

P. D. E. A's
Prof. Ramkrishna More Arts, Commerce and Science
College Akurdi Pune-411044
(Autonomous)



Affiliated to

Savitribai Phule Pune University [SPPU]



B. A. With Major Geography

(Three years B. Sc. in Geography / Four Years Honors in Geography)

Choice Based Credit System-2024 Pattern

Under

Autonomy and NEP-2020

From Academic Year
2024-2025

Syllabus

F. Y. B. A., S. Y. B. A. and T. Y. B. A. With Major
Geography

Board of Studies in Geography

Department of Geography

Prof. Ramkrishna More Arts, Commerce and Science
College Akurdi Pune-411044

Rules and Regulations

1. National Credit Framework (NCrF): For creditisation and integration of all higher education qualifications leading to a certificate/ diploma/ degree with multiple entry and exit options, college will refer to National Credit Framework (NCrF) which encompasses the qualification frameworks for higher education, vocational and skill education and school education, namely National Higher Education Qualification Framework (NHEQF), National Skills Qualification Framework (NSQF) and National School Education Qualification Framework (NSEQF) respectively.

2. Structure of Four years multidisciplinary UG Programme and Five Years Integrated Multidisciplinary Master's Degree Programmes with Multiple Entry and Exit Options at Different Levels:

- (i) Students will have the flexibility to enter four years multidisciplinary Under Graduate Programme in odd semesters and exit a programme after the successful completion of even semesters as per their future career needs.
- (ii) Students will get a Certificate after a One-year programme (minimum 40 Credits), a Diploma after two years (minimum 80 Credits), a Bachelor's degree after three years (minimum 120 Credits), and a Bachelor's degree with Research or Honours after Four years (minimum 160 Credits).

3. Qualification Type and Credit Requirements of Four Years Multidisciplinary Degree Programme with Multiple Entry and Exit Options

- (i) Details of qualifications, minimum credit requirements, exit credit courses, year and semester are as under:

Levels	Qualification Title	Credit Requirements		Semester	Year
		Minimum	Maximum		
4.5	UG Certificate	40	44	2	1
5.0	UG Diploma	80	88	4	2
5.5	Three Years Bachelor's degree	120	132	6	3
6.0	Bachelor's degree Honour's with Major	160	176	8	4
	Bachelor's degree Honour's with Major	160	176	8	4
7.0	Master's Degree	200	220	10	5
8.0	Ph. D.	----	-----	-----	----

- (ii) An exit 6-credit bridge course(s) lasting two months, including at least 6-credit job specific internship/apprenticeship that will help the graduates acquire job-ready competencies required to enter the workforce will be an additional requirement for the award of the undergraduate Certificate/ Diploma/ three-year Bachelor's Degree.
- (iii) On exit, the students will have the option to re-enter the programme in the college, or in a different higher education institution. Re-entry at various levels for lateral entrants in academic programmes should be based on the earned and valid credits as deposited and accumulated in the Academic Bank of Credits (ABC) through Registered Higher Education Institutions (RHEI) and proficiency test records.
- (iv) Eligibility for admission to the fourth year of four-year **Honours with Research Degree Programmes** as per UGC guidelines: Minimum CGPA of 7.5 or minimum 75% at three-year degree.

- (v) PG curriculum, as illustrated below, have flexibility a) One-year Post-Graduate Diploma (PGD), b) Two-year Post-graduate Programme and c) 5 Years Master's degree programmes with multiple Entry and Exit options at different levels.

(a) Post-Graduate Diploma (PGD): Programme duration- One year (2 semesters) after any bachelor's degree, min. 40 credits

(i) UGC: 1-Year (2 semesters) Post-Graduate Diploma (PGD) after 3-years Bachelor's degree: Level 6.0

(ii) UGC: 1-Year (2 semesters) PGD after 4 years Bachelor's degree (Honors/ Research): Level 6.5

(b) Master's Degree:

(i) UGC: 2-Years (four semesters) Master's Degree after obtaining a 3-years Bachelor's degree, Minimum 40 credits/year, second year devoted entirely to research, PG – 2nd year: Level 6.5

OR

(i) 1-Year (two semesters) Master's Degree after obtaining a 4-year Bachelor's degree (Honours/Research): Minimum 40 credits: Level 6.5

(c) Level 8 represents Ph. D. Research Degree.

(d) A 5-year Integrated Bachelor's and Master's programme shall have a minimum of 220 credits.

(e) Master's and doctoral programmes, while providing rigorous research-based specialization, should also provide opportunities for multidisciplinary work, in academia, government, research institutions, and industry.

