourth Semester
Practical - II (M4GEOG2-CP08)

PROJECT WORK ON NATURAL RESOURCE MANAGEMENT USING RS-GIS

UNIT I: Overview of Applications of Remote Sensing and GIS

a) Natural resource evaluation and management
b) Urban planning and management
c) Land use planning and management
d) Environmental management & hazard mapping

UNIT II: Overview of Applications of Remote Sensing and GIS

a) Socio-economic applications
b) Health GIS
c) Water resource management
d) Agricultural studies

UNIT III-V: Project Planning, Execution and Writing of Project Report

Theme of project may be selected from any of the fields outlined in Unit I & II or any other problem of student's/ supervisor's choice with a geographical perspective analysed using geo-spatial methodology. The theme may range from methodological issues to real world geographical applications. Students will be required to get the selected theme approved by the concerned supervising faculty by way of presentation of synopsis in a class seminar.

The paper is divided into two parts. Part 1 (Unit I & II) comprises class room teaching. The students will be introduced to applications of RSGIS technology for applied geographical research. Subsequently, students will be required to take up a small case study as Part 2 (Unit III -V), essentially applying the geospatial tools for decision making and analysis. The case study will be carried out under supervision of internal faculty of the department. The project report will be of approximately 30-50 pages.

References

1. *Ebook on Remote Sensing Applications,* www.**nrsc**.gov.in/Learning_Centre_**EBook**.html
2. Chauniyal, D.D., 2004. *Remote Sensing and Geographical Information Systems* **(in Hindi)**, Sharda Pustak Bhawan, Allahabad
3. Lillesand, T.M., Keifer R.W. & Chipman, J.W., 2008. *Remote Sensing and Image Interpretation.* John Wiley & Sons, New Delhi
4. Vyas P.R.,Remote Sensing and Geographical Information System and Remote Sensing : Basics and Applications, Rawat Publications, Jaipur, New Delhi-2014

Practical Exam Scheme

Distribution of Marks: Total marks (100) = Internal marks (20) + External marks (80)

Internal marks- 20

Seminar presentation: 20 marks

External marks-80

The project will be based and analysed by using RS data in any of the GIS Software.
Project report will be examined by external examiner.
Project report: 80 marks

HEAD
DEPARTMENT OF GEOGRAPHY
S.S.S.H. M.L. SUKHADIA UNIVERSITY
UDAIPUR (Rajasthan)

M.A./M.Sc. Geography
Fourth Semester
Skill -II (M4GEOG1-Skill-02) Statistical Analysis Using Software

UNIT I – Data

a) Measurement levels
b) Data types, database file formats
c) Cases and variables
d) Defining variables

UNIT II – Data Entry

a) Data import
b) Data entry
c) Data editing
d) Data manipulation

UNIT III – Data Distribution

a) Preparation of line graphs
b) Preparation of bar diagrams
c) Preparation of histograms
d) Preparation of pie diagrams

UNIT IV – Data Analysis: Computation of Fundamental Descriptive Statistics

a) Mean, median, mode
b) Measures of dispersion – standard deviation, Z-Scores, box plots
c) Measures of symmetry – skewness
d) Kurtosis

UNIT V – Analyzing Relationships

a) Preparation of scatter plot
b) Computation of correlation
c) Computation of regression
d) Output generation and export in different formats

**Exercises will be done in available statistical software – Microsoft Excel and SPSS*

Practical Exam Scheme

Distribution of marks: Total marks (100) = Internal marks (20) + External marks (80)

Internal marks- 20

3. One assignment based on statistical software using valid data – 10 marks.
4. Objective paper – 10 marks (10 objective questions)

External marks - 80

Candidates will be examined by an external examiner in consultation with the internal examiner.
The distribution of 80 marks will be as follow:

A. Test paper - 25 Marks
B. Lab exercise - 30 Marks
C. Record work - 15 Marks
D. Viva-voce - 10 Marks

HEAD
DEPARTMENT OF GEOGRAPHY
M. L. SUKHADIA UNIVERSITY
UDAIPUR (Rajasthan)

DEPARTMENT OF GEOGRAPHY

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES

Meeting of the Committee of Courses (CoC) in Geography held in hybrid (online and physical) mode at 11.00 AM on 22.07.2023 in Smart Class Room, Department of Geography, UCSSH, MLSU, Udaipur.

The following were present:

1. Prof. Seema Jalan - Convener
2. Prof. M.S. Nathawat - External member (Online)
3. Dr. Palak Bhardwaj - Internal Member (Online)
4. Dr. Monika Roat - Internal Member (Online)
5. Dr. Devendra Singh Chouhan - Internal Member
6. Dr. Bhanwar V. R. Singh - Internal Member

Prof. A.R.Siddiqui, External Member could not attend the meeting.

At the outset the Convener extended warm welcome to all the members in the meeting.

The following business was transacted:

1. The Action Taken Report on the resolutions of the meeting of the CoC held on 29.09.2023 was unanimously approved by all the members.

2. **Agenda No. 1 :** To consider the curriculum of three year Undergraduate Programme in Geography revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020.

   Prof. Seema Jalan made a detailed presentation of the scheme and syllabus of Geography for the three year Undergraduate Programme with multiple entry exit options revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020. It was also informed that the revised scheme and curriculum will be implemented in all the constituent and affiliated colleges of the University from Academic Session 2023-24.

   Resolution : The Committee deliberated upon the proposed revised scheme and structure of the revised curriculum of the three year degree programme for Geography subject, and also discussed the syllabi of the Courses included therein in detail. It was resolved to recommend the curriculum appended as *Annexure 1*

for implementation in all the constituent and affiliated colleges of the University w.e.f. Academic Session 2023-24.

3. **Agenda No. 2 :** To consider the curriculum of the 'Certificate Program on Basics of Remote Sensing, Geographical Information System and Global Navigation Satellite System' to be offered under the Geospatial Skill Development Centre & Entrepreneurship Cell (GSDEC), RUSA 2.0 w.e.f. January, 2024.

   Resolution : The item was deferred. To be discussed in next meeting of the CoC.

4. Prof. M.S. Nathawat suggested that the evaluation scheme with weightage of 100 marks for both Theory and Practical Courses of 04 and 02 credits respectively may be reconsidered. The weightage may be made proportional to the credit weightage of the course and be aligned with the weightage of 100 marks for 06 credits courses in non-practical disciplines.

The meeting ended with a vote of thanks to the Chair.

22.7.2023

(Dr. Devendra Singh Chouhan) (Prof. Seema Jalan) (Prof. M.S. Nathawat)

22/07/23

(Dr. Monika Roat) (Dr. Palak Bhardwaj) (Dr. Bhanwar V.R. Singh)

Gmail **Seema Jalan <seemajalan1@gmail.com>**

Minutes and UG Curriculum for approval

3 messages

Seema Jalan <seemajalan1@gmail.com> Sat, Jul 22, 2023 at 2:49 PM
To: MS Nathawat <msnathawat@ignou.ac.in>

Respected Sir

Please find attached the Minutes and UG Scheme for approval.

Thank you for your valuable time and very insightful observations.

With kind regards

--

Seema Jalan
Professor & Head
Department of Geography
Member, Board of Management
Member, Academic Council
Convener, Committee of Courses in Geography
Coordinator, Geospatial Skill Development & Entrepreneurship Cell
Mohan Lal Sukhadia University
Udaipur (Rajasthan) -313001
seemajalan1@gmail.com ; seemajalan1@mlsu.ac.in

Mobile: 09887643513

2 attachments

FINAL SCHEME_UG.pdf
10064K

minutes_CoC.pdf
360K

MS Nathawat <msnathawat@ignou.ac.in> Sat, Jul 22, 2023 at 3:02 PM
To: Seema Jalan <seemajalan1@gmail.com>

Approved.
Prof Mahendra Singh Nathawat
[Quoted text hidden]

Seema Jalan <seemajalan1@gmail.com> Sat, Jul 22, 2023 at 11:07 PM
To: MS Nathawat <msnathawat@ignou.ac.in>

Thank you Sir
[Quoted text hidden]

Gmail **Seema Jalan <seemajalan1@gmail.com>**

Minutes and UG Curriculum for approval

3 messages

Seema Jalan <seemajalan1@gmail.com> Sat, Jul 22, 2023 at 2:58 PM
To: bhardwajpalak54@gmail.com

Dear Madam,

Please find attached the Minutes and UG Scheme for approval.

Thank you for your valuable time .

With kind regards

--

Seema Jalan
Professor & Head
Department of Geography
Member, Board of Management
Member, Academic Council
Convener, Committee of Courses in Geography
Coordinator, Geospatial Skill Development & Entrepreneurship Cell
Mohan Lal Sukhadia University
Udaipur (Rajasthan) -313001
seemajalan1@gmail.com ; seemajalan1@mlsu.ac.in

Mobile: 09887643513

2 attachments

minutes_CoC.pdf
360K

FINAL SCHEME_UG.pdf
10064K

Palak Bhardwaj <bhardwajpalak54@gmail.com> Sat, Jul 22, 2023 at 3:02 PM
To: Seema Jalan <seemajalan1@gmail.com>

Good afternoon mam,
I checked the draft and it's approved.
[Quoted text hidden]

Seema Jalan <seemajalan1@gmail.com> Sat, Jul 22, 2023 at 11:08 PM
To: Palak Bhardwaj <bhardwajpalak54@gmail.com>

Thanks Madam
[Quoted text hidden]

Gmail **Seema Jalan <seemajalan1@gmail.com>**

for approval of syallabus

2 messages

Dr. Monika Roat <drmonika16@gmail.com> Sat, Jul 22, 2023 at 3:06 PM
To: "seemajalan1@gmail.com" <seemajalan1@gmail.com>

MADAM
AS PER DISCUSSION ON THE GOOGLE MEET I HEARTLY APPPRICIATE YOUR EFFERTS REGARDING SYLLABUS. THIS IS APPROVED FROM MY SIDE
REGARDS
Dr. Monika Roat
Department of Geography
S.M.B.Government College
Nathdawara(Raj.) INDIA
PIN-314001
Mobile No.-+91 9413255515

Seema Jalan <seemajalan1@gmail.com> Sat, Jul 22, 2023 at 11:08 PM
To: "Dr. Monika Roat" <drmonika16@gmail.com>

Thanks Madam
[Quoted text hidden]
--
Seema Jalan
Professor & Head
Department of Geography
Member, Board of Management
Member, Academic Council
Convener, Committee of Courses in Geography
Coordinator, Geospatial Skill Development & Entrepreneurship Cell
Mohan Lal Sukhadia University
Udaipur (Rajasthan) -313001
seemajalan1@gmail.com ; seemajalan1@mlsu.ac.in

Mobile: 09887643513

DEPARTMENT OF GEOGRAPHY

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

COMMITTEE OF COURSES IN GEOGRAPHY

MINUTES OF THE MEETING DATED 28.08.2023

Meeting of the Committee of Courses (CoC) in Geography held online at 02.00 PM on 28.08.2023 in Department of Geography, UCSSH, MLSU, Udaipur.

The following were present:

1. Prof. Seema Jalan - Convener
2. Prof. M.S. Nathawat - External member
3. Prof. A.R.Siddiqui - External Member
4. Prof. Palak Bhardwaj - Internal Member
5. Prof. Monika Roat - Internal Member
6. Dr. Devendra Singh Chouhan - Internal Member
7. Dr. Bhanwar V. R. Singh - Internal Member

At the outset the Convener extended warm welcome to all the members in the meeting.

The following business was transacted:

1. The Action Taken Report on the resolutions of the meeting of the CoC held on 22.07.2023 was unanimously approved by all the members.

2. **Agenda No. 1 :** To consider the curriculum of **First and Second Semester of the two year Masters (Post Graduate) Degree Programme in Geography** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020 (Enclosed).

   Prof. Seema Jalan made a detailed presentation of the scheme and syllabus of Geography for the structure, scheme and syllabi of the graduate **First and Second Semester of the two year Postgraduate (Masters)** Programme with multiple entry exit options revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020. It was also informed that the revised scheme and curriculum will be implemented in all the constituent and affiliated colleges of the University from Academic Session 2023-24.

   Resolution : The Committee deliberated upon the proposed revised scheme and structure of the revised curriculum of the **First and Second Semester of the two**

year Postgraduate (Masters) Programme for Geography subject, and also discussed the syllabi of the Courses included therein in detail. It was resolved to recommend the curriculum appended as *Annexure 1* for implementation in all the constituent and affiliated colleges of the University w.e.f. Academic Session 2023-24.

The meeting ended with a vote of thanks to the Chair.

(Prof. A.R. Siddiqui) (Prof. M.S. Nathawat) (Prof. Seema Jalan)

(Dr. Devendra Singh Chouhan) (Prof. Monika Roat) (Prof.Palak Bhardwaj)

(Dr. Bhanwar V.R. Singh)

Gmail **Seema Jalan <seemajalan1@gmail.com>**

Approved

2 messages

Dr. Monika Roat <drmonika16@gmail.com> Mon, Aug 28, 2023 at 3:41 PM
To: seemajalan1@gmail.com

Madam Good afternoon As per discussion on the google meet I heartly Appriciate your efforts regarding P G syllabus in my opinion its good for the students future so i approved from my side With regards Prof. Monika roat Department of geography smb govt college Nathdwara

--
Dr. Monika Roat
Department of Geography
S.M.B.Government College
Nathdawara(Raj.) INDIA
PIN-314001
Mobile No.-+91 9413255515

Seema Jalan <seemajalan1@gmail.com> Mon, Aug 28, 2023 at 3:42 PM
To: "Dr. Monika Roat" <drmonika16@gmail.com>

Thanks Madam
[Quoted text hidden]

--
Seema Jalan
Professor & Head
Department of Geography
Member, Board of Management
Chairperson, Faculty of Earth Sciences
Member, Academic Council
Convener, Committee of Courses in Geography
Coordinator, Geospatial Skill Development & Entrepreneurship Cell
Mohan Lal Sukhadia University
Udaipur (Rajasthan) -313001
seemajalan1@gmail.com ; seemajalan1@mlsu.ac.in

Mobile: 09887643513

Gmail **Seema Jalan <seemajalan1@gmail.com>**

Minutes of the Meeting of the CoC dated 28.08.2023

5 messages

Seema Jalan <seemajalan1@gmail.com> Mon, Aug 28, 2023 at 3:42 PM
To: MS Nathawat <msnathawat@ignou.ac.in>, AR Siddiqui <aziz_rs1970@yahoo.co.in>, Palak Bhardwaj <bhardwajpalak54@gmail.com>, "Dr. Monika Roat" <drmonika16@gmail.com>

Esteemed Members
Committee of Courses of Geography
Mohanlal Sukhadia University
Udaipur

Dear Sir/Madam
At the outset I extend a hearty thanks to all esteemed members for active participation and valuable suggestions in finalizing the PG Curriculum considered in the meeting.
Please find enclosed Minutes of the Meeting for consideration and approval.

With kind regards

--
Seema Jalan
Professor & Head
Department of Geography
Member, Board of Management
Chairperson, Faculty of Earth Sciences
Member, Academic Council
Convener, Committee of Courses in Geography
Coordinator, Geospatial Skill Development & Entrepreneurship Cell
Mohan Lal Sukhadia University
Udaipur (Rajasthan) -313001
seemajalan1@gmail.com ; seemajalan1@mlsu.ac.in

Mobile: 09887643513

minutes_CoC_28.08.23.pdf
523K

MS Nathawat <msnathawat@ignou.ac.in> Mon, Aug 28, 2023 at 3:45 PM
To: Seema Jalan <seemajalan1@gmail.com>
Cc: AR Siddiqui <aziz_rs1970@yahoo.co.in>, Palak Bhardwaj <bhardwajpalak54@gmail.com>, "Dr. Monika Roat" <drmonika16@gmail.com>

Dear Prof Seema Jalan,
I approved the minutes of today's meeting.
Regards
Prof Nathawat
[Quoted text hidden]

MS Nathawat <msnathawat@ignou.ac.in> Mon, Aug 28, 2023 at 3:47 PM
To: Seema Jalan <seemajalan1@gmail.com>
Cc: AR Siddiqui <aziz_rs1970@yahoo.co.in>, Palak Bhardwaj <bhardwajpalak54@gmail.com>, "Dr. Monika Roat" <drmonika16@gmail.com>

Dear Prof Seema Jalan,
I approve the minutes of today's meeting. Thank you
Regards
Prof Nathawat

PS. Please ignore the previous mail as there was a typo mistake.

Show quoted text

[Quoted text hidden]

Palak Bhardwaj <bhardwajpalak54@gmail.com> Mon, Aug 28, 2023 at 3:49 PM
To: Seema Jalan <seemajalan1@gmail.com>

Approved
[Quoted text hidden]

minutes_CoC_28.08.23.pdf
523K

AR Siddiqui <aziz_rs1970@yahoo.co.in> Mon, Aug 28, 2023 at 3:56 PM
To: Seema Jalan <seemajalan1@gmail.com>

Dear Professor Seema Jalan Ji,

I approve the minutes of the meeting of the CoC dated 28-08-2023

With Regard's
Dr. A.R.Siddiqui
Professor and Former Head
Department of geography
University of Allahabad
(U.P.),INDIA

[Quoted text hidden]

DEPARTMENT OF GEOGRAPHY

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

COMMITTEE OF COURSES IN GEOGRAPHY

MINUTES OF THE MEETING DATED 29.04.2024

Meeting of the Committee of Courses (CoC) in Geography was held online at 11.00 AM on 29.04.2024 in Department of Geography, UCSSH, MLSU, Udaipur.

The following were present:

In person

1. Prof. Seema Jalan - Convener
2. Dr. Devendra Singh Chouhan - Internal Member
3. Dr. Bhanwar V. R. Singh - Internal Member
4. Dr. Urmi Sharma - Invited member

Online

5. Prof. M.S. Nathawat - External member
6. Prof. A.R.Siddiqui - External Member
7. Prof. Palak Bhardwaj - Internal Member
8. Prof. Monika Roat - Internal Member

At the outset the Convener extended warm welcome to all the members in the meeting.

The following business was transacted:

1. The Action Taken Report on the resolutions of the meeting of the CoC held on 28.08.2023 was unanimously approved by all the members. The Convener reported that as per suggestions of the Nodal Officer, NEP of the University, minor corrections were made in Course Codes in the scheme of UG program and PG I & II Semester recommended in the previous meetings held on 22.07.2023 and 28.08.2023. The scheme with revised codes had been submitted for approval in the Faculty, Academic Council and Board of Management, and has been implemented from the present academic session.

   The changes were unanimously approved by the House.

2. **Agenda No. 1 :** To consider the curriculum of **Third and Fourth Semester of the two year Masters (Post Graduate) Degree Program in Geography** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020.

   Prof. Seema Jalan made a detailed presentation of the scheme and syllabus of Geography for the structure, scheme and syllabi of the Third and Fourth Semester of the two year Postgraduate (Masters) Program.

Resolution : The Committee deliberated upon the proposed scheme and structure of the revised curriculum of the **Third and Fourth Semester of the two year Postgraduate (Masters)** Program for Geography subject, and also discussed the syllabi of the Courses included therein in detail. Some suggestions were given by the members which were incorporated in the syllabi.

The Committee also noted that the 'Field Survey / Educational Tour' component needs to be further strengthened in the Curriculum. For post-graduate program its geographical coverage should essentially include entire country to introduce the students to the varied topography, resource and cultural regions of the country, and provide exposure to the specialized fields through visit to premier research and higher education institutions. In order to meet the constraints of fund availability for the purpose and inability of the students to afford higher costs incurred for visits to distant places or long duration trips, the University may be requested to increase the fund under the 'Survey' head to Rs. 01 Lakh per year. The Head of the Department should prepare a proposal and submit in the University for consideration.

It was resolved to recommend the curriculum appended as *Annexure 1* for implementation in all the constituent and affiliated colleges of the University w.e.f. Academic Session 2023-24. The house authorized the Convener to make changes in the credit weightage/ hourly requirements and/ or course codes of the recommended draft curriculum, if required as per the common scheme prescribed by the University.

3. **Agenda No. 2 :** To consider the scheme and curriculum of **'Certificate Program on Basics of Remote Sensing, Geographical Information System and GNSS'** to be offered under Geospatial Skill Development Centre and Entrepreneurship Cell (GSDEC) on **Self Finance Scheme (SFS) mode.**

Members' suggestions were sought regarding the fee structure, eligibility, target group, evaluation scheme and mode of delivery of the program.

Resolution : The Committee deliberated upon the proposed scheme and curriculum of the 'Certificate Program on Basics of Remote Sensing, Geographical Information System and GNSS' (*Annexure 2*) to be offered under Geospatial Skill Development Centre and Entrepreneurship Cell (GSDEC) on Self Finance Scheme (SFS) mode. It was resolved to recommend the same for implementation w.e.f. Academic Session 2024 - 25. The following suggestions were incorporated :

Fee structure : INR 10,000 for entire program

Eligibility : Senior secondary from any stream having knowledge of Science and Mathematics till secondary, and good working skills in Computers.

Target group : Open to students of graduate, post graduate, doctoral program of all faculties in or outside the University ; Professionals ; any applicant with basic eligibility.

Evaluation Scheme: The evaluation scheme appended at *Annexure 3* was considered and recommended.

The Committee resolved to recommend the scheme and curriculum of **'Certificate Program on Basics of Remote Sensing, Geographical Information System and**

GNSS' appended at *Annexure 2* with examination scheme appended at *Annexure 3* to be offered under Geospatial Skill Development Centre and Entrepreneurship Cell (GSDEC), Department of Geography on Self Finance Scheme (SFS) mode. The program may be implemented w.e.f. Academic Session 2024 - 25.

Table Agenda

4. **Table Agenda No. 1 :** To consider the inclusion of Geography as a subject to be offered as a subject combination with other subjects of Faculty of Science at graduate level leading to Certificate, Diploma and Bachelor's (B.Sc.) degree with Geography.

   Resolution : The proposal the unanimously welcomed and approved by the House in light of the following :

   1. Mandate of New Education Policy for encouraging inter-disciplinary programs.
   2. Enhance career prospects of students of Faculty of Science in view of immense significance of the subject for competitive examinations.
   3. To bring the University at par with several other leading State and Central Universities across the country where Geography is being offered under Faculty of Science.
   4. The discipline must be a part of Science due to its very nature and pedagogy.
   5. Parity with the other two sister disciplines – Geology and Environmental Science – under the Faculty of Earth Science.

   It was strongly recommended that Geography may be offered as a subject combination with other subjects of Faculty of Science at graduate level leading to Certificate, Diploma and Bachelor's (B.Sc.) degree with Geography with effect from Academic Session 2025-26.

The meeting ended with a vote of thanks to the Chair.

Online Approval attached
(Prof. A.R. Siddiqui)

Online Approval attached.
(Prof. M.S. Nathawat)

(Prof. Seema Jalan)

(Dr. Devendra Singh Chouhan)

Online Approval attached.
(Prof. Monika Roat)

Online Approval attached
(Prof. Palak Bhardwaj)

(Dr. Urmi Sharma)

(Dr. Bhanwar V.R. Singh)

(Dr. Surendra Singh Kathayat)

(Faculty Chairperson)

(Dr. Kitesh Purohit)

DEPARTMENT OF GEOGRAPHY
Faculty of Earth Sciences
Mohanlal Sukhadia University, Udaipur (Raj.) – 313 001

MEETING OF THE COMMITTEE OF COURSES (CoC) IN GEOGRAPHY

29 JUNE, 2024

Action Taken Report on the Resolutions of the meeting held on 28.08.2023

Resolution No.	Resolution	Action Taken
1	Recommendation of the curriculum of First and Second Semester of the two year Masters (Post Graduate) Degree Program in Geography revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020	Approved in meeting of Faculty of Earth Sciences dated 28.08.2023, Academic Council dated 05.10.2023 and Board of Management dated 18.12.2023. Minor corrections done in Course Codes as suggested by Nodal Officer, NEP per the University prescribed common guidelines. Approval accorded by the University vide Order No. F./ MLSU/M/ 2023/ 3019 dated 31.10.2023. The new scheme has been notified by the University for implementation in all affiliated and constituent colleges vide Notification no. F./215/Gen/ MLSU/2023/1375 dated 03.11.2023.