4. Lateral Entry/ Re-entry at higher Levels after exit from lower levels of four years multidisciplinary UG degree programme:

(i) The credit points earned and accumulated shall be used to determine the eligibility for taking admission to various programs at multiple levels, subject to fulfilment of the broad principles laid down under NCERF. Students who leave with a Certification, Diploma, or a Basic Bachelor's Degree will be eligible to re-enter the programme at the exit level to complete or progress to the next level through lateral entry mode. Depending upon the academic and physical facilities available, the State Universities/ Autonomous Colleges (Higher Education Institutions or HEI) may earmark specific seats/ intake for lateral entry into the second year/ third year/ fourth year of a four years multidisciplinary UG degree programme as approved by Professional Standard Setting Bodies (PSSB/Govt. of Maharashtra/ statutory council of affiliating University plus any consequential vacancies caused by exits to an ongoing programme (four-year Degree Programme and Integrated Master's or second year Master's). Lateral entry or Re-entry is open to those students if he/she has either –

(a) successfully completed the first year/second year/third year of the particular four years multidisciplinary degree programme in any ABC registered HEI with valid credits in ABC and re-entering into the second year/third year/fourth year, respectively of the same four years degree programme of any ABC registered HEI, within stipulated/ permissible period of years as decided by Statutory Councils of that HEI

OR

(b) Already successfully completed a multidisciplinary four-year first-degree programme and is desirous of and academically capable of pursuing another multidisciplinary four years first-degree programme in an allied subject.

(ii) A student will be allowed to enter/re-enter only at the odd semester. Re-entry at various levels for lateral entrants in academic programmes should be based on the earned and valid credits as deposited and accumulated in Academic Bank of Credits (ABC) through Registered Higher Education Institutions (RHEI) and proficiency test records. However, in terms of the admission eligibility requirements, the student shall belong to the same faculty/ discipline in terms of Major Subject i.e., the Major subject of his earlier Programme and the Major subject of the new Programme for which he is seeking admission must be from the same faculty/discipline. Reservation for lateral entry will be executed as per the Government of Maharashtra norms.

5. Distribution of Credits across Multidisciplinary Four Years Degree Programme:

- (i) Four-year multidisciplinary degree programme with Honours/ Specialization Degree will have Internship and Core /Major Courses with a minimum of 22 credits per sem. in the Fourth Year.
- (ii) Four-year multidisciplinary degree programme with Research will have Research Projects, Seminars, Dissertations and Internships with a minimum of 22 credits per Sem. in the Fourth Year.
- (iii) Students shall select a 'Major or Core Subject/ Discipline' and a '**Minor Subject/Discipline**' **from the lists of various Subject Combinations and Options provided the Colleges.** In general, for the four years multidisciplinary bachelor's degree programme, the distribution of credits will be as follows:
 - (a) Disciplinary/interdisciplinary Major/ Core Subject (minimum of 68 credits)- Mandatory and Elective Courses
 - (b) Disciplinary/interdisciplinary Minor Subject (maximum of 22 credits)
 - (c) Skill based/Vocational studies corresponding to the Major/ Core Subject (8 credits)
 - (d) Field projects/internship/apprenticeship/community engagement and service corresponding to the Major/ Core Subject (14-22 credits) with a maximum of six credits per Semester
 - (e) Generic/ Open Electives through Baskets of Elective Courses (12 credits),
 - (f) Ability Enhancement Courses including Languages, Literature and Environmental Studies (12 credits),
 - (g) In-built modules on the Indian Knowledge System (IKS) in Major/ Core Subject at Level 4.5 – 2 credits
 - (h) Value-based Education, Life Skills and Professional Ethics: Co-curricular Courses such as Sports and Culture, NSS/NCC and Fine/ Applied/Visual Arts (8 credits).

Student can earn some credits (SEC/VSC/GE/OE) in the form of online from-

- (i) The National Skills Qualifications Framework (NSQF) organizes qualifications for Vocational and Skill Courses in a series of 8 levels based on professional knowledge, professional skills, core skills and responsibilities, in the increasing order of complexity and competency.
- (ii) University Grants Commission (Credit Framework For Online Learning Courses through Study Webs of Active-Learning for Young Aspiring Minds) Regulations, 2021, **permits up to 40 per cent of the total courses being offered in a particular programme in a semester through the Online Learning Courses offered through the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) platform.**