HEAD & CONVENER

FACULTY OF EARTH SCIENCE

Mohanlal Sukhadia University, Udaipur (Rajasthan)

Prof. B.R. BAMNIYA
Chairman

M- +919413812316
Email✉: brbamniya@yahoo.co.in

No: ES/MLSU/2023/3412

Date: 22-07-2023
31

MINUTES OF THE MEETING OF THE FACULTY OF EARTH SCIENCE HELD ON 22-07-2023

A meeting of Faculty of Earth Science was held at 3.00 PM in the Chamber of the HEAD, Department of Environmental Sciences on 22-07-2023.

Following members were present in the meeting:

1. Prof. B. R. Bamniya — Chairman
2. Prof. Seema Jalan — Head, Department of Geography
3. Prof. Ritesh Purohit — Head, Department of Geology

As per agenda of the meeting following decisions were taken:

1. Minutes of the Committee of Courses according to New Scheme for UG and PG Programme as per NEP were approved for Environmental Sciences department. (Minutes of CoC enclosed)
2. Minutes of the Committee of Courses according to New Scheme for UG and PG Programme as per NEP were approved for Geology department. (Minutes of CoC enclosed)
3. Minutes of the Committee of Courses according to New Scheme for UG as per NEP were approved for Geography department. (Minutes of CoC enclosed)

Prof. B.R. Bamniya
(Chairman)

Prof. Seema Jalan
(Head, Department of Geography)

HEAD
Dept. of Geography
MLSU, Udaipur

Dr. Ritesh Purohit
(Head, Department of Geology)

Head of the Department
Department of Geology
M.L. Sukhadia University
UDAIPUR

Prof. Seema Jalan
Head & Chairperson
Faculty of Earth Sciences

Academic Council Item No. 4.1 Pg 5-8 (3)

FACULTY OF EARTH SCIENCES
Mohanlal Sukhadia University
Udaipur (Raj.) – 313 001
Mobile:9887643513; E-mail:seemajalan1@mlsu.ac.in

No. MLSU/ Geog./FES/ 2023/ 1982

Dated: August 19, 2023

The Registrar
Mohanlal Sukhadia University
Udaipur

Subject: Submission of the minutes of the meeting of Faculty of Earth Sciences for approval.
Ref.: Order No. F./MLSU/M/2023/2998 dated 05.08.2023.

Dear Sir,

1. A meeting of the Faculty of Earth Sciences was held on 22.07.2023 for consideration of the recommendations of the Committee of Courses (CoCs) of subjects under the Faculty, regarding the Course Structure and Curriculum framework for UGC-TDC and PG (Two Years) as per the NEP-2020 framework and guidelines issued by the Nodal Officer. The Minutes of the Meeting (MoM) are enclosed herewith for your kind perusal.

2. The recommendations of the respective CoCs regarding the following programmes have been approved in the meeting :

   - Recommendation of the CoC of **Environmental Science** regarding **UG TDC (All Semesters) and PG programme (Only I & II Semester)** (Minutes of the CoC Have been enclosed as *Annexure 1* of the MoM along with syllabus duly signed by local members of the CoC).
   - Recommendation of the CoC of **Geology** regarding **UG TDC (All Semesters) and PG programmes** (Two Year PG M.SC. and One Year Post Graduate M.Sc. Tech. in Applied Geology) (Minutes of the CoC enclosed as *Annexure 2* of the MoM along with syllabus duly signed by local members of the CoC).
   - Recommendation of the CoC of **Geography** regarding the **UG TDC programme** for **Geography** (Minutes of the CoC enclosed as *Annexure 3* of the MoM along with syllabus duly signed by local members of the CoC).

DR Meeting

You are requested to please do the needful for further approval of the Minutes and circulation of the Syllabi and Scheme.

19/8

It is hereby submitted that the following information regarding the new scheme still lacks clarity and it is not possible to fill in the final Course and Programme Codes in the documents.

1. Complete coding scheme of the UG/PG Programmes offered at Departmental levels.
2. Coding Scheme of AECC and Skill Courses.

You are requested to please arrange a meeting of the Faculty Chairpersons and the Nodal Officer for finalization of the coding scheme at University level.

Thanking you

Yours sincerely

Enclosures: As above.

(Prof. Seema Jalan)
Chairman
Faculty of Earth Sciences
Mohanlal Sukhadia University, Udaipur

FACULTY OF EARTH SCIENCES

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES OF THE MEETING OF FACULTY OF EARTH SCIENCES DATED 28.08.2023

Meeting of the Faculty of Earth Sciences was held in Department of Geography, UCSSH, MLSU, Udaipur at 1630 hrs on 28.08.2023.

The following were present:

1. Prof. Seema Jalan - Chairperson
2. Dr. Ritesh Purohit - Member

At the outset the Convener extended warm welcome to the members in the meeting.

The following business was transacted:

1. The Action Taken Report on the resolutions of the meeting of the Faculty held on 22.07.2023 was approved.

2. **Agenda No. 1 :** To consider the recommendation of the Committee of Courses of Geography regarding the curriculum of **First and Second Semester of the two year Masters (Post Graduate) Degree Programme in Geography** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020 (Enclosed).

   Resolution : The recommendation of the Committee of Courses of Geography regarding the curriculum of **First and Second Semester of the two year Masters (Post Graduate) Degree Programme in Geography** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020 was approved. In view of the urgency of circulation of the scheme in all the affiliated colleges for implementation with effect from the ongoing Academic Session 2023-24, it was resolved to recommend the curriculum appended as *Annexure 1* to Hon'ble Vice-Chancellor for further approval.

The meeting ended with a vote of thanks to the Chairperson.

28/8/23

(Dr. Ritesh Purohit)

(Prof. Seema Jalan)

FACULTY OF EARTH SCIENCES

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES OF THE MEETING OF FACULTY OF EARTH SCIENCES DATED 01.07.2024

Meeting of the Faculty of Earth Sciences was held at Department of Geography, UCSSH, MLSU, Udaipur at 1100 hrs on 01.07.2024.

The following were present:

1. Prof. Seema Jalan - Chairperson
2. Dr. Ritesh Purohit - Member
3. Dr. D.S. Rathore - Incharge Head, Deptt. of Env. Sc.
4. Dr. Anuya Verma - Asstt. Prof., Env. Sc. Invited Member

At the outset the Convener extended warm welcome to the members in the meeting.

The following business was transacted:

1. The Action Taken Report on the resolutions of the meeting of the Faculty held on 22.07.2023 was approved.

2. **Agenda No. 1 :** To consider the recommendation of the Committee of Courses (CoC) of Geography dated 29.06.2024 regarding the curriculum of **Third and Fourth Semester of the two year Masters (Post Graduate) Degree Programme in Geography** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020 *(Annexure 1)*.

   Resolution : The recommendation of the CoC of Geography dated 29.06.2024 regarding the curriculum of **Third and Fourth Semester of the two year Masters (Post Graduate) Degree Programme in Geography** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020 was approved. It was resolved to recommend the curriculum appended as *Annexure 1* to the University for consideration in the next meeting of the Academic Council for further approval.

3. **Agenda No. 2 :** To consider the recommendation of the CoC of Geography dated 29.06.2024 regarding the structure, curriculum and examination scheme of **Certificate Course in Remote Sensing, GIS and GNSS** to be offered under the Geospatial Skill Development Centre and Entrepreneurship Cell (GSDEC), Department of Geography *(Annexure 2)*.

Resolution : The recommendation of the CoC of Geography dated 29.06.2024 regarding the curriculum of **Certificate Course in Remote Sensing, GIS and GNSS to be offered under the Geospatial Skill Development Centre and Entrepreneurship Cell (GSDEC), Department of Geography** was approved. It was resolved to recommend the curriculum appended as *Annexure 2* to the University for consideration in the next meeting of the Academic Council for further approval.

4. **Agenda No. 3 :** To consider the curriculum of **Third and Fourth Semester of the two year Masters (Post Graduate) Degree Programme in Environmental Science** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020.

   Resolution : The House considered the the curriculum of **Third and Fourth Semester of the two year Masters (Post Graduate) Degree Programme in Environmental Science** revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020. The House noted that the recommendation of the curriculum by the CoC of Environmental Sciences is due. It was resolved that the curriculum may be considered by the CoC of Environmental Sciences and the recommendation may be circulated to the Faculty for consideration through circulation by e-mail.

5. **Agenda No. 4 :** To consider the request submitted by Dr. D.S. Rathore, Incharge Head, Department of Environmental Science regarding filling of 02 vacant positions of Internal Members of the CoC of Environmental Sciences.

   Resolution : The House noted that due to the superannuation of Prof. B.R. Banmaniya, Convener, and one vacant position of Internal Members in the existing CoC of Environmental Sciences, two Internal Members are required to be elected to the CoC of Environmental Sciences. The House unanimously nominated the following as Internal Members on the two vacant positions for the remaining period of the existing CoC:

   1. Prof. Seema Jalan, Head, Department of Geography and Chairperson, Faculty of Earth Sciences.
   2. Dr. Ritesh Purohit, Head, Department of Geology and Convener, CoC of Geology

   It was resolved that the CoC may be forwarded to the Registrar for further action (*Annexure 3*).

Table Agenda

T - 1. To consider the recommendation of the CoC of Geography dated 29.06.2024 regarding inclusion of Geography as a subject to be offered as a subject combination with other

subjects of Faculty of Science at graduate level leading to Certificate, Diploma and Bachelor's (B.Sc.) degree with Geography.

Resolution : The members approved the recommendation of the CoC of Geography dated 29.06.2024 regarding inclusion of Geography as a subject to be offered as a subject combination with other subjects of Faculty of Science at graduate level leading to Certificate, Diploma and Bachelor's (B.Sc.) degree with Geography in principle. It was resolved that the matter may be considered in joint meeting of the Faculty of Science and Earth Science. A request may be submitted to the Chairperson, Faculty of Science in this regard.

T - 2. To consider the recommendation of the CoC of Geography dated 29.06.2024 regarding increase in the budgetary provision for Field Survey for post graduate program to 1 Lakh per academic session. .

Resolution : It was considered that the Field Survey and educational tours must be an essential part of the post graduate program not only in Geography but all disciplines under Faculty of Earth Sciences. It was informed by the Incharge-Head, Department of Environmental Science that their Department is also facing shortage of fund for undertaking sufficient field work. The Committee considered the existing pattern of Department of Geology i.e. charging Rs. 2000/- per student per Semester for field work debitable to the Department. It was considered that the same may be adopted for the Department of Geography and Environment Science too. To start with the fee may be charged on annual basis.

It was resolved that a sub- head titled 'Compulsory Field Survey Program/ Educational Tour' may be recommended for being added to the admission and re-admission fee of M.A./M.Sc. Geography and M.Sc. Environmental Sciences I & III Semester @ Rs. 2000/- per student per year w.e.f Academic Session 2025-2026. The fee will be debitable to the respective Departments and will be utilised for conducting a national level field survey/ educational tour of 07 – 10 days for students of post-graduate program as per the provisions of the curriculum.

The meeting ended with a vote of thanks to the Chairperson.

(Dr. Anuya Verma) (Dr. D.S. Rathore) (Dr. Ritesh Purohit) 01/07/2024 (Prof. Seema Jalan) 01/07/2024

FACULTY OF EARTH SCIENCES

Mohanlal Sukhadia University, Udaipur (Raj.) – 313 001

MEETING OF THE FACULTY OF EARTH SCIENCES

01 JULY, 2024

Action Taken Report on the Resolutions of the meeting held on 28.08.2023

Resolution No.	Resolution	Action Taken
1	Recommendation of the syllabus and scheme of First and Second Semester of the two year Masters (Post Graduate) Degree Program in Geography revised as per the guidelines issued by the State Government and the University in context of the National Education Policy, 2020	Approved in meeting of Academic Council dated 05.10.2023 and Board of Management dated 18.12.2023. Minor corrections done in Course Codes as suggested by Nodal Officer, NEP per the University prescribed common guidelines. Approval accorded by the University vide Order No. F./ MLSU/M/ 2023/ 3019 dated 31.10.2023. The new scheme has been notified by the University for implementation in all affiliated and constituent colleges vide Notification no. F./215/Gen/ MLSU/2023/1375 dated 03.11.2023.

01/07/2024

HEAD & CONVENER

मोहनलाल सुखाड़िया विश्वविद्यालय,उदयपुर
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

Phone No 0294-247166, 2470707
Webside-www.mlsu.ac.in, E-mail: registrar@mlsu.ac.in

MINUTES OF THE MEETING OF ACADEMIC COUNCIL HELD ON 05th OCTOBER., 2023 AT 03:00 PM AT GOLDEN JUBILEE UNIVERSITY GUEST HOUSE, MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

The following members were present:

1. Prof. Sunita Mishra, Vice Chancellor - In Chair
2. Prof. Neeraj Sharma
3. Prof. Meera Mathur
4. Prof. Pratibha
5. Prof. Kalpana Jain
6. Prof. Sudha Choudhary
7. Prof. C.R. Suthar
8. Prof. Seema Jalan
9. Prof. C.P. Jain
10. Prof. Manju Baghmar
11. Prof. Shurveer S. Bhanawat
12. Prof. Mukesh Mathur
13. Prof. Atul Tyagi
14. Prof. Arti Prasad
15. Prof. M.K. Jain
16. Dr. Neetu Parihar
17. Dr. Rajshree Choudhary
18. Dr. Vineet Soni
19. Dr. Ritesh Purohit
20. Dr. Meenakshi Jain
21. Dr. Jyoti Choudhary
22. Dr. Ghanshyam Purohit
23. Sh. Vinay Pathak, Registrar - Member Secretary

Invitees:

1. Shri D.S. Rathore, Comptroller
2. Prof. M.S. Rathore
3. Prof. Hemant Dwivedi
4. Prof. K.B. Joshi
5. Dr. R.C. Kumawat
6. Dr. Shilpa Seth
7. Dr. Kunjan Acharya

At the outset, the Member Secretary extended a heartily welcome to all the members present in the meeting, later on the following business/agenda items were taken:

1.	To consider letter dated 23.09.2023 received from the Director, Institute of Engineering & Technology regarding permission to conduct empanelment of Teaching Consultants/Guest Faculty and Technical Assistants in IET and CoA. **Resolution:** Considered and resolved to approve that for the empanelment of Teaching Consultants/Guest Faculty and Technical Assistant in Institute of Engineering & Technology and College of Architecture, the SFA Board will take it on priority basis and the process for the same will be completed within one month.
2.	To consider the request dated 01.09.2023 received from Course Director, Microbiology to reduce the SFS Fee increment for M.Sc. (CBCS) Microbiology Course. **Resolution**: After detailed discussion the item has been deferred.
3.	To consider and approve the minutes of the meeting of Faculty of Education held on dated 28.07.2023. **Resolution**: While considering the item it has been noticed that the inspection of NCTE has not been conducted yet, therefore, **item deferred.**
4.	To consider and approve the minutes of the meeting of Faculty of Earth Sciences held on 31.07.2023 & 28.08.2023. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Earth Sciences held on 31.07.2023 and 28.08.2023.
5.	To consider and approve the minutes of the meeting of Faculty of Science held on 29.08.2023. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Science held on 29.08.2023.
6.	To consider and approve the minutes of the meeting of Faculty of Visual Arts held on 02.10.2023. **Resolution**: Considered and resolved to approve the minutes of the meeting of Faculty of Visual Arts held on 02.10.2023.
7.	To consider the request received from Sh. Tarunesh Joshi, Student, B.V.A. Painting regarding award of Four Year Degree counting the foundation year. **Resolution:** It has been noticed that the case is more than 15 years old and resolved to not accepted the item.
8.	To consider conferment of the Ph.D. degree to the successful candidates whose Viva-Voce has been conducted from 15.12.2022 to 29.09.2023. **Resolution:** Considered and resolved to approve the conferment of Ph.D Degree to the successful candidates whose Viva Voce has been conducted from 15.12.2022 to 29.09.2023.

9.	To consider the minutes of the meeting of the Degree Committee held on 18.09.2023 at 03:00 pm in the Vice Chancellor Secretariat under the Chairmanship of HVC to finalize the schedule for the XXXI Convocation to be organized on 21st December, 2023. **Resolution:** Considered and resolved to approve the minutes of the Degree Committee held on 18.09.2023 under the Chairmanship of HVC to finalize the schedule for the XXXI Convocation to be organized on 21.12.2023.
10.	To re-consider resolution No. T-6(i) of Academic Council in its meeting held on 28.06.2023 in which following decision was taken: "The pattern of answer books similar to that of GGTU, Banswara may be adopted from the next year examination." **Resolution:** While considering the agenda item, the Controller of Examination has apprised the house that approximate 3.50 lakhs answer book-lets (containing 28 pages) lying in his office, therefore, it will be better to introduce the new pattern from the session 2023-24 examination. After thorough deliberation it has been considered and resolved that the unused answer book-lets (in stock) may be distributed among the colleges so that it can be used for the internal University Examinations and the pattern of answer books similar to that of GGT University, Banswara should be adopted from this year.
11.	To re-consider the request of Ms. Prateeti Vyas regarding the award of the Gold Medal for the B.P.Ed. Course. **Resolution:** Considered and resolved to approve that the award of Bachelor Degree to the B.P.Ed. students similar to the University of Rajasthan, Jaipur and accordingly the Gold Medal for the B.P.Ed. course from the session 2020-21.
12.	To report various letters/ notices / orders / notifications issued by the University (Sr.No.i to lviii). **Resolution:** Considered and resolved to approve the same (Sr.No.i to lviii).
	<u>SUPPLEMENTARY AGENDA</u>
S-1	To consider letter dated 05.10.2023 received from the Director & Chairman, Faculty of Management Studies regarding structural framework and syllabus as per NEP-2020 of various courses of FMS. **Resolution:** Considered and resolved to approve the structural framework and syllabus as per NEP-2020 of various courses of Faculty of Management Studies.
S-2	To consider and approve the minutes of the meeting of Faculty of Humanities held on 04.10.2023. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Humanities held on 04.10.2023.
S-3	To consider and approve the minutes of the meeting of Faculty of Social Sciences held on 04.10.2023. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Social Sciences held on 04.10.2023.

S-4	To consider and approve the minutes of the meeting of Faculty of Education held on 03.10.2023. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Education held on 03.10.2023.
S-5	To consider letter dated 04.10.2023 received from the Chairman, Faculty of Science regarding syllabus of MCA Programme. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Science regarding MCA Programme.
S-6	To consider the conferment of U.G./P.G. Degree (annual and semester) and all Diploma & Certificate courses to the successful candidates passed for the session 2021-22. **Resolution:** Considered and resolved to approve the conferment of UG/PG (Annual and Semester) and all Diploma & Certificate Courses to the successful candidates passed for the session 2021-22.
S-7	To consider letter dated 05.10.2023 received from Coordinator, Digital Marketing Career Hub, RUSA 2.0, FMS regarding waiving off annual fee of Diploma and Certificate Programme in Digital Marketing of FMS. **Resolution**: Considered and resolved to approve to charge only Rs.200/- per student as registration fee of Diploma and Certificate Programme in Digital Marketing of FMS under RUSA 2.0
S-8	To consider and approve the minutes of the meeting of Faculty of Commerce held on 23.09.2023. **Resolution**: Considered and resolved to approve the minutes of the meeting of Faculty of Commerce held on 23.09.2023.
S-9	To consider letter No.FMS/MLSU/2023/2791 dated 05.10.2023 received from Director & Chairperson, Faculty of Management Studies regarding waiving off fees in Diploma in Retail Marketing Management (RUSA 2.0). **Resolution**: Considered and resolved to approve to charge only Rs.200/- per student as registration fee of Diploma in Retail Marketing Management (RUSA 2.0).

The meeting ended with a vote of thanks to the Chair.

(Vinay Pathak)
REGISTRAR

(Prof. Sunita Mishra)
VICE-CHANCELLOR

मोहनलाल सुखाड़िया विश्वविद्यालय, उदयपुर
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES OF THE MEETING OF ACADEMIC COUNCIL HELD ON 02.07.2024 AT 11:00 AM AT TOURISM & HOTEL MANAGEMENT BUILDING, UNIVERSITY CAMPUS, MLSU, UDAIPUR

Following members were present:

1. Prof. Sunita Mishra, Vice Chancellor — In Chair
2. Prof. Arti Prasad
3. Prof. Sudhish Kumar
4. Prof. Sudha Choudhary
5. Prof. Digvijay Bhatnagar
6. Prof. Pratibha
7. Prof. Hanuman Prasad
8. Prof. Seema Jalan
9. Prof. P.M. Yadav
10. Prof. Neeraj Sharma
11. Prof. L.S. Chouhan
12. Prof. Atul Tyagi
13. Prof. M.K. Jain
14. Prof. B.L. Verma
15. Dr. Rajshree Choudhary
16. Dr. D.V. Vashisth
17. Dr. Ritesh Purohit
18. Dr. Naveen Nandwana
19. Dr. Ashish Sisodiya
20. Dr. Jyoti Choudhary
21. Dr. Vineet Soni
22. Dr. Meenakshi Jain
23. Dr. Ghanshyam Purohit
24. Dr. R.C. Kumawat — Member Secretary

Invitee:

1. Prof. Hemant Dwivedi
2. Prof. M.S. Rathore
3. Prof. Meera Mathur
4. Prof. K.B. Joshi
5. Prof. M.S. Dhaka

6. Prof. Anjana Paliwal
7. Dr. Kunjan Acharya

Students as invitee:

1. Syed Mohammad Aftaab
2. Chitaranjan Trivedi
3. Neha Munani
4. Anjali Sisodiya
5. Rishika Sanadhya
6. Kavita Mali

At the outset, the Member Secretary extended a hearty welcome to all the members present in the meeting. Further following items were discussed:

01.	Visit of Hon'ble President of India to our prestigious University in the month of August-2024. **Resolution:** Hon'ble Vice Chancellor addressed the House regarding visit of Hon'ble President of India to our University in the month of August and apprised the House that eminent personalities like Governors, MLAs and other will be invited in the 75th Golden Jubilee celebration of the Department of Geology.
02.	To discuss the matter regarding repository status of digital data on Digi-Locker Portal. **Resolution:** Discussed the matter regarding repository status of digital data on Digi-Lockal Portal. During the discussion, it was apprised the House about the progress of the Repositry Status of Digital Data on Digi-Locker Portal and resolved that after Convocation-2024, the data of the session 2023-24 shall be uploaded.
03.	To discuss the matter regarding prepare the structure and course contents of the assigned skill programmes initiated by SSC-CRISP. **Resolution:** The structure and syllabus submitted by the Head, Department of Pharmacy for SSC-CRISP initiated programs B.Sc. (Pharma & M.Ed. Tech.), B.Sc. (Pharmaceutical Manufacturing & Quality) in compliance of letter No. MLSU/M/2024/3105 dt. 28.06.2024 are approved. The same may be sent to the State Government. The remaining departments are asked to submit the requisite documents at the earliest.
04.	To discuss the matter regarding existing fee structure of the University. **Resolution:** Considered the letter No. 181/फीस/सामान्य/मोलासुविवि/2023/892 दि. 19.06.2023 and resolved that the fee will not be increased from this Academic Session 2024-25. The fee mentioned in the above order will remain same. A fresh order be issued from the Registrar Office in which M.Phil fee need not to be mentioned.

05.	Letter No. 12184 dt. 14.12.2023 received from the Chairperson, National Commission for Protection of Child Rights, New Delhi regarding fostering higher education opportunities for orphan children. **Resolution:** Considered the letter No. 12184 dt. 14.12.2023 received from the Chairperson, National Commission for Protection of Child Rights, New Delhi regarding fostering higher education opportunities for orphan children and it was resolved to admit such two children (One Male and One Female) in each programme of study both at UG and PG Level. Further, it was also resolved that remaining modalities be decided at University Level.
06.	To consider and approve the minutes of the meeting of Faculty of Commerce held on 23.01.2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Commerce held on 23.01.2024.
07.	To consider office note dated 27.02.2024 received from the office of Controller of Examination regarding implementation of resolution taken in the meeting of Faculty Chairmen held on 16.01.2024. **Resolution:** Considered the office note dated 27.02.2024, while discussion the Controller of Examination apprised the House that some resolutions were taken while implementing NEP in the University and the House resolved to approve the same and allow to award grace in Marks in UG (NEP). The University policy of awarding the grace marks in UG & PG etc. will continue as per the norms. The exam of Regular and Non Collegiate students can be conducted together from this session i.e. 2024.-25.
08.	To consider representation dt. 01.05.2024 received from students viz. Sh. Surendra Nimama and Sh. Harshvardhan Nath Chouhan regarding various issues. **Resolution:** Considered the representation and resolved that Examinations will be conducted as per the academic calendar of the University. Further, it was also resolved that re-examination will be conducted only for National Games Player.
09.	To consider letter No. MLSU/THMP/2024/995 dt. 14.05.2024 received from Course Director, Tourism & Hotel Management Building, MLSU regarding fee revision for BBA Hotel Management Programme. **Resolution:** Considered the letter No. MLSU/THMP/2024/995 dt. 14.05.2024 received from Course Director, Tourism & Hotel Management Building, MLSU and resolved to adopt the structure mentioned in above letter.
10.	To consider letter No. THMP/MLSU/2024/1012 dt. 26.06.2024 received from the Course Director, Tourism & Hotel Management regarding extension of lease deed between MLSU and Skill Planning and Entrepreneurship Department, Govt. of Rajasthan, Jaipur. **Resolution:** Item not discussed.

11.	To consider the conferment of U.G./P.G. Degree (Annual and Semester) and Diploma & Certificate Courses to the successful candidates passed for th session 2022-23. **Resolution:** Considered and approved the conferment of U.G./P.G. Degree (Annual and Semester) and all Diploma & Certificate Courses to the successful candidates passed for the session 2022-23.
12.	To consider the agenda item received from Dean, University College of Law regarding: 1 To introduce New Criminal Laws from Academic Session 2024-25. 2 To provide the opportunities for the students of Semester IX & X of BA-LLB, LLM (III & IV Semester) for appearing in Supplementary Exam in the same Academic Session. Resolution: Considered and resolved to approve the same with the modification that Supplementary Exam opportunity for the students of Sem. IX & X of BA-LLB and LLB (III & IV Sem.) will be provided from the session 2024-25.
13.	To consider the agenda item received from the Head, Deptt. of Hindi regarding various issues viz. change in the pattern of answer books, change in the pattern of question papers and triplicate copy while making question papers. **Resolution:** While discussing the matter Controller of Examination apprised the House that answer book pattern has been changed and these will be provided after using the old answer books.
14.	To report various letters/notifications/orders/notices issued by the University (Sr. No. I to LXXXVII). **Resolution:** Considered and resolved to approve the same with following modifications: I. Order issued by the Affiliation Section (Registrar Office) were not approved. II. At Pt. No. 14(XVII), it was resolved to place in force the guidelines to "Assign, Monitor and Evaluate the Internship, On Job Experience, Dissertation, Project, Field Study Courses in the UG and PG Programmes of MLSU under NEP-2020, submitted by the Nodal Officer, NEP 2020 fully.
15.	To consider the request dated 23.04.2024 received on 26.06.2024 from (Retd.) Prof. Kanika Sharma regarding her resignation from RUSA. **Resolution:** Considered the matter regarding resignation of Prof. Kanika Sharma (Retd.) and resolved that Prof. Kanika Sharma be asked to submit the Audited Utilization Certificate and the expenditure statement required by the RUSA.
TABLE AGENDA	
T-1.	To consider agenda item dated 25.06.2024 for granting permission to University Non-Teaching Staff to appear in the examinations conducted for further studies. **Resolution:** Item deferred.

	for submitting Ph.D. thesis. **Resolution:** Considered and resolved that extension for 7th and 8th year to the Ph.D. Research Scholars for submitting Ph.D. thesis can be given as per existing rules of UGC. III. To consider some relief to be given to the Ph.D. Research Scholars by reducing the Ph.D. thesis submission from Rs. 25000/- to Rs. 20000/-. **Resolution:** The matter discussed at length and resolved that fee of Ph.D. Thesis submission will remain Rs. 25000/-.
T-8.	To consider letter dated 14.05.2024 received from the Head, Department of Geography regarding guidelines to assign monitor and evaluate the Internship, on Job Experience, Dissertation, Project, Field Study Course in the UG and PG Programs of MLSU under NEP 2020. **Resolution:** Considered the matter regarding guidelines to assign monitor and evaluate the Internship, on Job Experience, Dissertation, Project, Field Study Course in the UG and PG Programs of MLSU under NEP 2020 and resolved that the proposed guidelines may be implemented with the item No. 14 (XVII).
T-9.	To report various orders/letters/notifications/ciruclars issued by the University (Sr. I to V). **Resolution:** Considered and resolved to approve the same.
	OTHER AGENDA
O-1.	During the meeting student representatives Sh. Avinash Kumawat and Sh. Anshuman Singh Shaktawat came to the House and demanded to impart voting rights to the students of Diploma and submitted a memorandum. I. **Resolution:** Considered the matter thoroughly and it was resolved that the matter should be reviewed by the Dean, Student Welfare. Further, it was also resolved that a committee be constituted regarding the same and on the basis of the recommendations of the committee, the HVC will be the final authority to resolve the matter. II. Further, students apprised the House regarding conduct Education Tour and the HVC apprised the House that such programmes may be taken up by the Department as per curriculum. III. Controller of Examination apprised the House that looking to the welfare of the students date of admission has also been extended.
O-2.	An issue regarding Air & Taxi permission to the External Members who come for taking Viva Voce. **Resolution:** It was resolved that Air & Taxi permission will be allowed for the external members and the payment will be made at the level of Dean, P.G. Office.
O-3.	At an eleventh hour of the meeting one of the members apprised the House about remuneration paid to the Affiliation Committee members.

T-2.	To consider and approve the minutes of the meeting of Committee of Courses in Management Studies held on 08.06.2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Committee of Courses in Management Studies held on 08.06.2024 subject to the condition that such matters may be sent through the Faculty in future.
T-3.	To consider and approve the minutes of the meeting of Faculty of Science held on 01.07.2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Science held on 01.07.2024.
T-4.	To consider letter No. 145 dated 28.06.2024 received from the Head, Department of Computer Science to publish seniority list of the teachers and honor the seniority while given administrative positions in the University. **Resolution:** Considered the matter to publish seniority list of the teachers and honor the seniority while given administrative positions in the University and resolved to constitute a committee for the same: 1 Prof. M.K. Jain, Chairman 2 Prof. B.L. Verma 3 Dr. Rajshree Choudhary 4 Dr. Ashish Sisodiya The committee will submit the report to HVC and the same may be put up in the meeting of Board of Management.
T-5.	To consider and approve the minutes of the meeting of Faculty of Earth Science held on July 1, 2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Earth Science held on July 1, 2024.
T-6.	To consider and approve the minutes of the meeting of Faculty of Humanities held on 05-06-2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Faculty of Humanities held on 05-06-2024.
T-7.	To consider agenda items dated 01.07.2024 received from the Dean, P.G. Studies. The items are as under: I. To consider conferment of Ph.D. Degrees to be successful candidates for the period from 18.12.2023 to 01.06.2024. **Resolution:** Considered and approve the conferment of Ph.D. Degrees to be successful candidates for the period from 18.12.2023 to 01.06.2024. Further, it was also resolved to approve the conferment of Ph.D. Degrees to the successful candidates till 31.07.2024. II. To consider extension for 7th and 8th year to the Ph.D. Research Scholars

	Resolution: It was resolved that remuneration should be paid Rs. 2500/- to the each member by the concerned college on inspection day. The same amount will be reimbursed by the University to the concerned college.
O-4.	According to the University Bulletin, for admission to first semester graduation, it is mandatory to have 48% in the qualifying examination whereas as per the admission policy issued by the state government for the session 2024-25, the minimum percentage for the students of Arts and Commerce stream has been fixed at 45. Therefore, this rule issued by the government is also accepted for the university in the session 2024-25. Apart from this, there is also a provision for 30% horizontal reservation for women in the admission policy of the state government. This rule will also be applicable on admission for this session. All other rules will be applicable as per the University Bulletin. **Resolution:** Considered and resolved to approve the same.
O-5.	One member raised & recommended to write "Professional Course" in Marksheet/Degree. **Resolution:** For mentioning the "Professional Course" in the Marks-Sheet a committee of all the Chairmen of Faculty is being constituted to decide the modalities.
O-6.	Discuss the matter to vacate the Rana Punja Hostel at once. **Resolution:** Regarding this matter a following committee was constituted to vacate the Rana Punja Hostel at once: I. Prof. Digvijay Bhatnagar, Convenor II. Prof. M.S. Dhaka III. Dr. Vineet Soni IV. Dr. Ajit Kumar Bhabor V. Dr. Giriraj Singh Chouhan VI. Dr. Bhavik Paneri VII. Dr. Mukesh Meena
O-7.	To discuss the matter regarding notices issued by the Co-ordinator, Flying Squad in Academic Session 2023-24. **Resolution:** Discussed the matter at length and the House unanimously resolved to treat such notices null and void.

The meeting ended with a vote of thanks to the Chair.

(Dr. R.C. Kumawat)
Offg. Registrar

18/2024.

(Prof. Sunita Mishra)
Vice Chancellor

मोहनलाल सुखाड़िया विश्वविद्यालय,उदयपुर
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

Phone No 0294-247166,
Webside-www.mlsu.ac.in, E-mail: registrar@mlsu.ac.in

MINUTES THE MEETING OF BOARD OF MANAGEMENT HELD ON 18th DECEMBER, 2023 AT 03:00 P.M. AT VICE CHANCELLOR'S SECRETARIAT, UNIVERSITY ADMINISTRATION OFFICE, MLSU, UDAIPUR.

The following members were present:

1. Prof. Sunita Mishra, Vice Chancellor — In Chair
2. Sh. Rajeev Dwivedi, ADM-City (Nominee Principal Secretary, Finance)
3. Dr. Shima Sarupriya (Nominee College Education)
4. Prof. C.R. Suthar
5. Prof. Mukesh Mathur
6. Prof. K.B. Joshi
7. Prof. Seema Jalan
8. Dr. Joohee Pradhan
9. Sh. Vinay Pathak, Registrar — Member Secretary

Members attended online:

1. Sh. Shivdatt Kavya (Nominee Principal Secretary, Higher Education)
2. Prof. Ashok Sharma (Nominee of Chancellor)
3. Dr. Rekha Pancholi (Principal of affiliated college)

Invitee:

1. Sh. D.S. Rathore, Comptroller

At the outset, the Member Secretary extended a heartily welcome to all the members present in the meeting, later on the following business/agendas items were taken:

01.	To consider and approve the minutes of the meeting of Board of Management held on 01.07.2023. **Resolution:** Consider and approve the minutes of the meeting of Board of Management held on 01.07.2023 with following observations: I. Resolution No. 1-(iii): Matter regarding RGHS was discussed and it was resolved to constitute a committee of following members to examine the implementation of RGHS in the University:

	1 Prof. S.S. Bhanawat, Convener 2 Registrar 3 Comptroller 4 Nominee from Treasury Deptt. 5 Nominee among the employee who appointed before 01.01.2004. II. Resolution No. T-2: Matter regarding confirmation of Dr. Tikam Chand Dakal and the members unanimously resolved to cancel order No. F. ( )/MLSU/Estt./Gr.I/2022/374 dt. 10.09.2022 in which it is mentioned to withdraw the confirmation of Dr. Dakal. Further, it was also resolved to authorize HVC to award punishment as per University rules for his visit at U.S.A. for working as S.Scientist without taking prior approval from the competent authority. III. Resolution No. 1 (iv), T-4 on BoM dt. 03.06.2023: Reconsidered and not approved. Further, it was also resolved that the process of promotion of teachers under UGC-CAS may be started as soon as possible.
02.	To consider and approve the minutes of the meeting of Council of Deans held on 18.09.2023, 03.10.2023, 27.10.2023 & 30.11.2023. **Resolution:** Considered and resolved to approve minutes of the meeting of Council of Deans held on 18.09.2023, 03.10.2023, 27.10.2023 & 30.11.2023.
03.	To consider and approve the minutes of the meeting of Academic Council held on 05.10.2023 & 09.12.2023. **Resolution:** Considered and resolved to approve minutes of the meeting of Academic Council held on 05.10.2023 & 09.12.2023.
04.	To consider the request dt. 02.12.2023 & 26.07.2023 received from Secretary, Mohanlal Sukhadia University Pensioner Society, Udaipur regarding increase of pension amount by 10% on completion of 75 years of age. **Resolution:** Considered and resolved to adopt Rajasthan Government's Notification No. F. 12(3)FD/Rules/2023 dated 25.06.2023 received from the Finance Department.
05.	To consider the request of Prof. R. Narendran, Deptt. of Business Administration to grant her deputation for the remaining period of her tenure at NTPC Business School. **Resolution:** The lien of an employee can not be extended beyond two years and deputation leave is not clubbed with lien, therefore, considered and resolved to approve that Prof. R. Narendran, Deptt. of Business Administration is to be joined University services immediately. Further, it

	was also resolved that her case will be decided as per University Rules.
06.	To consider agenda item dt. 28.11.2023 regarding reimbursement of medical expenses of University Pensioners incurred beyond the prescribed limit. **Resolution:** Looking to the huge amount for reimbursement of medical expenses, after detailed discussion, it was considered and resolved to approve that 50% of the total amount is to be reimbursed to each University pensioners. Further, it was also considered and resolved that the medical bills of University pensioners up to 31.03.2023 (has not yet submitted) the same may be deposited in the office of the Comptroller up to 31.01.2024 and after that reimbursement related bill will not be accepted.
07.	To report various letters/notifications/orders issued by the University (from Sr. No. I to XXXVI). **Resolution:** Considered and resolved to approve the same.
	TABLE AGENDA
T-01.	To consider the office note dated 15.12.2023 received from Vice Chancellor regarding DDO power of Estate Office of the MLSU to the Deputy Comptroller. **Resolution:** Considered the matter regarding DDO power of Estate Office of the MLSU to the Deputy Comptroller and resolved that University Level Purchasing Committee is to be constituted regarding purchasing and other works related to University of Prof. Meera Mathur, Prof. B.L. Verma, Registrar, Comptroller, and External Member (Outside Civil Engineer/P.W.D.), concerning Head/DDO. Further, it was also resolved to impart DDO power of Estate Office to the Dy. Comptroller.
T-02.	To discuss the matter regarding University Level Purchase Committee. **Resolution:** Already resolved at T-01.
T-03.	To consider office note dated 15.12.2023 received from the Dean, P.G. Studies to allow two candidates for Ph.D. Degree. **Resolution:** Considered and resolved to approve that of Mr. Sanjay Tanwar, Faculty of Commerce and Ms. Sher Banu Pinjara, Faculty of Social Sciences whose Viva Voce Exam have been conducted on 12.12.2023 and 15.12.2023 respectively, the Ph.D. degree can be awarded to them in the forthcoming University Convocation to be held on 21.12.2023. Further, it was directed to print BoM date in place of A.C. date in their Ph.D. Degree.
T-04.	To consider the estimate received from the Executive Engineer regarding

	administrative block for Vice Chancellor Office, Registrar Office, Finance Office with meeting hall etc. located between Dean, Student Welfare Office and Vanijya Bhawan Office. **Resolution:** Considered and resolved to approve the estimate received from the Executive Engineer regarding administrative block for Vice Chancellor Office, Registrar Office, Finance Office with meeting hall etc. located between Dean, Student Welfare Office and Vanijya Bhawan Office.
T-05.	To consider the estimate received from the Executive Engineer regarding multipurpose examination halls and Controller of Examination Office located near Faculty of Education, Golden Jubilee Road. **Resolution:** Considered and resolved to approve the estimate received from the Executive Engineer regarding multipurpose examination halls and Controller of Examination Office located near Faculty of Education, Golden Jubilee Road.
T-06.	To consider letter No. F. 3(1)RB/2021 Part-3/5979 dated 10.11.2023 regarding enquiry report of various issues by the committee constituted by Raj Bhawan. **Resolution:** Considered letter No. 3(1)RB/2021 Part-3/5979 dated 10.11.2023 regarding enquiry report of various issues by the committee constituted by Raj Bhawan and resolved as under: i. The members principally agreed to establish Sant Peepa Shodh Sansthan in the University. ii. Matter regarding Dr. Tikam Chand Dakal was taken at Resolution No. 1.
T-07.	To consider & approve the minutes of the meeting University Sports Board held on 26.08.2023. **Resolution:** Considered and resolved to approve the minutes of the meeting University Sports Board held on 26.08.2023.
T-08.	To consider and adopt the Rajasthan Government's Notification No. F. 12(3)FD/Rules/2023 dated 25.06.2023 received from the Finance Department to amend the Rajasthan Civil Services (Pension) Rules, 1996. **Resolution:** Considered and resolved to adopt in-toto the Rajasthan Government's Notification No. F. 12(3)FD/Rules/2023 dated 25.06.2023 received from the Finance Department to amend the Rajasthan Civil Services (Pension) Rules, 1996.
T-09.	To consider the matter regarding implementation of SUMS (State University Management System) in the University. **Resolution:** Considered and resolved the matter regarding implementation of SUMS (State University Management System) in the University.

T-10.	To consider and approve the minutes of the meeting of the committee regarding new design of the answer book. **Resolution:** Considered and approve the minutes of the meeting regarding new design of the answer book with the observation in Mechanism Point Line No. 2 where to read "Invigilator" in place of "Centre Superintendent". Further, above minutes were approved.
T-11.	To consider and discuss the matter regarding implementation of National Education Policy (NEP) in State Universities. **Resolution:** Considered and resolved the matter regarding implementation of National Education Policy (NEP) in State Universities. Further, it was also resolved that in compulsory paper (Gen. Hindi & English Paper) may be conducted in M.C.Q. pattern.
T-12	Any other item with the permission of the Chair: A. Considered Public Notice dated 14.06.2023 received from the Secretary, University Grant Commission regarding scheme of "Professor of Practice" and "Adjunct Professor" in Universities and Colleges and resolved to refer the matter to Department of Higher Education (Gr. IV). B. Considered and approved Order No. F. ( )/MLSU/Estt/Gr.I/2023 /969 dt. 18.12.2023 regarding constitution of a committee for examination, verification and eligibility of the application forms of the University teachers for the purpose of under UGC-CAS. C. Considered the request regarding Dr. Avinash Panwar and Dr. Ghanshyam Purohit to reduce their probation period for one year. It was resolved to approve the matter as per, Notification No. F. 12(6)FD/Rules/2005 Jaipur dt. 23.09.2014 received from Special Secretary Finance (Budget), Finance Department, Govt. of Rajasthan & Notification No. F. 12(6)FD/Rules/2005 Jaipur dt. 23.09.2014 received from the Joint Secretary to the Government. & letter No. F. 1(6) Edu. 4/2010 Jaipur dated 19.08.2020 received from the Secretary, Higher Education.

The meeting ended with a vote of thanks to the Chair.

4.1.24
(Vinay Pathak)
Registrar
MLSU

4/1/2024.
(Prof. Sunita Mishra)
Vice Chancellor
MLSU

मोहनलाल सुखाड़िया विश्वविद्यालय, उदयपुर
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

MINUTES OF THE MEETING OF BOARD OF MANAGEMENT HELD ON 23.09.2024 AT 03:30 PM AT GOLDEN JUBILEE GUEST HOUSE, MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

The following members were present:

1. Prof. Sunita Mishra, Vice Chancellor — In Chair
2. Sh. Udai Lal Dangi, Hon'ble MLA
3. Sh. Chhoga Ram Dewasi
   (Nominee Principal Secretary, Finance)
4. Prof. B.L. Verma
5. Prof. K.B. Joshi
6. Prof. P.M. Yadav
7. Dr. Joohee Pradhan
8. Dr. Vriddhi Chand Garg, Registrar — Member Secretary

Members attended online:

1. Prof. Ashok Sharma
   (Nominee of Chancellor)
2. Smt. Anupama Jorwal
   (Secretary, Planning Department)
3. Prof. Hemant Dwivedi

Invitee:

1. Smt. Seema Yadav, Comptroller

At the outset, the Member Secretary extended a hearty welcome to all the members present in the meeting, later on the following business/agendas items were taken:

01.	To consider and approve the minutes of the meeting of Academic Council held on 02.07.2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Academic Council held on 02.07.2024.
02.	To consider and approve the minutes of the meeting of Finance Committee held on 03.07.2024. **Resolution:** Considered and resolved to approve the minutes of the meeting of Finance Committee held on 03.07.2024.
03.	To consider following agenda items received from the Comptroller Office:

Mishra
25/9/2024.

	I. To consider the appointment of Chartered Accountants for Statutory Audit of Accounts of the University for the year 2023-24, 2024-25 and 2025-26 as authorized by the State Government in Education Department vide their letter No. F. 13 (1) Edu-6/87 Jaipur dated 06.07.1991. **Resolution:** Considered and resolved to grant permission for Chartered Accountants for Statutory Audit of Accounts of the University for the year 2023-24, 2024-25 and 2025-26 as per rules. II. The audited Final Accounts of the University (Income & Expenditure Account and Balance Sheet) for the financial year 2022-23 have been prepared (Copy Enclosed). **Resolution:** Considered and resolved to approve audited Final Accounts of the University (Income & Expenditure Account and Balance Sheet) for the financial year 2022-23.
04.	To discuss the matter of forthcoming 32nd Convocation of the University scheduled to be held on 3rd October, 2024. **Resolution:** Hon'ble Vice Chancellor apprised the House about the forthcoming 32nd Convocation of the University scheduled to be held on 3rd October, 2024. Further, it was also apprised to the House that Hon'ble President of India Ms. Droupadi Murmu is likely to attend this Convocation.
05.	Any other item with the permission of the Chair. I. An estimate for Rs. 55 Lakhs were approved for maintenance and other expenditure looking to the forthcoming 32nd Convocation of the University scheduled to be held on 3rd October, 2024.

The meeting ended with a vote of thanks to the Chair.

(Dr. Vriddhi Chand Garg)
Registrar
MLSU

(Prof. Sunita Mishra) 25/9/2024.
Vice Chancellor
MLSU

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Phone No 0294-247166, 2470707

Webside-www.mlsu.ac.in, E-mail: registrar@mlsu.ac.in

AGENDA FOR THE MEETING OF ACADEMIC COUNCIL TO BE HELD ON 05.10.2023 at 03:00 PM AT TOURISM & HOTEL MANAGEMENT BUILDING, UNIVERSITY CAMPUS, MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

Sr. No.	Agenda	Pg. No.
1.	To consider letter dt. 23.09.2023 received from the Director, Institute of Engineering & Technology regarding permission to conduct empanelment of Teaching Consultants/Guest Faculty and Technical Assistants in IET and CoA.	1
2.	To consider the request dt. 01.09.2023 received from Course Director, Microbiology to reduce the SFS Fee increment for M.Sc. (CBCS) Microbiology Course.	2
3.	To consider and approve the minutes of the meeting of Faculty of Education held on dated 28.07.2023.	3-4
4.	To consider and approve the minutes of the meeting of Faculty of Earth Sciences held on 31.07.2023 & 28.08.2023.	5-8
5.	To consider and approve the minutes of the meeting of Faculty of Science held on 29.08.2023.	9-10
6.	To consider and approve the minutes of the meeting of Faculty of Visual Arts held on 02.10.2023.	11-12
7.	To consider the request received from Sh. Tarunesh Joshi, Student, B.V.A. Painting regarding award of Four Year Degree counting the foundation year.	13
8.	To consider conferment of the Ph.D. degree to the successful candidates whose Viva-Voce has been conducted from 15.12.2022 to 29.09.2023.	14-20
9.	To consider the minutes of the meeting of the Degree Committee held on 18.09.2023 at 03:00 pm in the Vice Chancellor Secretariat under the Chairmanship of HVC to finalize the schedule for the XXI Convocation to be organized on 21st December, 2023.	21-26
10.	To re-consider resolution No. T-6(i) of Academic Council in its meeting held on 28.06.2023 in which following decision was taken:	27-30

FACULTY OF EARTH SCIENCE

Mohanlal Sukhadia University, Udaipur (Rajasthan)

Prof. B.R. BAMNIYA
Chairman

M- +919413812316
Email✉: brbamniya@yahoo.co.in

No: ES/MLSU/2023/3412

Date: 22-07-2023
31

MINUTES OF THE MEETING OF THE FACULTY OF EARTH SCIENCE HELD ON 22-07-2023

A meeting of Faculty of Earth Science was held at 3.00 PM in the Chamber of the HEAD, Department of Environmental Sciences on 22-07-2023.

Following members were present in the meeting:

1. Prof. B. R. Bamniya — Chairman
2. Prof. Seema Jalan — Head, Department of Geography
3. Prof. Ritesh Purohit — Head, Department of Geology

As per agenda of the meeting following decisions were taken:

1. Minutes of the Committee of Courses according to New Scheme for UG and PG Programme as per NEP were approved for Environmental Sciences department. (Minutes of CoC enclosed)
2. Minutes of the Committee of Courses according to New Scheme for UG and PG Programme as per NEP were approved for Geology department. (Minutes of CoC enclosed)
3. Minutes of the Committee of Courses according to New Scheme for UG as per NEP were approved for Geography department. (Minutes of CoC enclosed)

Prof. B.R. Bamniya
(Chairman)

Prof. Seema Jalan
(Head, Department of Geography)

HEAD
Dept. of Geography
MLSU, Udaipur

Dr. Ritesh Purohit
(Head, Department of Geology)

Head of the Department
Department of Geology
M.L. Sukhadia University
UDAIPUR

4.0

SYLLABUS OF

POSTGRADUATE

PROGRAMME*

* The present draft contains the Syllabi of the courses of I & II Semester only. The remaining will be updated in due course of time.

M.A./M.Sc. (Two Years Degree Program)	
First Semester	
Subject - Geography	
Code of the Course	GEG8000T
Title of the Course	GEOGRAPHICAL THOUGHT
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Understanding of the basic concepts of Geography of graduation level.
Co-requisites	None
Objectives of the course	• To give a comprehensive & integrated knowledge and understanding of ancient Greek, Roman, Arab and Indian scholars. • To give an overview on the dark age, age of discovery in Geography and contribution of important Geographers like; Varenius, Kant, Humbolt, Ritter, Ratzel, Hettner, Blache, Jean Brunhes, W. M. Davis, Huntington, Griffith Taylor, Carl O. Sauer, Scheafer, Hartshorne, Mackinder, Herbertson, Dudley Stamp, Lomonosov & Anuchin. • To give an understanding of Man-Environment relationship, Dualisms in geography and new concepts in Geography.
Learning outcomes	• Knowledge and understanding about ancient Greek, Roman, Arab and Indian scholars. • Knowledge and understanding about dark age, age of discovery in Geography and contribution of important

	Geographers like; Varenius, Kant, Humbolt, Ritter, Ratzel & Hettner, Blache, Jean Brunhes, W. M. Davis, Huntington, Griffith Taylor, Carl O. Sauer, Scheafer, Hartshorne, Mackinder, Herbertson, Dudley Stamp, Lomonosov & Anuchin. • Knowledge and understanding of Man-Environment relationship, Dualisms in geography and new concepts in Geography.
Syllabus **पाठ्यक्रम**	
UNIT - I	Definition, scope and nature of geography. Contribution of Greek and Roman scholars. Nature of geographical thought in ancient India. भूगोल की परिभाषा, विषय वस्तु एवं प्रकृति। यूनानी एवं रोमन विद्वानों का योगदान। प्राचीन भारत में भौगोलिक विचारों की प्रकृति।
UNIT - II	Dark age of geography, Contribution of Arab scholars: Ai-Biruni, Ai-Masudi, Ibn Battuta & Ibn Khaldun. Impact of renaissance on Geography: Age of discovery. Contribution of Bernhardus Varenius and Immanuel Kant. भूगोल का अंधयुग, अरब भूगोलवेत्ताओं का योगदानः अल–बिरूनी, अल–मसूदी, इब्न बतुता एवं इब्न खाल्दून। भूगोल पर पुनर्जागरण का प्रभावः खोज युग। बर्नहार्ड वारेनियस एवं इम्मानुअल कांट का योगदान।
UNIT - III	German school: contribution of Humbolt, Ritter, Ratzel & Hettner. French school: contributions of Blache and Jean Brunhes. जर्मन सम्प्रदाय विचारधाराः हम्बोल्ट, रिटर, रेटजेल एवं हैटनर का योगदान। फ्रांसीसी सम्प्रदाय विचारधाराः ब्लाश एवं जीन ब्रुन्स का योगदान।
UNIT - IV	American school: contribution of W. M. Davis, Huntington, Griffith Taylor, Carl O. Sauer, Scheafer & Hartshorne. British school: contribution of Mackinder, Herbertson & Dudley Stamp. Russian school: contribution of Lomonosov & Anuchin. अमेरिकी सम्प्रदाय विचारधाराः डब्ल्यू. एम. डेविस, हटिंगटन, ग्रिफिथ टेलर, कार्ल ओ. साउर, शेफर एवं हार्टशोर्न का योगदान। ब्रिटिश सम्प्रदाय विचारधाराः मेकिंडर, हरबर्टसन एवं डडले स्टाम्प का योगदान। रूसी सम्प्रदाय विचारधाराः लोमोनोसोव एवं अनुचिन का योगदान।
UNIT - V	Environmental determinism, possibilism and neo-determinism. Dualisms in geography: systematic vs. regional, qualitative vs. quantitative geography. Impact of Positivism, Humanism, Radicalism, Behaviouralism, Structuralism, Feminism and Postmodernism in Geography. पर्यावरण निश्चयवाद, संभववाद एवं नव–निश्चयवाद। भूगोल में द्वैतवाद– व्यवस्थित बनाम प्रादेशिक भूगोल, गुणात्मक बनाम मात्रात्मक भूगोल। भूगोल में प्रत्यक्षवाद,

	मानवतावाद, द्वैतवाद, व्यवहारवाद, सरंचनावाद, नारीवाद एवं उत्तर आधुनिकतावाद का प्रभाव।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Husain, Majid, Evolution of Geographical Thought, Rawat Publications, Jaipur • Kaushik, S.D., Rawat, D.S., Geographical Thought and Methodology, Rastogi Publications, Meerut. • हुसैन, माजिद, भौगोलिक चिन्तन का इतिहास, रावत पब्लिकेशन, जयपुर • कौशिक, एस.डी., रावत, डी.एस., भौगोलिक चिन्तन, रस्तोगी पब्लिकेशन्स, मेरठ • वर्मा, एन.एल., भौगोलिक विचारधाराओं का इतिहास, मध्यप्रदेश हिंदी ग्रंथ अकादमी, भोपाल • झा, अजय कुमार, भौगोलिक चिन्तन के विविध आयाम, बिहार हिंदी ग्रंथ अकादमी, पटना • सिंह, ए.के., दीक्षित, एस.के., भौगोलिक चिन्तन के आयाम, विश्वविद्यालय प्रकाशन, वाराणसी • अग्रवाल, एल.सी., भौगोलिक विचारधाराएं, राजस्थान हिंदी ग्रंथ अकादमी, जयपुर
Reference Books	• Dikshit R. D., Geographical Thought: A Contextual History of Ideas, Prentice Hall of India Pvt. Ltd. 2000 • Freeman, T. W., Hundred Years of Geography, Gerald Duck-Worth & Co. • Hartshorne, Richard, The Nature of Geography, Association of American Geographers, Lancaster, Pennsylvania, 1939 • Hartshorne, Richard, Perspective on the Nature of Geography, Rand McNally and Co., Chicago, 1959 • Harvey, David, Explanation in Geography, Edward Arnold, London, 1969 • Minshull, R., The Changing Nature of Geography, Hutchinson University Library, London, 1970 • Peet, R., Modern Geographical Thought, Blackwell, Oxford. 1998
Suggested E-resources	• https://www.thoughtco.com/age-of-exploration-1435006 • https://uou.ac.in/sites/default/files/slm/GE-301.pdf • https://www.encyclopedia.com/people/science-and-technology/geography-biographies/bernhardus-varenius • https://plato.stanford.edu/entries/kant/ • https://plato.stanford.edu/entries/alexander-humboldt/ • http://old.midnaporecollege.ac.in/RemoteClass/German%20geographer%20Carl%20Ritter%20PDF.pdf • http://www.nasonline.org/publications/biographical-memoirs/memoir-pdfs/davis-william.pdf • https://www.encyclopedia.com/people/science-and-technology/geography-biographies/paul-vidal-de-la-blache • https://gacbe.ac.in/pdf/ematerial/18BGE43C-U1.pdf

M.A./ M.Sc. (Two Years Degree Program)	
First Semester	
Subject-Geography	
Code of the Course	GEG8001T
Title of the Course	GEOMORPHOLOGY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Pre-requisites	Fundamental understanding of geographical concepts & phenomena.
Co-requisites	None
Objectives of the course	To impart learning about various concepts, processes and problems related to landforms and evaluate man's activities in his geographical milieu.
Learning outcomes	• To develop an understanding of major relief features and process of their formation on the earth surface. • To develop an understanding of landform dynamics and predict their changes on the earth surface. • To develop knowledge and skills to carry out geomorphological mapping and field investigations. • To develop research aptitude in the field of Geomorphology. • Basic contents for various competitive examinations for civil services, lecturership, school education, UGC NET-JRF and so on.
Syllabus **पाठ्यक्रम**	
UNIT - I	Concept & scope of geomorphology. Development in geomorphology. Geological Time Scale. Interior of the Earth. Isostasy: concept and theories. Continental Drift Theory. Plate Tectonic theory. Theories of mountain building: Kober and Holmes. भू-आकृति विज्ञान की अवधारणा एवं कार्यक्षेत्र। भू-आकृति विज्ञान में विकास। भूवैज्ञानिक समय मापनी। पृथ्वी का आंतरिक भाग। भू-संतुलन: अवधारणा एवं सिद्धांत। महाद्वीपीय विस्थापन सिद्धांत। प्लेट विवर्तनिकी सिद्धांत। पर्वत निर्माण के सिद्धांत: कोबर एवं होम्स।

UNIT - II	Diastrophism. Denudational Processes: Concept, weathering. Cycle of erosion: views of Davis and Penck. Development of slopes: approaches to the study of slopes - views of W. Penck, A. Wood and A. N. Strahler. पटल विरूपण। अनाच्छादन प्रक्रियाएं: संकल्पना, अपक्षय। अपरदन चक्र: डेविस एवं पेंक के विचार। ढालों का विकास: ढाल अध्ययन के उपागम- डब्ल्यू. पेन्क, ए. वुड एवं ए.एन. स्ट्राहलर के विचार।
UNIT - III	Geomorphic processes, erosional and depositional landforms – fluvial, glacial and fluvio-glacial, wind, karst and coastal. भू-आकृतिक प्रक्रियाएँ, अपरदनात्मक और निक्षेपणात्मक स्थलाकृतियाँ - जलीय, हिमानी एवं जलीय-हिमानी, पवन, कार्स्ट एवं तटीय।
UNIT - IV	Submarine relief. Geomorphometry: geomorphology and topographic analysis. River forms and processes – stream flow, hydrographs and flood frequency analysis. Extra-terrestrial geomorphology. समुद्री उच्चावच। भू-आकृतिमिति: भू-आकृति विज्ञान एवं स्थलाकृतिक विश्लेषण। नदी के स्वरूप एवं प्रक्रियाएँ - धारा प्रवाह, हाइड्रोग्राफ एवं बाढ़ आवृत्ति विश्लेषण। अपार्थिव भू-आकृति विज्ञान।
UNIT - V	Application of geomorphological studies to understand human activities: settlements, transport, land-use, mining. Geomorphic Hazards: Causes and distribution with special reference to earthquakes, volcanoes, landslides and avalanches. Dams and reservoirs: geomorphic consideration and environmental impact. मानव गतिविधियों को समझने के लिए भू-आकृति विज्ञान का अनुप्रयोग: बस्तियाँ, परिवहन, भूमि-उपयोग, खनन। भू-आकृतिक खतरे: कारण एवं वितरण, भूकंप, ज्वालामुखी, भूस्खलन एवं हिमस्खलन के विशेष संदर्भ में। बांध एवं जलाशय: भू-आकृतिक सन्दर्भ एवं पर्यावरणीय प्रभाव।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Dayal, P., A Text Book of Geomorphology, Shukla Book Depot, Patna, 1996. • Hagget, Richard, Fundamentals of Geomorphology, Routledge, Taylor & Francis Group, New York, 2007. • Singh, S., भू-आकृति विज्ञान का स्वरुप, Prayag Pustak Bhawan, Allahabad, 2014. • एच. एस. शर्मा: भौतिक भूगोल, पंचशील प्रकाशन, जयपुर • गायत्री प्रसाद : भू आकृति विज्ञान, शारदा पुस्तक भंडार, 2012 • एस .एल .गुप्ता : भू आकृति विज्ञान, हिंदी माध्यम कार्यान्वयन निदेशालय, दिल्ली विश्वविद्यालय, 2008 • जे. पी. शर्मा: भूआकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ
Reference Books	• Pike, R.J., I.S. Evans and T. Hengl, Geomorphometry: A Brief Guide, Developments in Soil Science, Volume 33, Elsevier B.V., 2009 • Sharma, H. S., Tropical Geomorphology, Concept, New Delhi, 1987 • Shepard, F. P., Submarine Geology, Harper & Sons, New York, 1948 • Singh, S., Geomorphology, Prayag Pustakalaya, Allahabad, 1998

	• Small, R. J., The Study of Landforms, McGraw Hill, New York, 1985 • Sparks, B. W., Geomorphology, Longmans, London, 1960 • Strahler, A. H., Introducing Physical Geography, 5th Edition, John Wiley & Sons, 2009. • Summerfield, M. A., Global Geomorphology, Longman, 1991 • Thornbury, W. D., Principles of Geomorphology, Wiley Eastern, l969
Suggested E-resources	• NCERT Geography books of 11th and 12th standards. • https://www.thoughtco.com/search?q=geography • https://bhuvan-app1.nrsc.gov.in/mhrd_ncert/

M.A./M.Sc. (CBCS Program)	
First Semester	
Subject - Geography	
Code of the Course	GEG8002T
Title of the Course	ECONOMIC & RESOURCE GEOGRAPHY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Course in Geography
Delivery type of the course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Understanding of the basic concepts of Geography of graduation level.
Co- requisites	None
Objective of the Course	This is the basic course and sub discipline of Geography, which provides various aspects, concepts and approaches of the economic and resource geography.
Learning outcomes	• It contains basic knowledge of economic geography and presents the overview of economic activities. • It deals with basic concepts of localization factors and major theories of location. • It discusses man- environment relationship and also represents spatial variation & responsible factors of various economic activities. • It elaborates the concept and classification of resources. It also discusses the distribution, production and trade of major mineral and non conventional energy resources. • It has been dedicated to the applied economic and resource geography.

Syllabus पाठ्यक्रम	
UNIT-I	Definition, nature, scope, approaches and recent trends of economic geography. Its relation with allied subjects and overview of sectors of economy. आर्थिक भूगोल की परिभाषा, प्रकृति, विषय क्षेत्र, उपागम तथा नवीन प्रवृत्तियां । अन्य विषयों के साथ इसका संबंध तथा अर्थव्यवस्था के क्षेत्रों का अवलोकन ।
UNIT-II	Introduction of location models in various economic activities: Von Thunen's Model of agriculture, Alfred Weber's model of industrial location and Christaller's model of market theory. विभिन्न आर्थिक गतिविधियों में अवस्थिति मॉडल का परिचय: वॉन थुनेन का कृषि मॉडल, अल्फ्रेड वेबर का औद्योगिक अवस्थिति मॉडल और क्रिस्टलर का बाजार सिद्धांत का मॉडल।
UNIT-III	Man- Environment relationship. Distribution and spatial variation of economic activities. Factors affecting the primary, secondary, tertiary and quaternary economic activities. मानव-पर्यावरण संबंध । आर्थिक गतिविधियों का वितरण और स्थानिक भिन्नता। प्राथमिक, द्वितीयक, तृतीयक और चतुर्थक आर्थिक गतिविधियों को प्रभावित करने वाले कारक।
UNIT-IV	Resource: concept and classification. Spatial distribution of water and forest resources. Distribution and production of Iron, Bauxite, Coal & Petroleum and non-conventional energy resources. संसाधन: अवधारणा और वर्गीकरण। जल एवं वन संसाधनों का स्थानिक वितरण। लोहा, बॉक्साइट, कोयला एवं पेट्रोलियम और गैर-पारंपरिक ऊर्जा संसाधनों का वितरण और उत्पादन।
UNIT-V	Conservation and management of natural and human resource. Major population-resource regions of the world (Ackermann).World Trade Organization (WTO) & globalization. Resources and international politics.SDG for economic growth and equality. प्राकृतिक एवं मानव संसाधन का संरक्षण एवं प्रबंधन। विश्व के प्रमुख जनसंख्या-संसाधन प्रदेश (एकरमैन)। विश्व व्यापार संगठन (डब्ल्यू टी ओ) और वैश्वीकरण। संसाधन और अंतर्राष्ट्रीय राजनीति। आर्थिक विकास और समानता के लिए सतत विकास लक्ष्य।
	Suggested Readings **सहायकग्रन्थ / सामग्री**
Text Books	1. Hussain, M., Resource Geography: Perspectives in economic geography,

	Anmol Publications Pvt. Ltd., 2003. 2. Leyshon, A., and Lee, R., et al. *The Sage Handbook of Economic Geography*, London, 2011. 3. Pierre, P. and Thierry,M., et al. Economic Geography: The Integration of Regions and Nations, Princeton University Press, 2008. 4. Prager, J.C. and Thisse, J.F., Economic Geography and the Unequal Development of Regions, Routledge, UK, 2012. 5. Saxena, H.M., Economic Geography, Rawat Publications, Jaipur, 2013. 6. चतुर्भुज मामोरिया, आर्थिक एवं संसाधन भूगोल, SBPD पब्लिकेशन, 2021. 7.अलका गौतम एवं सोनल रस्तोगी, संसाधन भूगोल, दोहन, संरक्षण एवं प्रबंधन, शारदा पुस्तक भवन, प्रयागराज, 2022. 8. प्रो. जगदीश सिंह एवं प्रो. के. एन. सिंह, आर्थिक भूगोल के मूल तत्व, ज्ञानोदय प्रकाशन, 2020. 9. डॉ. बी.सी. जाट, आर्थिक भूगोल, पंचशील प्रकाशन, जयपुर, 2005. 10. डॉ. एच.एम. सक्सेना, आर्थिकभूगोल, राजस्थान हिंदी ग्रंथ अकादमी, 2013. 11. डॉ. एच. एस. गर्ग एवं डॉ. आभा सिंह, आर्थिक भूगोल, SBPD पब्लिकेशन, 2021. 12. डॉ. एस.डी. मौर्य, औद्योगिक भूगोल, प्रवालिका पब्लिकेशन प्रयागराज. 13.डॉ. राजमल लोढा एवं डॉ. दीपक माहेश्वरी, औद्योगिकभूगोल, राजस्थान हिंदी ग्रंथ अकादमी.
Reference Books	1. Aoyama, Y., Murphy, J., and Hanson, S., Key Concepts in Economic Geography, London, 2010. 2. Barnes, T., Peck, J., Sheppard, E. and Tickell, A. (Eds), Reading Economic Geography, London: Wiley-Blackwell, 2003. 3. Coe, N., Kelly, P., and Yeung, H., *Economic Geography: A Contemporary Introduction*, London: John Wiley & Sons, 2007.
Suggested E-resources	https://www.wto.org/ https://www.fao.org/state-of-forests/2020/en/ https://www.fao.org/3/y4473e/y4473e08.htm https://www.worldbank.org/en/topic/climate-smart-agriculture https://www.mining-technology.com/features/coal-iron-bauxite-top-list-mined-minerals-world/ https://ourworldindata.org/energy-mix

M.A./M.Sc. (Two Years Degree Program)	
First Semester	
Subject-Geography	
Code of the Course	GEG8003T
Title of the Course	CLIMATOLOGY AND OCEANOGRAPHY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Understanding of the basic concepts of Climatology & Oceanography of Graduation level. Basic Science of secondary level.
Co-requisites	None
Objectives of the course	• To give a comprehensive & integrated knowledge and understanding of composition and layered structure of the atmosphere, insolation and atmospheric pressure. • To give a comprehensive & integrated knowledge and understanding about winds, atmospheric humidity, air masses and cyclones. • To give an understanding of Koppen's and Thornthwaite's classifications of climate and Major climates of the world. • To give a comprehensive & integrated knowledge and understanding about oceanography, ocean bottom relief, ocean temperature and salinity, Coral reefs, Tides, ocean currents, marine resources, bule economy and sea level changes. • The course would help students to contextualize much of their further learnings, teaching and research within the contents of

	this course.
Learning outcomes	• Knowledge and understanding of composition and layered structure of the atmosphere, insolation and atmospheric pressure. • Knowledge and understanding of winds, atmospheric humidity, air masses and cyclones. • Knowledge and understanding of Koppen's and Thornthwaite's classifications of climate and Major climates of the world. • Knowledge and understanding of oceanography, ocean bottom relief, ocean temperature and salinity, Coral reefs, Tides ocean currents, marine resources, blue economy and sea level changes.
Syllabus **पाठ्यक्रम**	
UNIT - I	Nature and scope of Climatology. Composition and layered structure of the atmosphere. Insolation; energy balance of the Earth; horizontal and vertical distribution of temperature. Atmospheric pressure and pressure belts. जलवायु विज्ञान की प्रकृति एवं विषय वस्तु। वायुमंडल का संघटन एवं परतों की संरचना। सूर्याभिताप; पृथ्वी का ऊर्जा बजट; तापमान का ऊर्ध्वाधर एवं क्षैतिज वितरण। वायुमंडलीय दाब एवं वायुदाब की पेटियां।
UNIT - II	Winds: forces-PGF, CF, FF. Planetary, periodic and local winds; jet streams. Atmospheric humidity–process and forms of precipitation: types of rainfall; world distribution of rainfall. El Nino- La Nina; Walker's circulation & El Nino Southern Oscillation (ENSO). Air masses and fronts; tropical and temperate cyclones. पवनें: बल–दबाव प्रवणक, कोरियोलिस, घर्षण। स्थायी, सामयिक एवं स्थानीय पवने; जेट स्ट्रीम। वायुमंडलीय आर्द्रता–वर्षण की प्रक्रिया एवं प्रकार: वर्षा के प्रकार; वर्षा का विश्व वितरण। एल निनो एवं ला निनो; वॉकर परिसंचरण एवं एल निनो दक्षिणी दोलन। वायु राशिया एवं वाताग्र; उष्ण एवं शीतोष्ण चक्रवात।
UNIT - III	Approaches to classification of world climates; Koppen's and Thornthwaite's classifications. Major climates of the world: Characteristics of Equatorial, Tropical Monsoon, Savanna, Hot Desert, Mediterranean and Mountain type of climate.

	विश्व जलवायु वर्गीकरण की योजनाएं; कोपेन एवं थॉर्नथ्वेट का वर्गीकरण। विश्व की प्रमुख जलवायुऐं: भूमध्यरेखीय, उष्ण कटिबंधीय मानसून, सवाना, उष्ण मरूस्थल, भूमध्यसागरीय एवं पर्वतीय जलवायु प्रकारों की विशेषताएं।
UNIT - IV	Nature and scope of Oceanography. Ocean bottom relief; relief of Indian and Atlantic oceans. Ocean temperature and salinity: factors and distribution patterns. Coral reefs: types and theories of formation; Darwin, Daly and Murray. समुद्रविज्ञान की प्रकृति एवं विषय वस्तु। महासागरीय नितल के उच्चावच; हिंद एवं अटलांटिक महासागर के नितल उच्चावच। महासागरीय तापमान एवं लवणता: कारक और वितरण प्रतिरूप। प्रवाल भित्ति: प्रकार एवं उत्पत्ति के सिद्धांत; डार्विन, डैली एवं मरे।
UNIT - V	Tides: types, theories of origin of tides: Newton, Whewell & Harris. Ocean currents: currents of Indian, Atlantic and Pacific Ocean. Marine resources: food, mineral and energy resources. Concept of blue economy. Sea level changes; impact of human activities on marine communities. ज्वार: प्रकार, ज्वार उत्पत्ति के सिद्धांत: न्यूटन, ह्वैवेल एवं हैरिस। महासागरीय धाराएं: हिंद, अटलांटिक एवं प्रशांत महासागर की धाराएं। महासागरीय संसाधन: खाद्य पदार्थ, खनिज एवं ऊर्जा संसाधन। नीली अर्थव्यवस्था की संकल्पना। समुद्री तल में परिवर्तन; महासागरीय समुदाय पर मानवीय गतिविधियों का प्रभाव।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Singh, Savindra, Climatology and Oceanography, Pravalika Publication, Prayagraj • Lal, D.S., Climatology and Oceanography, Sharda Pustak Bhavan, Prayagraj • Miller, A.A., Climatology, Shubhi Publications, Gurugram • सिंह, सविन्द्र, भौतिक भूगोल, वसुन्धरा प्रकाशन गोरखपुर • सिंह, सविन्द्र, समुद्र विज्ञान, प्रवालिका पब्लिकेशन्स, इलाहाबाद • सिंह, सविन्द्र, जलवायु विज्ञान, प्रवालिका पब्लिकेशन्स, इलाहाबाद • शर्मा, एच.एस., शर्मा, एन. एल., मिश्रा, आर.एन. भौतिक भूगोल, पंचशील प्रकाशन, जयपुर • हुसैन, माजिद, भौतिक भूगोल, रावत पब्लिकेशन्स, नई दिल्ली • बंसल, डॉ. सुरेश चन्द्र, चौहान, डॉ. पंकज कुमार, भौतिक भूगोल, मीनाक्षी प्रकाशन, मेरठ

	• लाल, डी. एस., जलवायु एवं समुद्र विज्ञान, शारदा पुस्तक भवन, इलाहाबाद
Reference Books	• Barry, R.G. and R.J. Chorley, Atmosphere, Weather and Climate, Routledge, 1998. • Critchfield, H., General Climatology, Pearson Education, India. • Garrison, T., Oceanography, Wadsworth Co., USA, 1998.\ • Mather, J.R., Climatology, McGraw Hill, New York, 1974. • Monkhouse, F.J., Principles of Physical Geography, Hodder and Stoughton, London, 1960. • Strahler, A.N. and A.H. Strahler, Modern Physical Geography, John Viley & Sons, 1992. • Trewartha, G.T., An Introduction to Climate, International Students Edition, McGraw Hill, New York, 1980
Suggested E-resources	• https://ncert.nic.in/textbook.php?kegy2=0-14 • https://pressbooks.umn.edu/environmentalbiology/chapter/composition-and-structure-of-the-atmosphere/ • https://www.e-education.psu.edu/earth103/node/1004 • https://scijinks.gov/jet-stream/ • https://www.noaa.gov/jetstream/global/jet-stream • https://education.nationalgeographic.org/resource/types-precipitation/ • https://www.dspmuranchi.ac.in/pdf/Blog/tropicalcyclonesandtemperatecyclones-190731075058.pdf • https://www.dspmuranchi.ac.in/pdf/Blog/CLIMATIC%20CLASSIFICATION%20OF%20KOPPEN.pdf • https://gacbe.ac.in/pdf/ematerial/18BGE33C-U2.pdf • https://svs.gsfc.nasa.gov/3652 • https://www.unep.org/interactives/status-world-coral-reefs • https://www.oceano.org/en/thematic-pages/the-coral • https://earth.usc.edu/~stott/Catalina/Oceans.html

M.A./M.Sc. (CBCS Program)	
First Semester	
Subject - Geography	
Code of the Course	GEG8000P
Title of the Course	REPRESENTATION OF RELIEF AND CLIMATIC DATA
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Practical Course in Geography
Delivery type of the course	Practical (80+40). The 80 hours for content delivery include hands-on exercises, and40 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Understanding of geographical concepts relating to relief and climate. Basic knowledge of mathematics of secondary level.
Co- requisites	Basic cartographic skills.
Objective of the Course	This is the basic course and sub discipline of Geography, This paper includes the conceptualization of various basic aspects and representation of relief features and climatic data.
Learning outcomes	• It provides various quantitative and qualitative methods of relief representation. • It reveals the basic concepts of profiles and slope analysis and also introduces the geospatial modelling for relief features. • It discusses various concepts and methods for the analysis of drainage basins. • It represents various diagrams and graphs used in the representation of relief features and climatic data. • It introduces various weather symbols and isolines used on weather maps and discuss the interpretation of weather map. It also introduces various portals for climatic data and weather forecasting.

Syllabus पाठ्यक्रम	
UNIT-I	Representation of relief: Introduction and importance. Methods of relief representations: Qualitative or Pictorial method: Hachure method, Hill shading method, Trachographic method, Morphographic method. Quantitative or Mathematical methods (Spot height, Bench mark, Trigonometric stations, Form lines and Contour lines (Principals of contouring, Interpolation of contour lines and Methods of contour representation) and Composite methods. Their characteristics, merits and demerits. उच्चावच निरुपण: परिचय और महत्व । उच्चावच निरुपण की विधियाँ; गुणात्मक / चित्रमय विधियाँ: हैश्युर प्रणाली, पर्वतीय छायाकरण, ट्रैकोग्राफीय विधि, आकृतिक विधि । उच्चावच निरूपण की मात्रात्मक / गणितीय विधियाँ : स्थानिक ऊचाईयाँ, तल चिन्ह, त्रिकोणमिति स्टेशन, आकृति रेखाए एवं समोच्च रेखाए; (समोच्च रेखाओ के सिद्धान्त ,समोच्च रेखाओं का अंतर्वेशन, सम्मोच रेखाओं के निरूपण की विधियां) । उच्चावाच निरूपण की मिश्रित विधियां । इन विधियों की विशेषताएं, गुण व दोष।
UNIT-II	Profiles & Slope Analysis: Definition, types & drawing of profiles (Drawing of Profiles: Serial (at least four), Superimposed, Projected and Composite Profiles) and Vertical exaggeration of scale. Introduction of methods of Slope Analysis, Average Slope Determination by C.K.Wentworth's Method. Geospatial modelling of Relief Features: TIN & DEM (Analogue Study). परिच्छेदिका एवं ढाल विश्लेषण: परिभाषा, प्रकार एवं परिच्छेदिका निरूपण; (संक्रम परिच्छेदिकाए (कम से कम चार), अध्यारोपित परिच्छेदिका, प्रक्षिप्त परिच्छेदिका, मिश्र परिच्छेदिका। ऊर्ध्वाधर मापनी में विकृति । ढाल विश्लेषण की विधियों का परिचय, सी.के.वेंटवर्थ की औसत ढाल निर्माण विधि, उच्चावच निरुपण हेतु भू-स्थानिक मॉडलिंग (TIN & DEM) (एनालॉग अध्ययन) ।
UNIT-III	Drainage Analysis: Methods of Stream Ordering, Bifurcation Ratio, Stream Frequency and Drainage Density. अपवाह तंत्र विश्लेषण: सरिता क्रम निर्धारण की विधियां, द्विभाजन अनुपात, सरिता आवृत्ति तथा अपवाह घनत्व।
UNIT-IV	Climatic Diagrams & Graphs: Diagrams (One dimensional): Wind Rose, Rainfall Dispersion Diagram, Water Budget Diagram and Hypsometric Curve. Graphs: Climograph, Hythergraph, Climatograph, Ergograph, Rainfall Variability graph, Temperature Variation graph and

	Altimetric Frequency Graph. जलवायवीय आरेख एवं आलेख: एक विमीय आरेख: पवन आरेख, वर्षा परिक्षेपण आरेख, जल-बजट आरेख तथा उच्चतादर्शी वक्र। आलेख: क्लाइमोग्राफ, हिदरग्राफ, क्लाइमेटोग्राफ, अग्रोग्राफ, वर्षा परिक्षेपण आरेख, तापमान विचरण आरेख़ तथा तुंगता आवृत्ति आलेख ।
UNIT-V	Weather symbols (weather condition, wind velocity and cloud cover) and Weather maps: introduction, uses, importance and interpretation of Indian weather maps (January and July). Isopleths on weather maps (Isotherms, Isobars, Isotachs, Isohyets). Introduction of Indian Portals for Climatic Data: Climatic Data Service Portal (CDSP), Indian Metrological Department (IMD), Pune, Meteorological & Oceanographic Satellite Data Archival Centre (MOSDAC). मौसम प्रतीक (मौसम की स्थिती, वायु का वेग और मेघ आवरण) । मौसम मानचित्र: परिचय , महत्व और भारतीय मौसम मानचित्र की व्याख्या (जनवरी तथा जुलाई) । मौसम मानचित्रों पर सममान रेखा (समताप रेखा, समदाब रेखा, समवाहगति रेखा, समवृष्टि रेखा)। जलवायु आकड़ो के लिए भारतीय पोर्टल का परिचय: जलवायु डेटा सेवा पोर्टल (सी. डी.एस.पी.), भारतीय मौसम विभाग पुणे, मौसम विज्ञान एवं समुद्र विज्ञान उपग्रह डेटा पुरालेख केन्द्र (एम.ओ.एस.डी.ए.सी.)।
	Exercises **अभ्यास**
	1. Representation of relief by Hachure method. 2. Representation of relief by Hill shading method. 3. Representation of relief by Trachographic method. 4. Representation of relief by Morphographic method. 5. Representation of relief by Spot height, Bench mark and Trigonometric stations. 6. Representation of relief by Form lines. 7. Representation of relief by Contour lines. 8. Drawing of Profiles: Serial (at least four). 9. Drawing of Profiles: Superimposed, Projected and Composite Profiles. 10. Determination of Average Slope by C.K.Wentworth's Method. 11. Mapping of Stream Ordering (For the given toposheet).

	12. Mapping of Drainage Density Map. 13. Drawing of Wind Rose Diagram. 14. Drawing of Rainfall Dispersion Diagram. 15. Drawing of Water Budget Diagram. 16. Drawing of Hypsometric curve for the representation of relief features. 17. Drawing of Climograph. 18. Drawing of Hythergraph. 19. Drawing of Climatograph. 20. Drawing of Ergograph. 21. Drawing of Rainfall Variability Graph. 22. Drawing of Temperature Variation Graph. 23. Drawing of Altimetric Frequency Graph. 24. Drawing of Weather Symbols related to weather condition, wind velocity and cloud cover. 25. Drawing of Indian Weather Map of January month and its interpretation. 26.Drawing of Indian Weather Map of July month and its interpretation. 27. Drawing of Isotherms, Isobars and Isohyets on the map.
	Suggested Readings **सहायकग्रन्थ / सामग्री**
Text Books	1. Mishra, R.N. and Sharma, P.K., Practical Geography Methods and Techniques, Pareek Publication, Jaipur 2023. 2. Khullar, D.R., Essentials of Practical Geography, New Academic publication, Jalandhar 2000. 3. Singh, R.L., Elements of Practical Geography, Kalyani Publication, New Delhi. 4. Khan, M.Z.A., Text Book of Practical Geography, New Delhi 1998. 5. Sarkar, A.K., Practical Geography-A Systematic Approach, Oriental Longman, Calcutta, 1997. 6. जे.पी. शर्मा, प्रायोगिक भूगोल, रस्तोगी प्रकाशन, मेरठ, 2016. 7.आर.एन.मिश्रा एवं पी.के. शर्मा, प्रायोगिक भूगोल, राज पब्लिकेशन नई दिल्ली, 2019.

	8. डी. आर. खुल्लर, प्रायोगिक भूगोल, कल्याणी पब्लिकेशन, 2019. 9. डॉ. बी.सी. जाट, प्रायोगिक भूगोल, पंचशील प्रकाशन, जयपुर, 2020. 10. इन्द्रपाल एवं माथुर, मानचित्र प्रक्षेप. राजस्थान हिन्दी ग्रंथ अकादमी, 2017.
Reference Books	1. Robinson, A.H. et.al, Elements of Geography, John Willey and Sons, U.S.A., 1995. 2. Monkhouse, E.J. and Wilkinson, H.R., Map and Diagrams, Lethuen, London 1994
Suggested E-resources	**-----**

M.A./M.Sc. (CBCS Program)	
First Semester	
Subject - Geography	
Code of the Course	GEG8001P
Title of the Course	REPRESENTATION OF SOCIO-ECONOMIC DATA
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Practical Course in Geography
Delivery type of the course	Practical (80+40). The 80 hours for content delivery include hands-on exercises, and40 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Geography of Graduate level
Co- requisites	None
Objective of the Course	This is the basic course and sub discipline of Geography, This paper includes the various diagrammatic and graphical methods of data representation.
Learning outcomes	• It introduces the basic concepts of data collection and representation. • It discusses the types of one, two and three dimensional diagrams for data representation. • It elaborates various graphs and cartograms for the representation of data.
Syllabus **पाठ्यक्रम**	
UNIT-I	Data Collection: Introduction, Types of data and Methods of data collection, Scales of measurement and data organisation. Meaning of Diagram & Graph. General rules for constructing diagrams & graphs. आंकड़ों का संग्रहण: परिचय, आंकड़ों के प्रकार और आंकड़े एकत्रण की विधियां । मापन के पैमाने/ स्तर एवं समंकों का व्यवस्थापन । आरेख एवं

	आलेख का अर्थ । आरेख एवं आलेख निर्माण के सामान्य नियम ।
UNIT-II	One Dimensional Diagram: Line Diagram, Bar Diagram (Simple, Multiple, Compound and Duo-Directional) and Pyramid Diagram (Simple, Superimposed and Compound). एकविमीय आरेख: रेखीय आरेख, दंड आरेख (सामान्य आरेख, बहुगुणी दण्ड आरेख, मिश्रित दण्ड आरेख और द्विदिशा दण्ड आरेख़) और पिरामिड आरेख़ (सरल, मिश्रित, अध्यारोपित) ।
UNIT-III	Two Dimensional Diagram: Unit Square Diagram, Square Block Diagram, Rectangular Diagram (Simple & Divided), Wheel Diagram and Ring Diagram. द्वीविमीय आरेख: इकाई वर्ग आरेख, ब्लॉक वर्ग आरेख, आयताकार आरेख (साधारण एवं विभाजित), चक्र आरेख एवं वलय आरेख ।
UNIT-IV	Three Dimensional Diagrams: Spherical Diagram, Cube Diagram and Block-Pile Diagram. त्रिविमीय आरेख: गोलीय आरेख, घन आरेख एवं ब्लॉक पुंज आरेख ।
UNIT-V	Graphical Representation and interpretation: Simple Linear Graph, Poly Linear Graph, Band Graph, Histogram, Frequency Polygon, Cumulative Frequency Polygon (Ogive), Geddis's Ergograph and Lorenz curve & Gini coefficient. Ternary /Triangular Diagram, Scatter Diagram. Cartogram: Isochrones & Traffic Flow Cartogram. Nearest Neighbour Analysis. आलेखी निरूपण एवं व्याख्या: साधारण रैखिक आलेख, बहु रैखिक आलेख, पट्टीका आलेख, आयत चित्र, आवृति बहुभुज, संचयी बारंबारता वक्र , गेडिस का आर्गोग्राफ, लॉरेंज वक्र एवं गिनी गुणाक । त्रिकोणाकार आरेख, प्रकीर्ण आरेख । मानारेख: समकालिक मानारेख एवं यातायात परिणाम मानारेख, निकटतम पड़ोसी विश्लेषण ।
Exercises **अभ्यास**	
	Use latest relevant data from Government sources to draw the following: 1. Drawing of Line Diagram. 2. Drawing of Simple Bar Diagram. 3. Drawing of Multiple Bar Diagram.

	4. Drawing of Compound Bar Diagram. 5. Drawing of Duo-Directional Bar Diagram. 6. Drawing of Simple Pyramid Diagram. 7. Drawing of Superimposed Pyramid Diagram. 8. Drawing of Compound Pyramid Diagram. 9. Drawing of Unit Square Diagram. 10. Drawing of Square Block Diagram. 11. Drawing of Simple Rectangular Diagram 12. Drawing of Divided Rectangular Diagram 13. Drawing of Wheel Diagram. 14. Drawing of Ring Diagram. 15. Drawing of Spherical Diagram. 16. Drawing of Cube Diagram. 17. Drawing of Block-Pile Diagram. 18. Graphical Representation of Data by Simple Linear Graph. 19. Graphical Representation of Data by Poly Linear Graph. 20. Graphical Representation of Data by Band Graph. 21. Graphical Representation of Data by Histogram. 22. Graphical Representation of Data by Frequency Polygon. 23. Graphical Representation of Data by Cumulative Frequency Polygon (Ogive). 24. Graphical Representation of Data by Geddis'sErgograph. 25. Graphical Representation of Data by Ternary /Triangular Diagram. 26. Graphical Representation of Data by Scatter Diagram. 27. Drawing of Isochrones. 28. Drawing of Traffic Flow Cartogram. 29. Nearest Neighbour Analysis.
Suggested Readings **सहायकग्रन्थ / सामग्री**	
Text Books	1. Mishra, R.N. and Sharma, P.K., Practical Geography Methods and Techniques, Pareek Publication, Jaipur 2023. 2. Khullar, D.R., Essentials of Practical Geography, New Academic publication, Jalandhar 2000. 3. Singh, R.L., Elements of Practical Geography, Kalyani Publication, New Delhi. 4. Khan, M.Z.A., Text Book of Practical Geography, New Delhi

	1998. 5.Sarkar, A.K., Practical Geography-A Systematic Approach, Oriental Longman, Calcutta, 1997. 6. जे.पी. शर्मा, प्रायोगिक भूगोल, रस्तोगी प्रकाशन, मेरठ, 2016. 7.आर.एन. मिश्राएवंपी. के. शर्मा, प्रायोगिक भूगोल, राज पब्लिकेशन नईदिल्ली, 2019. 8.डी. आर. खुल्लर, प्रायोगिक भूगोल, कल्याणी पब्लिकेशन, 2019. 9. डॉ. बी.सी. जाट, प्रायोगिक भूगोल, पंचशील प्रकाशन, जयपुर, 2020. 10. इन्द्रपाल एवं माथुर, मानचित्र प्रक्षेप. राजस्थान हिन्दी ग्रंथ अकादमी, 2017.
Reference Books	1. Robinson, A.H. et.al, Elements of Geography, John Willey and Sons, U.S.A., 1995. 2. Monkhouse, E.J. and Wilkinson, H.R., Map and Diagrams, Lethuen, London 1994
Suggested E-resources	----------

4.0

SYLLABUS OF

POSTGRADUATE

PROGRAMME*

* The present draft contains the Syllabi of the courses of I & II Semester only. The remaining will be updated in due course of time.

M.A./M.Sc. (Two Years Degree Program)	
Second Semester	
Subject-Geography	
Code of the Course	GEG8004T
Title of the Course	GEOGRAPHY OF INDIA
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Basic understanding of the nature of geographical phenomenon and inter-relationship between physical and socio-economic processes.
Co-requisites	None
Objectives of the course	• To give a comprehensive & integrated knowledge and understanding of Geography of the country. • To give an overview of the location, physical divisions, drainage system, climate, vegetation, people and economic aspects of the country. • To give an understanding of the strength and weakness of the country. • The course would help students to contextualize much of their further learnings, teaching and research on the country within the contents of this course.
Learning outcomes	• Knowledge and understanding of location and physical characteristics of India. • Knowledge and understanding of forest, soil and human resources of India.

	• Knowledge and understanding of agriculture characteristics, mineral and energy resources of India. • Knowledge and understanding of industrial, transportation and trade characteristic of India. • Knowledge and understanding of regionalization, contemporary issues and geographical problems of India.
Syllabus **पाठ्यक्रम**	
UNIT - I	Historical/administrative background of India, Physical divisions of India- The Himalaya, Northern Plain, Peninsular Plateau, Coastal Plain, Thar Desert and Islands. Drainage system. Climate: seasonal characteristics, mechanism of Indian monsoon; effect of El-Nino & La-Nino, climatic regionalization by Koppen. भारत की ऐतिहासिक/प्रशासनिक पृष्ठभूमि, भारत के भौतिक विभाग–हिमालय, उत्तर का मैदान, प्रायद्वीपीय पठार, तटीय मैदान, थार मरूस्थल एवं द्वीप समूह। अपवाह तंत्र। जलवायुः ऋतुवत विशेषताएं, भारतीय मानसून तंत्र; एल–निनो एवं ला–निनो का प्रभाव, कोपेन का जलवायु वर्गीकरण।
UNIT - II	Forests & soil resources: types and distribution. Reasons of soil degradation in India. Population: distribution, density, growth, rural-urban population, religious status, literacy rate & sex ratio. Population problems and Population policies of India. वन एवं मृदा संसाधनः प्रकार एवं वितरण। भारत में मृदा अवनयन के कारण। जनसंख्याः वितरण, घनत्व, वृद्धि दर, ग्रामीण–नगरीय जनसंख्या, धार्मिक स्थिति, साक्षरता दर एवं लिंगानुपात। जनसंख्या समस्याएं और भारत की जनसंख्या नीतियां।
UNIT - III	Agriculture: green revolution, agro-climatic zones. Production and distribution of major crops: rice, wheat, cotton, jute, sugarcane, tea & coffee. Minerals: distribution and production of Iron-ore, Manganese, Bauxite and Copper. Power resources: distribution and production of coal, petroleum, natural gas, hydel, solar, wind and atomic power. कृषिः हरित क्रांति, कृषि–जलवायु प्रदेश। प्रमुख फसलों का उत्पादन एवं वितरणः चावल, गेंहू, कपास, जूट, गन्ना, चाय एवं कॉफी। खनिजः लौह–अयस्क, मैंगनीज, बॉक्साइट एवं तांबा का वितरण एवं उत्पादन। ऊर्जा संसाधनः कोयला, पैट्रोलियम, प्राकृतिक गैस, जलविद्युत, सौर ऊर्जा, पवन ऊर्जा एवं परमाणु ऊर्जा का वितरण एवं उत्पादन।

UNIT - IV	Major industries: Iron & Steel, cotton textile. Industrial polices of India. Industrial regions of India. Globalization and its impact of Indian economy. Transportation development-road, rail, air and major ports. प्रमुख उद्योगः लौह और इस्पात, सूती वस्त्र। भारत की औद्योगिक नीतियां। भारत के औद्योगिक प्रदेश। वैश्वीकरण एवं भारतीय अर्थव्यवस्था पर इसका प्रभाव। परिवहन के साधनों का विकास– सड़क, रेल, वायु परिवहन एवं प्रमुख बन्दरगाह।
UNIT - V	Geographical regions of India- outline of scheme proposed by R.L. Singh, Resource Regions of India by Planning Commission. Geographical problems of India; cyclones, earthquake, floods, drought and landslides. Regional development programmes: Hill area development programme, Tribal area development programme and Drought prone area development programme. भारत के भौगोलिक प्रदेश– आर.एल. सिंह द्वारा प्रस्तुत योजना की रूपरेखा। योजना आयोग द्वारा प्रस्तुत भारत के संसाधन प्रदेश। भारत की भौगोलिक समस्याएं; चक्रवात, भूकंप, बांढ़, सूखा एवं भूस्खलन। प्रादेशिक विकास कार्यक्रम–पहाड़ी क्षेत्र विकास कार्यक्रम, जनजाति क्षेत्र विकास एवं सूखा–प्रवण क्षेत्र विकास कार्यक्रम।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Khullar, D. R., India: A Comprehensive Geography, Kalyani Publishers, Ludhiana, 2011. • Husain, Majid, Geography of India, McGraw Hill Education, 2017 • NCERT, India: Physical Environment, Class 11, 2022 • NCERT, India: People and Economy, Class 12, 2022 • खुल्लर, डी. आर. भारत का भूगोल, मैक्ग्रुहिल पब्लिकेशन, 2017 • हुसैन, माजिद, भारत का भूगोल, मैक्ग्रुहिल पब्लिकेशन, 2022 • चौहान, वी.एस., गौतम, अलका, भारत का भूगोल, रस्तोगी पब्लिकेशन, मेरठए 2020 • बंसल, एस.सी., भारत का भूगोल, मीनाक्षी प्रकाशन, मेरठ, 2015–16 • मामोरिया, चतुर्भूज : भारत का भूगोल, साहित्य भवन पब्लिकेशन्स, आगरा • एनसीईआरटी, भारतः भौतिक पर्यावरण, कक्षा 11, 2022 • एनसीईआरटी, भारतः लोग एवं अर्थव्यवस्था, कक्षा 12, 2022

Reference Books	• Singh, R. L., India: A Regional Geography, National Geographical Society, India, 1971 • Spate, O. H. K. and Learmonth, A. T. A., India and Pakistan - Land, People and Economy, Methuen & Co., London, 1967.
Suggested E-resources	• https://mausam.imd.gov.in/ • https://indiawris.gov.in/wiki/doku.php?id=ganga • https://www.indiascienceandtechnology.gov.in/organisations/ministry-and-departments/icar-national-bureau-soil-survey-and-land-use-planning • https://fri.icfre.gov.in/ • https://fsi.nic.in/ • http://ismenvis.nic.in/KidsCentre/Mineral_Distribution_in_India_13948.aspx • https://mnre.gov.in/ • https://censusindia.gov.in/census.website/ • https://icar.org.in/ • https://agricoop.nic.in/ • https://www.sail.co.in/en/home • https://dpiit.gov.in/ • https://morth.nic.in/ • https://indianrailways.gov.in/railwayboard/ • https://www.civilaviation.gov.in/ • https://shipmin.gov.in/ • https://commerce.gov.in/ • https://dolr.gov.in/en/desert-development-programme-ddp • https://mdoner.gov.in/dashboard/files/hadp.pdf • https://ndma.gov.in/ • https://vedas.sac.gov.in/renewable-energy/index.html • https://www.nrsc.gov.in/Atlas?language_content_entity=en • https://www.nrsc.gov.in/Atlas_Landslide?language_content_entity=en • https://vedas.sac.gov.in/en/Desertification_Status_Mapping_(DSM)_Atlas.html

M.A./ M.Sc. (Two Years Degree Program)	
Second Semester	
Subject-Geography	
Code of the Course	GEG8005T
Title of the Course	URBAN GEOGRAPHY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Fundamental understanding of geographical concepts & phenomena
Co-requisites	None
Objectives of the course	To develop geographical understanding of urban spaces and ability to apply learning of urban geography in solving real world problems.
Learning outcomes	• To understand site evolution, growth and classification of cities. • To provide scientific study of urban settlements and morphology. • To understand potential solutions to problems of urbanization. • Focuses on core concepts of town planning, helping students to prepare for better careers in this field.
Syllabus **पाठ्यक्रम**	
UNIT - I	Nature, scope and development of urban geography, urban concepts. Origin and growth of urban centers: ancient and medieval age. Process of urbanization: trends of urbanization in the world. Urbanization In India, development of metropolitan cities in India. नगरीय भूगोल की प्रकृति, कार्यक्षेत्र एवं विकास, नगरीय अवधारणाएँ। नगरीय केंद्रों की उत्पत्ति एवं विकास: प्राचीन एवं मध्यकालीन युग। नगरीकरण की प्रक्रिया: विश्व में नगरीकरण की प्रवृत्तियाँ। भारत में नगरीकरण, भारत में महानगरों का विकास।
UNIT - II	Classification of urban centers: views of Mumford and Griffith Taylor. Development of conurbation and megalopolises: North Eastern Sea board of USA, Rhine- Ruhr conurbations, Mumbai and Kolkata conurbations in India. Theories of urban system: the law of primate

	city and the rank size rule. Central place theories: Christaller's central place system, Losch's economic landscape. नगरीय केंद्रों का वर्गीकरण: ममफोर्ड एवं ग्रिफ़िथ टेलर के विचार। उपनगरीय एवं मेगालोपोलिस का विकास: संयुक्त राज्य अमेरिका का उत्तर-पूर्वी समुद्री क्षेत्र, राइन-रुहर सन्ननगर, भारत में मुंबई एवं कोलकाता सन्ननगर। नगरीय व्यवस्था के सिद्धांत: प्राइमेट नगर का नियम एवं रैंक-आकार नियम। केंद्रीय स्थल सिद्धांत: क्रिस्टलर का केंद्रीय स्थल व्यवस्था, लॉश का आर्थिक परिदृश्य।
UNIT - III	Urban land use: human ecology and urban land use models of Burgess, Harris-Ullman and Hoyt. Central business district (CBD): criteria and methods of areal definition, historical process and CBD. Zone in transition: Concept and Characteristics. Functional classification of cities: empirical and statistical methods. Centripetal and centrifugal forces of urban growth. नगरीय भूमि उपयोग: मानव पारिस्थितिकी एवं बर्गेस, हैरिस-उलमन एवं होयट के नगरीय भूमि-उपयोग मॉडल। केंद्रीय व्यापार जिला (सी.बी.डी.): क्षेत्रीय परिभाषा के मानदंड एवं विधियाँ, ऐतिहासिक प्रक्रिया एवं सी.बी.डी.। संक्रमण क्षेत्र: संकल्पना एवं विशेषताएँ। नगरों का कार्यात्मक वर्गीकरण: अनुभवजन्य एवं सांख्यिकीय विधियाँ। नगरीय विकास में केन्द्राभिमुख एवं केन्द्रापसारी बल।
UNIT - IV	Rural urban fringe: concept, criteria of delimitation and characteristics. Morphology of Indian cities: ancient, medieval and modern planned cities of India with special studies of Jaipur and Chandigarh cities. Concept of basic and non-basic functions, internal functional structure of urban centers. Social structure in urban areas of India, social segregation in Indian cities. ग्रामीण नगरीय उपांत: अवधारणा, परिसीमन के मानदंड एवं विशेषताएं। भारतीय नगरों की आकारिकी: भारत के प्राचीन, मध्यकालीन एवं आधुनिक योजनाबद्ध नगर - जयपुर एवं चंडीगढ़ नगरों का विशेष अध्ययन। आधारभूत एवं गैर-आधारभूत कार्यों की अवधारणा, नगरीय केंद्रों की आंतरिक कार्यात्मक संरचना। भारत के नगरीय क्षेत्रों में सामाजिक संरचना, भारतीय नगरों में सामाजिक अलगाव।
UNIT - V	Urban Policies: Smart city mission, National Urban Policy Framework (MoH & Urban Affairs). Prospect report of UN, SDG framework for Urban Area Development - Goal 11. Urban society: Slum development and problems; Gentrification, Social exclusion. Urban Environment: Urban heat island effect, solid waste management in urban areas, urban floods. Urban Planning: Study of Master plans of Udaipur and Jaipur cities. नगरीय नीतियां: स्मार्ट सिटी मिशन, राष्ट्रीय शहरी नीति रूपरेखा (आवासन एवं

	शहरी कार्य मंत्रालय)। संयुक्त राष्ट्र की विश्व शहरीकरण संभावना रिपोर्ट, नगरीय क्षेत्र विकास के लिए एस.डी.जी. रूपरेखा - लक्ष्य 11। नगरीय समाज: मलिन बस्ती उत्पत्ति एवं समस्याएं, अभिजातीकरण, सामाजिक बहिष्कार। नगरीय पर्यावरण: नगरीय ताप द्वीप प्रभाव, नगरीय क्षेत्रों में ठोस अपशिष्ट प्रबंधन, नगरीय बाढ़। नगरीय नियोजन: उदयपुर एवं जयपुर नगरों के मास्टर प्लान का अध्ययन।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Bansal, S. C., Urban Geography, Minakshi Publication, Meruth, 2000, (**Hindi**). • आर. एन. सिंह एवं एस. डी. मौर्य: नगरीय भूगोल, शारदा पुस्तक भवन, इलाहबाद • रतन जोशी: नगरीय भूगोल, राजस्थान हिंदी ग्रन्थ अकादमी, 2020 • Verma, L.N., Urban Geography, Rawat Books Publications, 2006. • Carter, Harlod, The Study of Urban Geography, Arnold-Heinemann Publishers (India) Private Ltd., New Delhi, 1982. • Kundu, A., Urban Development and Urban Research in India, Khanna Publication, 1992
Reference Books	• Dickinson, R. E., City and Region, Routledge, London, 1964. • Herbert, David T. and Colin J. Thomas, Urban Geography: A First Approach, John Wiley and Sons, New York, 1982. • Mumford, L., The Cultures of Cities, Harcourt, Brace and Co. Inc., London, 1938. • Murphy, R. E., The American City: An Urban Geography, McGraw Hill Book Co., New York, 1966.
Suggested E-resources	• https://www.india.gov.in/topics/infrastructure/urban • https://bhuvan.nrsc.gov.in/home/ • https://sdgs.un.org/goals/goal11 • https://smartcities.gov.in/ • https://vedas.sac.gov.in/usis/index.html

M.A/M.Sc (Two Years Degree Programme)	
Second Semester	
Subject- Geography	
Code of the Course	GEG8006T
Title of the Course	POPULATION AND SETTLEMENT GEOGRAPHY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the Course	4
Type of the Course	Discipline Centric Core Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	**Basic population knowledge.**
Co-requisites	None
Objectives of the Course	• To introduce the concepts of population Geography. • To develop an understanding of the importance and use of demographic data for population characterization. • Understanding of spatio-temporal population dynamics.
Learning Outcomes	• This paper will develop an understanding of Population Geography along with demographic data. • The students will be able to understand the distribution and trends of population growth in the developed and less developed countries in context of population theories. • The students will develop an understanding of population dynamics, causative factors and its implications. • An appreciation of the contemporary issues in the field of population studies. • To familiarize with the global mandate of addressing population problems through SDGs.

Syllabus पाठ्यक्रम	
Unit I	Population Geography: Meaning, Scope and Development of Population Geography, Development of population geography in India.Sources of Population Data: Census, Sample Surveys and vital statistics, Data reliability and errors. World Population Distribution: World Pattern of Population Distribution; Determinants of population distribution. Population distribution in India: Patterns and Determinants. जनसंख्या भूगोलः जनसंख्या भूगोल का अर्थ, विषय – क्षेत्र एवं विकास, भारत में जनसंख्या भूगोल का विकास। जनसंख्या आंकड़ों के स्रोत : जनगणना, नमूना सर्वेक्षण एवं महत्वपूर्ण आंकड़े (जन्म–मृत्यु सांख्यिकी), आंकड़ों की विश्वसनीयता एवं त्रुटियाँ। विश्व जनसंख्या वितरण : विश्व जनसंख्या का वितरण प्रतिरूप; जनसंख्या वितरण के निर्धारक तत्व । भारत में जनसंख्या वितरण : प्रतिरूप एवं निर्धारक तत्व।
Unit II	World Population Growth: Population Growth Since Prehistoric to Modern Period; Demographic Transition Theory and Population growth theory/ models(Malthus, Marx, Sadler, Ricardo and Optimum Population theory). Mortality Analysis: Patterns and its determinants. Fertility analysis: fertility patterns and its determinants. Growth of Population in India: Patterns, Components and Determinants. विश्व जनसंख्या वृद्धि : प्रागैतिहासिक से आधुनिक काल तक जनसंख्या वृद्धि : जनांकिकीय संक्रमण सिद्धांत एवं जनसंख्या वृद्धि के सिद्धांत (माल्थस, मार्क्स , सैडलर, रिकार्डो एवं अनुकूलतम जनसंख्या सिद्धांत)। मर्त्यता विश्लेषण : प्रतिरूप एवं इसके निर्धारक तत्व। प्रजननता विश्लेषण : प्रतिरूप एवं इसके निर्धारक तत्व। भारत में जनसंख्या वृद्धि : प्रतिरूप , घटक एवं निर्धारक तत्व।
Unit III	Population Composition: Age Structure and Sex Composition, Rural-Urban, Occupational Structure of Population and Educational Composition; Population Composition of India: Characteristics and Problems. Migration of Population: Definition, types and determinants and Models of Migration. जनसंख्या संघटन : आयु संरचना एवं लिंग संघटन, ग्रामीण–शहरी, जनसंख्या की व्यावसायिक संरचना एवं शैक्षिक संघटन य भारत की जनसंख्या संघटन : विशेषताएँ एवं समस्याएँ। जनसंख्या प्रवास : प्रवास की परिभाषा, प्रकार एवं निर्धारक तत्व एवं मॉडल।

Unit IV	Population and Development; Population-Resource Regions of the World. Population and Environment. Population Policies in Developed and Less Developed Countries; Population Policy of India.Contemporary Issues: Ageing of Population, Declining Sex Ratio, Human Development Index (HDI), National Sample Survey Office (NSSO), Overview of Related Sustainable Development Goals 1-5 (SDGs 1- 5) - (1.No Poverty. 2. Zero Hunger 3.Good Health and Well-being 4.Quality Education 5.Gender Equality.). जनसंख्या एवं विकास : विश्व के जनसंख्या–संसाधन क्षेत्र। जनसंख्या एवं पर्यावरण. विकसित एवं विकासशील देशों में जनसंख्या नीतियां, भारत की जनसंख्या नीति. समसामयिक मुद्दे : बढ़ती जनसंख्या, घटता लिंगानुपात, मानव विकास सूचकांक, राष्ट्रीय नमूना सर्वेक्षण कार्यालय, संबंधित सतत विकास लक्ष्य 1–5 (एसडीजी 1– 5) का अवलोकन – (1. गरीबी खत्म करना 2. भूख से मुक्ति 3.अच्छा स्वास्थ्य और जीवन स्तर 4. गुणवत्तापूर्ण शिक्षा 5. लैंगिक समानता)।
Unit V	Settlement Geography: Meaning of Settlement, Evolution, size and spatial distribution pattern of human settlements, Physical structure of settlements; internal characteristics and external forms. Functional structure of settlements; functional classification of towns, Settlement hierarchy: concept and contributing factors अधिवास भूगोल : अधिवास का अर्थ, विकास, मानव बस्तियों का आकार और स्थानिक वितरण प्रतिरूप, बस्तियों की भौतिक संरचना, आंतरिक विशेषताएँ और बाह्य स्वरूप। अधिवासों (बस्तियों) की कार्यात्मक संरचना; नगरों का कार्यात्मक वर्गीकरण। अधिवास पदानुक्रम : अवधारणा और योगदान कारक।
	Suggested Readings **सहायक ग्रंथ / सामग्री**
Text Books	• Husain Majid, Population Geography, Anmol Publications, New Delhi. • Chandana, R. C., Introduction to Population Geography, Kalyani Publishers, New Delhi, 2013 • Mamoria, C. B., India's Population Problems, Kitab Mahal, New Delhi, 1981 • Maurya, S. D., Settlement Geography, ShardaPustak Bhawan, Allahabad. • मामोरिया, सी.बी., जनसंख्या भूगोल, साहित्य भवन पब्लिकेशन, आगरा। • चांदना, आर.सी.,जनसंख्या भूगोल, कल्याणी पब्लिशर्स, नई दिल्ली। • मौर्य, एस. डी., जनसंख्या भूगोल, शारदा पुस्तक भवन, इलाहाबाद।

	• मौर्य, एस. डी., अधिवास भूगोल, शारदा पुस्तक भवन, इलाहाबाद। • बंसल, एस. सी., ग्रामीण बस्ती भूगोल, मीनाक्षी प्रकाशन, मेरठ।
Reference Books	• Zelinsky, Wilbur, A Prologue to Population Geography, Prentice Hall, 1966 • Clarke, John I., Population Geography, Pergamon Press Inc., Oxford, 1973 • Demko, Geogre, J. et al, Population Geography, A Reader, McGraw Hill, New York, 1970 • Hudson, R. S. (1970): 'A Geography of Settlements', McDonald and Sons, London • Trewartha, G. T., A Geography of Population: World Patterns, John Wiley & Sons, New York, 1973 • Census of India, India: A State Profile, 2011 • UNDP, Human Development Report, Oxford University Press, Oxford, 2000 • United Nations, Methods for Projections of Urban and Rural Populations, No VIII, New York 1974 • United Nations, The Determinants and Consequences of Population Trends, Volume I, Population Studies No 50 • Woods, Robert, Population Analysis in Geography, Longman, London, 1979
Suggested E-Resources	• https://unstats.un.org • https://www.indiastat.com/ • https://data.worldbank.org/ • www.who.int/ageing • https://censusindia.gov.in/ • https://mospi.gov.in/NSSOa • https://www.unfpa.org/ • https://unstats.un.org/sdgs#

M.A./ M.Sc. (Two Years Degree Programme)	
Second Semester	
Subject- Geography	
Code of the Course	GEG8100T
Title of the Course	ENVIRONMENTAL GEOGRAPHY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the Course	4
Type of the Course	Discipline Specific Elective Course in Geography (GEC)
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Basic understanding of environmental phenomenon and issues of secondary level.
Co-requisites	None
Objectives of the Course	• To understand the concepts, phenomenon and approaches relating to environment and ecology with a geographical perspective. • To understand the anthropogenic interventions and resultant impacts on environment. • To understand the grave natural and human induced environmental challenges facing the humankind at national and global level. • To gain knowledge about the environmental governance, policy and legislative framework at national and global levels.
Learning Outcomes	After studying, students will be able to: • Detailed exposure to the concept of environment, processes and concepts. • In-depth knowledge of anthropogenic interventions and impacts, conservation strategies and planning.

	• Assessment and achievement of different environmental programs, policies and legislations.
Syllabus **पाठ्यक्रम**	
Unit I	Environmental Geography – Nature and scope, its relation with other physical and social sciences. Environment and Ecosystem: Concepts and approaches, Geographic classification, human ecology, functions – trophic levels, energy flows, cycles (geo-chemical, carbon, nitrogen and oxygen), food chain, food web and ecological pyramid. Concept of biodiversity and its conservation - Biodiversity hot spots in India. पर्यावरण भूगोल – प्रकृति और विषय वस्तु, अन्य भौतिक और सामाजिक विज्ञानों के साथ इसका संबंध। पर्यावरण और पारिस्थितिकी तंत्रः अवधारणाएं एवं उपागम, भौगोलिक वर्गीकरण, मानव पारिस्थितिकी, कार्य–ट्रॉफिक स्तर, ऊर्जा प्रवाह, चक्र (भू–रासायनिक, कार्बन, नाइट्रोजन एवं ऑक्सीजन), खाद्य श्रृंखला खाद्य जाल, और पारिस्थितिक पिरामिड। जैव विविधता की अवधारणा एवं इसका संरक्षण – भारत में जैव विविधता हॉट स्पॉट।
Unit II	Human interaction with environment – Phenomenon, causes and impacts: Urban environmental problems and their management - Urban Heat Island effect, atmospheric pollution, water pollution, noise pollution, solid waste, land degradation. पर्यावरण के साथ मानव की अन्तःक्रिया – घटना, कारण और प्रभावः शहरी पर्यावरणीय समस्याएं और उनका प्रबंधन – शहरी उष्ण द्वीप प्रभाव, वायुमंडलीय प्रदूषण, जल प्रदूषण, ध्वनि प्रदूषण, ठोस अपशिष्ट, भूमि क्षरण।
Unit III	Environmental hazards and disasters: Difference between hazard and disasters, vulnerability and risk, disaster risk reduction, Salient features of Sendai framework. Characteristics and causative factors and management of landslides, cyclones and floods (with special reference to India) Environmental issues - Phenomenon, causes and evidences/ impacts: Desertification, Global warming and Droughts. पर्यावरणीय संकट एवं आपदाएंः संकट एवं आपदा तथा भेद्यता एवं जोखिम में अन्तर, आपदा जोखिम में कमी, सेंडई फ्रेमवर्क की प्रमुख विशेषताएं, भूस्खलन, चक्रवात और बाढ़ की विशेषताएं और प्रेरक कारक और प्रबंधन (भारत के विशेष संदर्भ में)। पर्यावरणीय मुद्दे– घटना, कारण और प्रमाण/प्रभावः मरूस्थलीकरण,

	वैश्विक तपन और सूखा।
Unit IV	Environmental governance and legislation in India: Salient features of Environmental laws and Acts – The Wildlife Protection Act, The Water (Prevention and Control of Pollution) Act, The Air (Prevention and Control of Pollution) Act, The Forest (Conservation) Act; Environmental Policy of India, Concept and approaches of Environmental Impact Assessment (EIA) Environmental flagship programs (Project Tiger, Namami Gange Program, Jal Jeevan Mission, National Action Plan on Climate Change). भारत में पर्यावरण शासन और कानूनः पर्यावरण कानूनों और अधिनियमों की मुख्य विशेषताएं– वन्यजीव संरक्षण अधिनियम, जल (प्रदूषण की रोकथाम एवं नियंत्रण) अधिनियम, वायु (प्रदूषण की रोकथाम एवं नियंत्रण) अधिनियम, वन (संरक्षण) अधिनियम, भारत की पर्यावरण नीति, पर्यावरणीय प्रभाव आंकलन (ईआईए) की अवधारणा एवं उपागम। पर्यावरणीय प्रमुख कार्यक्रमः (बाघ परियोजना, नमामि गंगे कार्यक्रम, जल जीवन मिशन, जलवायु परिवर्तन पर राष्ट्रीय कार्य योजना)।
Unit V	Global initiatives – International treaties, International programmes and policies: Brundtland Commission, Kyoto Protocol, Agenda 21, Paris Agreement, Sustainable Development Goals 2030 (SDG), Status of India on SDG 6, 13, 14 & 15. वैश्विक पहल – अंतर्राष्ट्रीय संधियां, अंतर्राष्ट्रीय कार्यक्रम और नीतियांः ब्रंटलैंड आयोग, क्योटो प्रोटोकॉल, एजेंडा 21, पेरिस समझौता, सतत विकास लक्ष्य 2030 (एसडीजी), एसडीजी 6, 13, 14, और 15 पर भारत की स्थिति।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• सिंह सविन्द्र, 2015. पर्यावरण भूगोल, प्रयाग पुस्तक भवन, इलाहाबाद • माजिद हुसैन- पर्यावरण और पारिस्थितिकी – जैव विविधता, जलवायु परिवर्तन और आपदा प्रबंधन, जी के प्रकाशन • पीशर्मा .डी . पारिस्थितिकी और पर्यावरण, रस्तोगी प्रकाशन, मेरठ • आर राजगोपालन, पर्यावरण एवं पारिस्थितिकी, ओकब्रिज प्रकाशन • एच. एम. सक्सेना, पर्यावरण भूगोल, रावत प्रकाशन, जयपुर • Erach Bharucha (2005)., Textbook of Environmental Studies for Undergraduate Courses, Hyderabad, Universities Press • Singh Savindra, 2015. Paryavaran Bhoogol. Prayag Pushtak Bhawan, Allahabad (Hindi). • Singh, R.B., (ed.) 1990. Environmental Geography, Heritage Pub., New Delhi

Reference Books	• Gole, P., 2001. Nature Conservation and Sustainable Development in India, Rawat Pub., Jaipur. • Hooja, R., et. al., (ed.) 1999. Desert, Drought and Development: Studies in Resource Management and Sustainability, Rawat Pub, Jaipur • Hussain, M., (ed.) 1996. Environmental Management in India, Rawat Pub., Jaipur • Munn, T., (ed.) 2001. Encyclopaedia of Global Environmental Change, John Wiley & Sons, West Sussex 7. • Ramakrishanan, P. S. 1997. Conservation and Management of Biological Resources in Himalaya, Oxford & IBH Pub., New Delhi. • Strahler A.N. and Strahler A.H., 1974. Introduction to Environmental Science. California: Hamilton Pub. Co.
Suggested E-resources	• विज्ञान रिपोर्टर, https://sciencereporter.niscpr.res.in/ • डाउन टू अर्थ पत्रिका, https://www.downtoearth.org.in/ • भारत का आर्थिक सर्वेक्षण, https://www.indiabudget.gov.in/economicsurvey/ • पर्यावरण मंत्रालय की आधिकारिक वेबसाइट, https://moef.gov.in/hi/ • https://cpcb.nic.in • https://sdgs.un.org/goals • https://www.un.org/sustainabledevelopment/sustainable-development-goals/ Official websites of schemes, programmes and government Departments.

M.A / M.Sc. (Two Years Degree Programme)	
Second Semester	
Subject- Geography	
Code of the Course	GEG8101T
Title of the Course	CULTURAL GEOGRAPHY
Qualification Level of the Course	NHEQF Level 6.5
Credit of the Course	4
Type of the Course	Discipline Specific Elective Course in Geography
Delivery type of the Course	Lecture (40+20 = 60). The 40 hours for content delivery and 20 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Fundamental understanding of the socio-cultural phenomenon and inherent interest in the specialized field of inquiry.
Co-requisites	None
Objectives of the Course	• To enhance the understanding of the concept of culture and nature of cultural landscapes. • To understand the evolution of civilization, races and cultural spaces. • Develop analytical skills to decode culture. • To provide a critical understanding of the contemporary issues and the politics underlying it
Learning Outcomes	• Understanding cultural landscapes, cultural heritage and underpinnings of cultural conflicts. • Geographical epistemologies for analyzing culture. • Development of analytical capability to study contemporary issues relating to cultural groups and spaces.
Syllabus **पाठ्यक्रम**	

Unit I	Definition, nature, development and scope of Cultural Geography. Approaches and conceptual framework. School of cultural determinism, cultural adaptation, assimilation, integration, diffusion and environmental perception. सांस्कृतिक भूगोल की परिभाषा, प्रकृति, विकास एवं विषय वस्तु। उपागम एवं वैचारिक ढांचा। सांस्कृतिक नियतिवाद, सांस्कृतिक अनुकूलन, आत्मसात्यकरण, एकीकरण, प्रसरण और पर्यावरणीय अवगम की विचारधाराएं।
Unit II	Races of mankind: origin, distribution and characteristics, Zone and Strata theory. Evolution of Civilization: Mesopotamian, Nile, Indus and Hwang Ho Valley with respect to racial, ethnic, religious, linguistic, demographic and organizational characteristics. मानव प्रजातियांः उत्पत्ति, वितरण और विशेषताएं, कटिबंध एवं स्तर सिद्वांत। सभ्यता का विकासः प्रजातिय, जातीय, धार्मिक, भाषाई, जनसांख्यिकीय और संगठनात्मक विशेषताओं के संबंध में मेसोपोटामिया, नील, सिंधु और ह्वांग हो घाटी सभ्यताएं।
Unit III	Politics of Difference: caste, class, race, gender. Creation of Cultural Spaces: body, home, city, nation, and globe, Sanskritization and Cultural Urbanization, Cosmopolitization Major cultural hearths, realms and regions of the world – patterns, similarities and differences. Cultural complexes. Cultural regions of Indian Sub-continent. अंतर की राजनीतिः जाति, वर्ग, प्रजाति, लिंग। सांस्कृतिक स्थानों का निर्माणः शरीर, घर, शहर, राष्ट्र और ग्लोब, संस्कृतिकरण और सांस्कृतिक शहरीकरण, विश्वव्यापीकरण। विश्व के मुख्य सांस्कृतिक क्रोड, क्षेत्र और प्रदेश– प्रतिरूप, समानताएं एवं भिन्नताएं। सांस्कृतिक कॉम्पलेक्स, भारतीय उप–महाद्वीप में सांस्कृतिक क्षेत्र।
Unit IV	Cultural diversity – nature and bases: race, religion, language and nationalism. Major linguistic families - evolution, dispersion, classification and distribution. Religion: evolution, dispersion, classification and distribution. सांस्कृतिक विविधता– प्रकृति और आधारः प्रजाति, धर्म, भाषा और राष्ट्रवाद। प्रमुख भाषाई परिवार– विकास, प्रसरण, वर्गीकरण और वितरण। धर्मः विकास, प्रसरण वर्गीकरण और वितरण।
Unit V	Economy and society of tribal groups, theories of tribal groups;

	dwelling places as cultural explorations. Culture and environment ; Economy and cultural landscape ; Industrial revolution and cultural development ; Globalization and culture conflicts; Cultural Heritage. जनजातीय समूहों की अर्थव्यवस्था और समाज, आदिवासी समूहों के सिद्धांत; सांस्कृतिक अन्वेषण के रूप में आवास स्थान। संस्कृति और पर्यावरण; अर्थव्यवस्था एवं सांस्कृतिक परिदृश्य; औद्योगिक क्रांति और सांस्कृतिक विकास; वैश्वीकरण और संस्कृति संघर्ष; सांस्कृतिक विरासत।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Mukherjee, A.B. and A. Aijazuddin, India: Culture, Society and Economy, Inter-India Publication, New Delhi, 1985 • Maurya, S.D., Cultural Geography, Sharda Pustak Bhawan, Allahabad • Renu Devi, Cultural Geography, Book Enclave • Sen Jyotirmoy, Social and Cultural Geography, Kalyani Publishers, Agra • Singh, A.K., Approaches to Tribal Development, Swarup and Sona, New Delhi, 1994 • डॉ .मुनीरुद्दीन रिज़वी, 2001 सांस्कृतिक भूगोल, राजस्थान हिंदी ग्रंथागार अकादमी, जयपुर • डा.गायत्री प्रसाद , सांस्कृतिक भूगोल,शारदा पुस्तक भवन;प्रयागराज
Reference Books	• Anderson, K., Domosh, M., Pile, S., & Thrift, N. (eds.). 2003. Handbook of Cultural Geography, Sage. • Anderson, J, 2009. Understanding Cultural Geography – Places and Traces. Routledge, USA. • Crang Mike, 1999. Cultural Geography, Routledge, London. • Mitchell D., 2000. Cultural Geography: A Critcal Introduction, Blackwell Publishers, Inc. USA • Norton, W, 2006. Cultural Geography : Environments, Landscapes, Identities, Inequalities. Oxford University Press, Toronto. • Sopher D, 1980. An Exploration of India: Geographical Perspectives on Society and Culture, Cornell University Press, New York. • Spencer J.E. and Thomas, W.L. 1969. Cultural Geography. John Wiley and Sons inc., New York.
Suggested E-resources	http://www.fhpv.unipo.sk/~bucher/C.pdf https://www.mrtredinnick.com/uploads/7/2/1/5/7215292/introduction_to_cultural_geography.pdf https://uilis.usk.ac.id/oer/files/original/f434530b3275ce7cffea6cb534ebb16f.pdf

M.A./M.Sc. (Two Years Degree Program)	
Second Semester	
Subject-Geography	
Code of the Course	GEG8002P
Title of the Course	BASICS OF REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Practical Course in Geography
Delivery type of the Course	Practical (80+40). The 80 hours for content delivery include hands-on exercises, and 40 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	Fundamental understanding of geographical concepts & phenomena
Co-requisites	Basic computer knowledge
Objectives of the course	To develop fundamental understanding of geospatial technology by providing conceptual learning and technical skills in the fields of remote sensing, photogrammetry, digital cartography and GIS through open source and proprietary softwares.
Learning outcomes	• To develop basic understanding of Geospatial Technology. • To develop basic working geospatial skills. • To develop skill for use of aerial photographic techniques and instruments. • To understand various aspects of digital images acquired from satellites. • To create a strong foundation for students planning to opt for employment as GIS analyst and consultancy as their career.
Syllabus **पाठ्यक्रम**	
UNIT - I	***Fundamentals of Remote Sensing*** Remote Sensing Process and Principles, Electromagnetic Radiation (EMR) Spectrum, Laws of radiation, EMR interaction with earth's surface and Atmosphere. Spectral Signature. Spectral reflectance curves of vegetation, soil and water. Resolutions:

	Spatial, Spectral, Radiometric, Temporal. Visualization of multiband data – color composites: TCC, FCC, Pseudo color composite. **सुदूर संवेदन के आधारभूत सिद्धांत** सुदूर संवेदन प्रक्रिया एवं नियम, विद्युत चुम्बकीय विकिरण (ई.एम.आर.) स्पेक्ट्रम, विकिरण के नियम। ऊर्जा अन्योन्यक्रिया: वायुमंडलीय स्तर एवं पृथ्वी पर। स्पेक्ट्रल सिग्नेचर। वनस्पति, मिट्टी एवं पानी के स्पेक्ट्रल परावर्तन वक्र। विभेदन: धरातलीय, स्पेक्ट्रल, रेडियोमेट्रिक एवं कालिक। मल्टीबैंड डेटा का दृश्यांकन - रंग कंपोजिट: टी.सी.सी., एफ.सी.सी. एवं छद्म-रंग कंपोजिट।
UNIT - II	***Fundamentals of Aerial Photography*** Concept and Development of aerial photography. Types of aerial photographs. Factors affecting quality of aerial photographs. Aerial photographs versus maps. Pocket stereoscope and mirror stereoscope. Geometry of aerial photographs, Stereogram, stereo triplet and mosaic. Photographic scale, measuring height of object, Relief displacement. **वायु चित्रों के आधारभूत सिद्धांत** वायु फोटोग्राफी की अवधारणा एवं विकास। वायु चित्रों के प्रकार। वायु चित्रों की गुणवत्ता को प्रभावित करने वाले कारक। वायु चित्र एवं मानचित्र। पॉकेट स्टीरियोस्कोप एवं मिरर स्टीरियोस्कोप। वायु चित्रों की ज्यामिति, स्टीरियोग्राम, स्टीरियो ट्रिपलेट एवं मोज़ेक। फोटोग्राफिक मापनी, वस्तु की ऊंचाई मापन, उच्चावच विस्थापन।
UNIT - III	Satellite orbits & platforms: geo-synchronous and polar satellites, active and passive systems. Sensor types: Along Track, Across Track. Major satellite programs - Sensor specifications: NOAA, Landsat, IRS, SPOT, SENTINEL and World-View satellite systems. Selection and acquisition of satellite data (USGS and Bhuvan NRSC). Basic introduction to thermal, hyperspectral and microwave remote sensing. उपग्रह कक्षाएँ एवं प्लेटफ़ॉर्म: भू-स्थैतिक उपग्रह एवं ध्रुव कक्षीय उपग्रह, सक्रिय एवं निष्क्रिय संवेदक। सेंसर प्रकार: ट्रैक के अनुरूप, क्रॉस-ट्रैक। प्रमुख उपग्रह कार्यक्रम - सेंसर विनिर्देश: नोवा, लैंडसैट, आईआरएस, स्पॉट, सेंटिनल एवं वर्ल्ड-व्यू उपग्रह सिस्टम। उपग्रह डेटा का चयन एवं अधिग्रहण (यूएसजीएस एवं भुवन एनआरएससी)। तापीय, हाइपरस्पेक्ट्रल एवं माइक्रोवेव सुदूर संवेदन का परिचय।
UNIT - IV	***Fundamentals of GIS*** Definition, evolution and components of GIS. Data models: raster and vector data models. Datums, ellipsoid, geoid. Projected and Geographic Coordinate Systems, UTM coordinate system. Geometric rectification (Georeferencing). Attribute data input and management: data types, data entry, joining and relating tables. Attribute data manipulation. Thematic Data modeling. Spatial data

	editing: generation of vector layers. Data visualization. **जीआईएस के आधारभूत सिद्धांत** जीआईएस की परिभाषा, विकास एवं घटक। डेटा मॉडल: रास्टर एवं वेक्टर डेटा मॉडल। डेटम्स, गोलाभ, जियोइड। प्रक्षेपित एवं भौगोलिक निर्देशांक प्रणाली, यूटीएम निर्देशांक प्रणाली। ज्यामितीय परिवर्तन (जियोरेफरेंसिंग)। लक्षण आंकड़े प्रविष्टि एवं प्रबंधन: आंकड़ों के प्रकार, आंकड़े प्रविष्टि, तालिका जोड़ना एवं सम्बंधित करना। विषयगत आँकड़ा प्रतिरूप। लक्षण आंकड़ा परिचालन। स्थानिक डेटा संपादन: वेक्टर परतों को उत्पादन। डेटा दृश्यांकन।
UNIT - V	Image Enhancement techniques: Linear stretching and histogram equalization. Elements of visual image interpretation. Applications of RS GIS: LULC Change, Forest change, Urban sprawl, facility distribution. Thematic map generation using digital/ analog satellite image, aerial photographs. Map composition in QGIS. इमेज उच्चीकरण तकनीकें: रेखीय प्रसरन एवं हिस्टोग्राम प्रसामन्यीकरण। दृश्य इमेज विश्लेषण के तत्व। आरएस-जीआईएस के अनुप्रयोग: एल.यू.एल.सी. परिवर्तन, वन परिवर्तन, नगरीय प्रसार, सुविधा वितरण। डिजिटल/ एनालॉग उपग्रह चित्र, वायु चित्र एवं मानचित्र संरचना का उपयोग। मानचित्र निर्माण।
Practical Exercises	1. Data acquisition & accessing satellite data of area of interest. *(02 exercises)* 2. Data import and subset. *(02 exercises)* 3. Observation and identification of earth's features in various spectral bands and different types of images (PAN/ multi-spectral). *(01 exercise)* 4. Image display – Grey scale, pseudo color, TCC, FCC. *(04 exercises)* 5. Observation of spectral profiles of water, soil and vegetation. *(01 exercise)* 6. Image enhancement: Linear stretching, Histogram Equalization and interpretation of results. *(02 exercises)* 7. Stereo test using Pocket Stereoscope. *(01 exercise)* 8. Object identification using mirror stereoscope. *(01 exercise)* 9. Calculation of photo base & flight line in aerial photo. *(01 exercise)* 10. Determination of aerial photo scale. *(01 exercise)* 11. Georeferencing of toposheet. *(01 exercise)* 12. Generation of thematic maps of natural and cultural landscape using QGIS and Google Earth. *(02 exercises)* 13. Generation of thematic maps of natural and cultural landscape using analog/ digital satellite image/ aerial photographs. *(02 exercises)*

	14. Computation of area. *(01 exercise)*
	One local field trip of Udaipur city or neighboring area for ground truthing of earth features on satellite image & aerial photographs and collection of geocoded information for map generation.
	Suggested Reading **सहायक ग्रन्थ / सामग्री**
Text Books	• Lillesand, T.M. and Kiefer, R.W., 2015. *Remote Sensing and Image Interpretation*. 7th Edition, Wiley, New York. • Chang, Kang-tsung, 2003. *Introduction to Geographical Information Systems*. Tata McGraw Hill Publ. Co., New Delhi • Chauniyal, D.D., 2004. *Remote Sensing and Geographical Information Systems* (**in Hindi)**, Sharda Pustak Bhawan, Allahabad • American Society of photogrammetry: Manual of remote sensing, ASP, Falls Church, VA, 1983.
Reference Books	• Jensen, J.R., 2005. *Introductory Digital Image Processing: A Remote Sensing Perspective*. 3rd Edition, Prentice Hall, Upper Saddle River, 505-512. • Lo, C.P. and Yeung, Albert K. W., 2002. *Concepts and Techniques of Geographic Information Systems*. Prentice Hall of India, New Delhi. • Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D., 1999. *Geographic Information Systems. Principles, Techniques, Management, Applications*. John Wiley, New York. • Reddy, M. Anji, 2001. *Textbook of Remote Sensing and Geographic Information Systems*. B. S. Publs., Hyderabad. • Vyas P.R., 2014. *Remote Sensing and Geographical Information System: Basics and Applications*, Rawat Publications, Jaipur.
Suggested E-resources	• *Ebook on Remote Sensing Applications,* www.**nrsc**.gov.in/Learning_Centre_**EBook**.html • *E-Tutorial on Fundamentals of Remote Sensing*, Canada Centre for Mapping and Earth Observation, Natural Resources Canada, accessible at http://www.nrcan.gc.ca/earth-sciences/geomatics • www.qgistutorials.com • http://www.pasda.psu.edu/tutorials/gisbasics.asp • https://earth.google.com • bhuvan.nrsc.gov.in • india-wris.nrsc.gov.in • https://openstreetmap.org • http://openstreetmap.in

M.A./M.Sc. (Two Years Degree Program)	
Second Semester	
Subject-Geography	
Code of the Course	GEG8003P
Title of the Course	REPRESENTATION OF GEOGRAPHICAL DATA THROUGH MAPS
Qualification Level of the Course	NHEQF Level 6.5
Credit of the course	4
Type of the course	Discipline Centric Core Practical Course in Geography
Delivery type of the Course	Practical (80+40). The 80 hours for content delivery include hands-on exercises, and 40 hours of diagnostic assessment, formative assessment, and subject/ class activity, problem solving.
Prerequisites	This course on the Representation of Geographical Data Through Maps assumes' that the students are familiar with the basic concepts cartography of Graduation level.
Co-requisites	Fundamental mathematics upto secondary level and basic cartographic skills.
Objectives of the course	• To give a comprehensive & integrated knowledge and understanding of history of cartography and survey, mapping agencies of India and Scale. • To give an overview of the National Map Policy, Extraction of geographical information from toposheets, new and old series of toposheet. • To give an understanding of qualitative and quantitative mapping techniques of cartography. • To give an understanding of Principles and Elements of Map Composition and use of Bhuvan and Open Street Maps platform for mapping.
Learning outcomes	• Knowledge and understanding of history of cartography and survey, mapping agencies of India and scale.

	• Knowledge and understanding of National Map Policy, extraction of geographical information from toposheets, new and old series of toposheet. • Knowledge and understanding of qualitative and quantitative mapping techniques of cartography. • Knowledge and understanding of Principles and Elements of Map Composition and use of Bhuvan and Open Street Maps platform for mapping.
-	**Syllabus** **पाठ्यक्रम**
UNIT - I	History of Cartography and Maps. Survey of India, NATMO. Concept of Ellipsoid, Datum and Projections. Scale and Scale Factor. मानचित्रकला एवं मानचित्रों का इतिहास। भारतीय सर्वे विभाग, नाटमो। दीर्घवृत्ताभ, डेटम एवं प्रक्षेप की संकल्पना। मापनी एवं मापनी कारक।
UNIT - II	New Map Policy, 2005. Toposheets and its Sources: SOI, Nakshe Web Portal. Extraction of geographical information from toposheets: physical and cultural aspects. Old and New series topographic maps (*Open Series Maps*). नई मानचित्र नीति, 2005। स्थलाकृतिक मानचित्र एवं उनके स्रोतः एसओआई, नक्शे वेब पोर्टल। स्थलाकृतिक मानचित्रों से भौगोलिक सूचनाओं का निष्कर्षणः प्राकृतिक एवं सांस्कृतिक पहलू। पुरानी एवं नई श्रृंखला के भूआकृतिक मानचित्र (खूली श्रृंखला मानचित्र)।
UNIT - III	Principles and Elements of Map Composition; Good and Bad Maps. Map Classification – Qualitative maps; Colour-patch method, Simple shade method, Pictorial method, Choro-schematic method, Naming method. मानचित्र संघटन के सिद्धांत एवं तत्व; अच्छे एवं खराब मानचित्र। मानचित्र वर्गीकरण– गुणात्मक मानचित्र; रंगारेख विधि, सामान्य छाया विधि, चित्रीय विधि, वर्णप्रतीकी विधि, नामांकन विधि।
UNIT - IV	Map Classification – Quantitative maps; Choropleth method, Isopleth method, Dot map: Simple dot map, Stilgenbaure's method and Sten de Geer's method, Diagrammatic method: Bar and Pie. मानचित्र वर्गीकरण– मात्रात्मक मानचित्र; वर्णमात्री विधि, सममान रेखा विधि, बिन्दु विधिः सामान्य बिन्दु मानचित्र, स्टिलजेनबोअर विधि एवं स्टेन डी गीर विधि, आरेखी विधिः दण्ड एवं वृत्तारेख।
UNIT - V	Online resources for generation of thematic maps for India/Rajasthan – Bhuvan and Open Street Maps. भारत/राजस्थान के विषयक मानचित्र बनाने के ऑनलाइन संसाधन– भुवन

	एवं ओपन स्ट्रीट मानचित्र।
Exercises **अभ्यास**	
Practical Exercises	1. Scheme of Toposheets – old and n ew (2 Exercises) 2. Extraction of geographical information from toposheets: physical and cultural aspects. (2 Exercises) 3. Prepare one map for each method of qualitative maps. (5 Exercises) 4. Prepare one map for each method of quantitative maps. (7 Exercises) 5. Generate Choropleth map of Rajasthan by using Bhuvan portal. (1 Exercise) 6. Generate Road Network (NH & SH) & Water Bodies map of Rajasthan by using Open Street Maps. (2 Exercises)
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Mishra, R.P. Fundamentals of Cartography, Concept Publishing Company PVT. LTD. New Delhi. • Khullar, D.R.: Essentials of Practical Geography, New Academic Publishing Company, Jalandhar. • Singh, R.L. & Singh, R.P.B Elements of Practical Geography, Kalyani Publishers, New Delhi. • Singh, R.L., Elements of Practical Geography, Student Friends, Allahabad. • Mishra, R.N., Sharma, P.K., Practical Geography, Pareek Publication • मिश्रा, आर. एन., प्रायोगिक भूगोल, रावत पब्लिकेशन, जयपुर। • शर्मा,जे.पी., प्रयोगात्मक भूगोल की रूपरेखा, रस्तोगी पब्लिकेशन्स, मेरठ। • खुल्लर, डी.आर., प्रयोगात्मक भूगोल के तत्व, न्यू एकेडेमिक पब्लिशिंग कंपनी, जालंधर। • चौनियाल, डी. डी. सुदूर संवेदन एवं भौगोलिक सूचना प्रणाली के सिद्धांत, शारदा पुस्तक भवन, इलाहाबाद।

Reference Books	• Raize, E. General Cartography, McGraw Hill Book Co. London. • William, J. T., Surveying and Field Work, Constable • B.C. Punmia, 1998: Surveying and Field Work. Vol. I, Laxmi Publications, New Delhi.
Suggested E-resources	• https://www.surveyofindia.gov.in/ • https://portal.natmo.gov.in/en/ • https://www.surveyofindia.gov.in/documents/national-map-policy.pdf • https://www.tamiu.edu/cees/courses/fall2018/geol4460_labs/lecture4.pdf • https://www.surveyofindia.gov.in/pages/open-series-map-osm- • http://164.100.58.63/pages/display/189-download-open-series-maps(osm) • https://www.nrsc.gov.in/sites/default/files/pdf/Software_download/MappingUtility_SOI_to_OSM__Usermanual.pdf • https://geographyfieldwork.com/ • https://bhuvan.nrsc.gov.in/home/index.php • https://vedas.sac.gov.in/en/ • https://bhoonidhi.nrsc.gov.in/bhoonidhi/home.html • https://bhuvan-app1.nrsc.gov.in/gisviewer/ • https://education.nationalgeographic.org/ • https://secc.gov.in/ • http://shaileshchaure.com/qgis-plugin.php • https://unstats.un.org/unsd/demographic/meetings/egm/sampling_1203/docs/no_1.pdf • https://english.okstate.edu/images/Documents/Preston/Oklahoma_Dialectology/12_Quantitative_mapping_techniques.pdf • https://www.e-education.psu.edu/geog486/node/641

B.A. (Three Years Degree Program)	
First Semester	
Subject-Geography	
Code of the Course	**GEG5000T**
Title of the Course	PHYSICAL GEOGRAPHY I - LITHOSPHERE
Qualification Level of the Course	4.5
Credit of the course	4
Type of the course	DCC
Delivery type of the Course	L
Prerequisites	Basic knowledge of Geography of 10^{th} standard
Co-requisites	None
Objectives of the course	The course lays foundation of the fundamentals of geomorphology a sub-branch of Physical Geography.
Learning outcomes	• To make students understand their immediate surroundings. • To develop an understanding of theoretical concepts related with formation of the earth. • To create strong foundation of various geomorphological phenomena shaping the earth surface. • To extend knowledge of landform dynamics. • To cover basic contents for various competitive examinations such as civil services, state level PSC exams, school education exams and so on.
Syllabus **पाठ्यक्रम**	
UNIT - I	Introduction to Physical Geography; The nature and scope of Geomorphology. Origin of the Earth- Tidal Hypothesis of James Jeans and Big Bang theory. Geological Time Scale. Interior of the Earth भौतिक भूगोल का परिचय; भू-आकृति विज्ञान की प्रकृति एवं कार्यक्षेत्र। पृथ्वी की उत्पत्ति - जेम्स जीन्स की ज्वारीय परिकल्पना एवं बिग बैंग सिद्धांत। भूवैज्ञानिक समय मापनी। पृथ्वी का आंतरिक भाग।
UNIT - II	Theories of mountain building: Geosynclinal Orogen theory of Kober and Plate tectonic theory. Isostasy: Concept and Views of Airy and

	Pratt. Origin of the continent and oceans: Wegner's theory of Continental drift and Plate tectonics. Diastrophism: - Faults & folds. पर्वत निर्माण के सिद्धांत: कोबर का भूसन्नति पर्वत निर्माण सिद्धांत एवं प्लेट विवर्तनिकी सिद्धांत। भू-संतुलन: अवधारणा, एरी एवं प्रैट के विचार। महाद्वीप एवं महासागरों की उत्पत्ति: वेगनर का महाद्वीपीय विस्थापन सिद्धांत एवं प्लेट विवर्तनिकी सिद्धांत। पटल विरूपण :- भ्रंश एवं वलन।
UNIT - III	Rocks – origin and types. Weathering: - Physical, Chemical and Biological. Drainage patterns; mass wasting. Concepts of Cycle of erosion: Davis & Penck चट्टानें - उत्पत्ति एवं प्रकार। अपक्षय - भौतिक, रासायनिक एवं जैविक। अपवाह तंत्र; बृहत् क्षरण। अपरदन चक्र की अवधारणाएँ: डेविस और पेंक।
UNIT - IV	Erosional and depositional works of the following: Fluvial, Wind, Glacial, Karst and Coastal. निम्नलिखित के अपरदनात्मक एवं निक्षेपात्मक कार्य : नदी, पवन, हिमानी, कार्स्ट और तटीय।
UNIT - V	Application of geomorphological studies to understand human activities: settlements, transport, land-use, mining. Natural Hazards: Landslides, Avalanche, Earthquakes, Volcanoes. मानवीय गतिविधियों को समझने के लिए भू-आकृति विज्ञान के अध्ययन का अनुप्रयोग: बस्तियाँ, परिवहन, भूमि-उपयोग, खनन। प्राकृतिक खतरे: भूस्खलन, हिमस्खलन, भूकंप, ज्वालामुखी।
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Singh, S., Geomorphology, Prayag Pustakalaya, Allahabad, 1998. • सविंद्र सिंह: भौतिक भूगोल, वसुन्धरा प्रकाशन, गोरखपुर • एच. एस. शर्मा: भौतिक भूगोल, पंचशील प्रकाशन, जयपुर • गायत्री प्रसाद : भू आकृति विज्ञान] शारदा पुस्तक भंडार, 2012 • एस .एल .गुप्ता : भू आकृति विज्ञान, हिंदी माध्यम कार्यान्वयन निदेशालय, दिल्ली विश्वविद्यालय, 2008
Reference Books	• Monkhouse, F. J., Principles of Physical Geography, Hodder and Stoughton, London, 1960. • Sharma, H. S., Tropical Geomorphology, Concept, New Delhi, 1987. • Steers, J. A., The Unstable Earth: Some Recent Views in Geography, Kalyani Publishers, New Delhi, 1964. • Strahler, A. N. and A. H. Strahler, Modern Physical Geography, John Wiley & Sons, 1992.
Suggested E-resources	• NCERT Geography books of 11th and 12th standards. • https://www.thoughtco.com/search?q=geography • https://bhuvan-app1.nrsc.gov.in/mhrd_ncert/

B.A./B.Sc. (Three Years Degree Program)	
First Semester	
Subject - Geography	
Code of the Course	**GEG5000P**
Title of the Course	LAB I - SCALES AND REPRESENTATION OF RELIEF
Qualification Level of the Course	4.5
Credit of the Course	2
Type of the Course	DCC
Delivery type of the Course	P
Prerequisites	Basic understanding of Geography and Mathematics up to X Standard.
Co- requisites	None
Objective of the Course	This is the basic course and sub discipline of Geography, This paper includes the conceptualization of various aspects including scale and representation of relief features on maps. A map with scale helps the user to estimate the actual size and length of the object indicated on the map. It is aimed to provide knowledge of various methods for the representation of three dimensional relief features on two dimensional surfaces with precision and effective visualization.
Learning Outcomes	• It contains basic concepts and importance of scales. • It explains various methods for the representation of scales; Statement method, Representative fraction and Graphical scale (Plain, Comparative, Diagonal and Vernier scales). • It represents characteristics, merits and demerits of all types of scales. • It provides various methods of relief representation; Pictorial methods, Mathematical methods and Composite Methods. It also deals with characteristics, merits and demerits of all types of methods of relief representation.

	• Relief features of various topography have been presented by contours.
Syllabus **पाठ्यक्रम**	
UNIT I	Scales: Definitions, importance of scales, selection of scales, Methods of representation of scales: statement method, representative fraction; conversion of scales. मापनी: परिभाषा एवं महत्व; मापनी का चयन; मापनी व्यक्त करने की विधियाँ : कथनात्मक विधि, निरूपक भिन्न विधि; मापनियो का रुपान्तरण।
UNIT II	Graphical scales: characteristics, merits & demerits. Types of graphical scale: Plain scale, Comparative scale (scale of different units and time scale.) characteristics, merits and demerits of plain & comparative scales. (Two exercises for each scale of different measurement units. = 04 exercises) आलेखी मापनी: विशेषताएँ, गुण एवं दोष; आलेखी मापनी प्रकार : सरल मापनी एवं तुलनात्मक मापनी (विभिन्न इकाइयों वाली मापनी एवं समय मापनी) । इन मापनियो की विशेषताएं, गुण एवं दोष । (विभिन्न माप इकाइयों के प्रत्येक पैमाने के लिए दो अभ्यास = 04 अभ्यास)
UNIT III	Diagonal scale (different units), Vernier scale: least count, types of vernier scales. Characteristics, merits and demerits of diagonal and vernier scale. (Two exercises for each scale of different measurement units = 04 exercises) विकर्ण मापनी (विभिन्न मात्रक); वर्नियर मापनी: अल्पतमांक, वर्नियर मापनी के प्रकार । विकर्ण व वर्नियर मापनी की विशेषता, गुण व दोष। (विभिन्न माप इकाइयों के प्रत्येक पैमाने के लिए दो अभ्यास = 04 अभ्यास)
UNIT IV	Representation of relief: Introduction and importance and methods of relief representations. Qualitative or Pictorial methods for the representation of relief features- Hachure method, Hill shading method, Trachographic method, Morphographic method; their characteristics, merits and demerits. (04 Exercise) Quantitative or mathematical methods for relief representation - Spot height, Bench mark. Trigonometric stations, form lines and contour lines (principals of contouring, interpolation of contour lines and methods of contour representation). Composite methods of relief representation. Their characteristics, merits and demerits. (05

	Exercise) उच्चावच निरुपण : परिचय और महत्व; उच्चावच निरुपण की विधियाँ; मात्रात्मक / चित्रमय: हैश्युर प्रणाली, पर्वतीय छायाकरण, ट्रैकोग्राफीय विधि, आकृतिक विधि एवं इन विधियों की विशेषताए, गुण व दोष। (4 अभ्यास) उच्चावच निरूपण की मात्रात्मक / गणितीय विधियाँ : स्थानिक ऊचाईयाँ, तल चिन्ह, त्रिकोणमिति स्टेशन, आकृति रेखाए, समोच्च रेखाए;(समोच्च रेखाओ के सिद्धान्त ,समोच्च रेखाओं का अंतर्वेशन, सम्मोच रेखाओं के निरूपण की विधियां) ।उच्चावाच निरूपण की मिश्रित विधियां; इन विधियों की विशेषताएं, गुण व दोष।(5 अभ्यास)
UNIT V	Drawing of profiles: Serial (at least four), superimposed, projected and composite profiles. (04 Exercise) Representation of relief by contours: Conical hill, concave slope, convex slope, escarpment, cliff, ridge, gorge, U shaped valley, V-shaped valley, plateau, waterfall, ox bow lake, Ria coast, fiord coast. (14 diagrams on 07 sheets) परिच्छेदिका निरूपण; संक्रम परिच्छेदिकाए (कम से कम चार), अध्यारोपित परिच्छेदिका, प्रक्षिप्त परिच्छेदिका, मिश्र परिच्छेदिका। (04 अभ्यास) समोच्च रेखाओं के द्वारा उच्चावच लक्षणों का निरूपण: शंक्वाकार पहाड़ी, अवतल ढाल, उत्तल ढाल, कगार, भृगु, कटक, महाखंड, U-आकार की घाटी, V-आकार की घाटी, पठार, जलप्रपात, गोखुर झील, रिया तट, फियोर्ड तट।(7 शीट पर 14 आरेख)
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	1. Mishra, R.N. and Sharma, P.K., Practical Geography Methods and Techniques, Pareek Publication, Jaipur 2023. 2. Khullar, D.R., Essentials of Practical Geography, New Academic publication, Jalandhar 2000. 3. Singh, R.L., Elements of Practical Geography, Kalyani Publication, New Delhi. 4. Khan, M.Z.A., Text Book of Practical Geography, New Delhi 1998. 5. Sarkar, A.K., Practical Geography-A Systematic Approach, Oriental Longman, Calcutta, 1997. 6. जे.पी. शर्मा, प्रायोगिकभूगोल, रस्तोगी प्रकाशन, मेरठ, 2016. 7. आर.एन. मिश्रा एवं पी.के. शर्मा, प्रायोगिक भूगोल, राज पब्लिकेशन नईदिल्ली, 2019. 8. डी. आर. खुल्लर, प्रायोगिक भूगोल, कल्याणी पब्लिकेशन, 2019. 9. डॉ. बी.सी. जाट, प्रायोगिक भूगोल, पंचशील प्रकाशन, जयपुर, 2020. 10. इन्द्रपाल एवं माथुर मानचित्र प्रक्षेप. राजस्थान हिन्दीग्रंथ अकादमी, 2017.

Reference Books	1. Robinson, A.H., Morrison J.L., Muehrcke P.C., Kimerling A.J., Guptill S.C., Elements of Cartography, John Willey and Sons, U.S.A., 1995. 2. Monkhouse, E.J. and Wilkinson, H.R., Map and Diagrams, Lethuen, London 1994
Suggested E-resources	

B.A (Three Years Degree Program)	
Second Semester	
Subject- Geography	
Code of the Course	**GEG5001T**
Title of the Course	HUMAN GEOGRAPHY
Qualification Level of the Course	4.5
Credit of the Course	4
Type of the Course	DCC
Delivery type of the Course	L
Prerequisites	Basic understanding of geographical concepts of Secondary level.
Co-requisites	None
Objectives of the Course	• To provide understanding of numerous dimensions of human geography and cultural landscape from global to local level. • Detailed analysis of demographic growth and distribution. • Understanding of the relationship between population, resource and crisis.
Learning Outcomes	• Detailed exposure of contemporary relevance of natural and cultural landscape. • In-depth knowledge of space and society of cultural regions. • Understanding the settlement pattern and population resource relationship.
Syllabus **पाठ्यक्रम**	
UNIT - I	Human Geography: Definition, Scope and Principles; Contemporary, Relevance, Understanding of Cultural Landscape, Man-nature relationship: Determinism, Possibilism and Neo-determinism मानव भूगोलः परिभाषा, क्षेत्र और सिद्धांत, समसामयिक, प्रासंगिकता, सांस्कृतिक परिदृश्य की समझ, मानव–प्रकृति संबंधः नियतिवद, संभावनावाद और नव–नियतिवाद।
UNIT- II	Population: Population Growth and Distribution, Density of the World; Population Composition; Malthusian and Demographic Transition Theories जनसंख्याः जनसंख्या वृद्धि और वितरण, विश्व का घनत्व, जनसंख्या सरंचना, ,

	माल्थसवाद और जनांकिकीय संक्रमण सिद्धांत।
UNIT - III	Space and Society: Cultural Regions; Race (Griffith Taylor Classification), Tribes-Eskimo, Bushmen, Pygmies, Santhal, Nagas, Bhil, Religion and Language स्थान और समाज ; सांस्कृतिक क्षेत्र ; प्रजाति–ग्रिफिथ टेलर का वर्गीकरण ; जनजातियां–एस्किमो, बुशमेन, पिग्मी, संथाल, नागा, भील, धर्म और भाषा।
UNIT - IV	Settlements: Types of Rural Settlements; Classification of Urban Settlements; Christaller's Central Place Theory, Trends and Patterns of Urbanization in the World अधिवास– ग्रामीण अधिवास के प्रकार; शहरी अधिवास का वर्गीकरण; क्रिस्टालर का केन्द्रीय स्थान सिद्धांत; विश्व शहरीकरण के प्रवृतियां एवं प्रतिरूप।
UNIT - V	Migration, causes, types and consequences, Population-Resource-Migration Relationships: Global pattern of development: Human Development Index (HDI) प्रवास– कारण, प्रकार और परिणाम, जनसंख्या–संसाधन–प्रवसन संबंध, विकास का वैश्विक प्रतिरूप, मानव विकास सूचकांक – (एचडीआई)
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Hussain, Majid. (2012). Human Geography, Rawat Publications, Jaipur (Hindi and English) • Johnston, R., Gregory, D., & Pratt, G., et al. (2008). The Dictionary of Human Geography, Blackwell Publication. • Kaushik, S.D. (2010). Manav Bhugol. Meerut, India: Rastogi Publication • Maurya, S.D. (2012). Manav Bhugol. Allahabad, India: Sharda Pustak Bhawan • गुर्जर, आर के एवं जाट, बी.सी. मानव भूगोल, पंचशील प्रकाशन, जयपुर • शर्मा, बी.एल. एवं व्यास, पी.आर. एवं भारद्वाज, पलक, मानव भूगोल, पंचशील प्रकाशन, जयपुर • हुसैन, माजिद, भौगोलिक मॉडल, रावत प्रकाशन जयपुर
References Books	• Certificate Physical and Human Geography by Goh Cheng Leong (Author)
Suggested E-Resources	https://web.ung.edu/media/university-press/human-geography.pdf https://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1033&context=ssci_fac

B.A (Three Years Degree Programme)	
Second Semester	
Subject- Geography	
Code of the Course	**GEG5001P**
Title of the Course	LAB II - REPRESENTATION OF SOCIO-ECONOMIC DEMOGRAPHIC DATA
Qualification Level of the Course	4.5
Credit of the Course	2
Type of the Course	DCC
Delivery type of the Course	P
Prerequisites	Basic understanding of mathematics and statistics.
Co-requisites	None
Objectives of the Course	• Developing an understanding of the socio-economic-demographic phenomenon through interpretation of diagrams. • Developing preliminary professional cartographic skills of representation of socio-economic-demographic data.
Learning Outcomes	Learning : • Cartography as a Science. • To summarize and represent socio-economic-demographic data using appropriate methods. • To differentiate between the various types of diagrams, and understand their relative merits , limitations and uses. • The principles and rules of effective cartographic representation of socio-economic-demographic data. • Developing understanding of insights gained through diagrammatic representation of data.
Syllabus **पाठ्यक्रम**	
UNIT - 1	Cartography as a Science - nature, scope and history of Cartography; Cartographic materials and tools. Meaning of social- economic demographic data. Data types – Quantitative and Qualitative data. 2 Exercises

	मानचित्रकला एक विज्ञान - प्रकृति, अध्ययन–क्षेत्र एवं इतिहास, मानचित्रण की सामग्री एवं उपकरण। सामाजिक–आर्थिक जनांकिकीय आँकड़ों का अर्थ, आंकड़ों के प्रकार - गुणात्मक एवं मात्रात्मक आंकड़े । 2 अभ्यास
UNIT - 2	Diagrams - meaning and classification. Difference between Graphs and Diagrams. One dimensional diagram: Line diagram, Bar diagram - Simple bar, Compound bar, Multiple bar and Duo-directional bar. Pyramid diagram- meaning and types; Simple, Superimposed and Compound pyramid diagram. 8 Exercises आरेख : अर्थ एवं वर्गीकरण, आरेख एवं आलेख में अंतर। एक विमीय आरेखः रेखा– आरेख, दण्ड आरेख– सरल दण्ड आरेख, मिश्रित दण्ड –आरेख, बहु दंड आरेख, द्वीदिशा दंड आरेख। पिरामिड आरेख – अर्थ एवं प्रकार ; सरल, अध्यारोपित एवं मिश्रित पिरामिड आरेख्ज्ञं 8 अभ्यास
UNIT - 3	Two- Dimensional Diagrams - meaning and types ; Unit square diagram, Square block diagram, Rectangular diagram- Simple rectangular diagram, Divided rectangular diagram, Wheel diagram. 5 Exercises द्वि–विमीय आरेख - अर्थ एवं प्रकार ; इकाई वर्ग आरेख, वर्गाकार, ब्लॉक आरेख, आयताकार आरेख– साधारण आयताकार आरेख, विभाजित आयताकार आरेख, चक्र आरेख। 5 अभ्यास
UNIT - 4	Three - Dimensional Diagrams – meaning and types, Spherical diagram, Cube diagram; Sten-de-Geer's and Stilgen-Bauer's methods for population distribution. Bar diagram maps, Pie diagram maps. 6 Exercise त्रिविमीय आरेख; त्रिविमीय आरेख का अथ एवं प्रकार, गोलीय आरेख, घनारेख; जनसंख्या वितरण हेतु स्टेन–डी–गीर एवं स्टिलजेन बोअर की विधि; दण्ड आरेख मानचित्र, वृत्तारेख मानचित्र। 6 अभ्यास
UNIT - 5	Graphs - Simple linear graph, Poly linear graph. Representation of transport data – Cartograms, Value- area Cartogram, Traffic flow diagram. Acquiring latest socio-economic- demographic data from government web-sources – Census / transport / agricultural / land use data. Representation using appropriate diagram / graph. 8 Exercise

	आलेख– साधारण रैखिक आलेख, बहु रैखिक आलेख। यातायात के आंकड़ों का निरूपण – मानारेख , क्षेत्र – मूल्य मानारेख , यातायात प्रवाह आरेख। सरकारी वेब स्रोतों से नवीनतम सामाजिक–आर्थिक–जनांकिकीय आंकड़े प्राप्त करना– जनगणना / यातायात / कृषि / भूमि उपयोग के आंकड़े। उपयुक्त आरेख / आलेख द्वारा प्रदर्शित करना। 8 अभ्यास
	Suggested Readings **सहायक ग्रन्थ / सामग्री**
Text Books	• Mishra R N and Sharma P K., Practical Geography:: Methods and Techniques, Pareek Publications. • Mishra, R.P. Fundamentals of Cartography, Concept Publishing Company Pvt. Ltd. New Delhi. • Khullar, D.R.: Essentials of Practical Geography, New Academic Publishing Company, Jalandhar. • Singh,R.L. & Singh,R.P.B. Elements of Practical Geography, Kalyani Publishers, New Delhi. • Singh,R.L., Elements of Practical Geography, Student Friends, Allahabad. • मिश्रा, आर. एन.ए प्रायोगिक भूगोल, रावत पब्लिकेशन, जयपुर। • शर्मा, जे.पी., प्रयोगात्मक भूगोल की रूपरेखा, रस्तोगी पब्लिकेशन्स, मेरठ। • खुल्लर, डी. आर , प्रयोगात्मक भूगोल के तत्व, न्यू एकेडेमिक पब्लिशिंग कंपनी, जालंधर।
References Books	• Raize,E.,General Cartography,McGraw Hill Book Co.London. • Monkhouse F.J. and Wilkinson H.R. , Maps and Diagrams, B.I. Publications Pvt. Ltd. • Robinson A.H., Morrison J.L., Muehrcke P.C., Kimerling A.J. and Guptill, S.C., Elements of Cartography, 6th Edition, Wiley
Suggested E-Resources	• https://censusindia.gov.in • https://rajcensus.gov.in • https://mospi.gov.in/27-socio-economic-statistics • https://secc.gov.in • https://unstats.un.org • https://www.indiastat.com • https://data.worldbank.org • https://bhuvan.nrsc.gov.in