6. Examination and Assessment Process:

- (i) The basic principle of the credit framework is that credits are a function of the successful completion of a program of study/ vocational education/ training and assessment. No credit can be earned by the student unless the student is assessed for the achievement of the desired competencies and outcome of a program.
- (ii) Exit options are provided with certification, diploma and basic Bachelor's degrees to the students at the end of the second, fourth and sixth semesters of a four years multidisciplinary degree programme. Students will receive a Bachelor's degree with Honours/ Research on successfully completing of all eight semesters of the UG Program either at a stretch or with opted exits and re-entries.
- (iii) For the smooth success of four-year multidisciplinary degree programme with multiple entry and exit systems, the examination mode will be based on the combination of innovative trends in formative (informal and formal tests administered during the learning process) and summative (evaluation of students learning at the end of an instructional unit) examination modes. This is in line with the UGC Report on 'Evaluation Reforms in Higher Educational Institutions (2019)'.
- (iv) **Evaluation of each student in each course will be done as follows**
 - a. Each theory or practical course will be of 2 credits = 50 marks
 - b. Internal evaluation 30% weightage (15 marks)
 - c. External evaluation 70% weightage (35 marks)
 - d. Students should secure 40% marks in each type of evaluation for successful completion of a course (student should secure at least 6 marks in internal and 14 marks in external evaluation).

(v) Evaluation Pattern.

a. Internal evaluation - Two written test, each of 20 marks will be conducted i. e. two tests on two modules. 1st assignment after completing 6 weeks of teaching and 2nd on completion of 13th week of teaching. 5 marks out of 15 will be assigned from these written tests. Remaining 10 marks will be assigned from other types of evaluation such as seminars, orals, poster presentation, open book challenging tests, surprise test, objective test etc. Examination (Internal and external) will conduct so that CO, PO, PSO can be evaluated.

b. External Evaluation - External evaluation will be done at the end of each semester.

- For theory, 35 marks written examination will be conducted and time of examination will be 2-hours.
- For practical, 35 marks practical examination will be conducted and time of examination will be 4-hours.
- For project / field project, 35 marks evaluation will done on the basis of viva-voce and examination of thesis by the examiners.
- For OJT 35 marks evaluation will be done on the basis of report of industrial mentor / supervisor / industry and viva-voce. However, student has to produce and submit OJT certificate from competent authority of industry.

7. Attendance: The student must have at least 70% attendance, to appear any type of examination.

8. Declaration of Results:

- Declaration of result is based on the Semester Grade Point Average (SGPA) earned towards the end of each semester or the Cumulative Grade Point Average (CGPA) earned at the completion of all eight semesters of the programme and the corresponding overall alpha-sign or letter grades as given in Table 2. If some candidates exit at the completion of the first, second or third year of the four years Undergraduate Programmes, with Certificate, Diploma or Basic Degree, respectively, then the results of successful candidates at the end of the second, fourth or sixth semesters shall also be classified on the basis of the CGPA obtained in the two, four, six or eight semesters, respectively. Successful candidates at the end of the tenth semester of the integrated Master's Degree Programmes shall also be classified on the basis of CGPA obtained in the ten semesters of the Programmes. Likewise, the successful candidates of one year or two semesters Master's Degree Programme are also classified on the basis of the CGPA of two semesters of the Master's Degree Programme.

Table-2: Grades on degree certificate/mark sheet will be assigned to the students as per the following table

Semester GPA/ Program CGPA Semester/Program	% of Marks	Alpha-Sign / Letter Grade Result
9.00-10.00	90-100	O (outstanding)
8.00 - <9.00	80.00 – <90.00	A+ (Excellent)
7.00 - <8.00	70.00-<80.00	A (Very Good)
6.00 - <7.00	60.00-<70.00	B+ (Good)
5.50 - <6.00	55.00-<60.00	B (Above Average)
5.00 - <5.50	50.00-<55.00	C (Average)
4.00 - <5.00	40.00-<50.00	P (Pass)
Below 4.00	< 40	F (Fail)
Ab	-----	Absent

- A student obtaining Grade F shall be considered failed and will be required to reappear in the examination. For non-credit courses 'Satisfactory' or "Unsatisfactory" shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

9. Award of Major and Minor Degree:

- A student pursuing four-year multidisciplinary UG programme will be awarded an appropriate Honours/ Research degree in Major/ Core Subject on completion of VIII Semester with the minimum of 176 credits if he secures in that Subject at least 50% of the total credits for that programme. He shall thus study the specific number of Mandatory Core Courses, Core

- Electives, Vocational and Skill Courses and Field projects/ Internships connected to Core Subjects in eight semesters so as to cover at least 50% of the total credits.
- (ii) In case of Research Degree, a student shall pursue research project and write dissertation in that Major in the VII and VIII semesters.

On the basis of above rules and regulations under NEP-2020 following course frame work is adopted by the Prof. Ramkrishna More Arts, Commerce and Science College, Akurdi, Pune-411044 for the completing of four years honours degree in Major and Minor subjects.

10. Distribution of Credits across Four Years Degree Programmes:

In general, for the four years' bachelor's degree programme, the distribution of credits will be as follows:

(a) Major (Core) Subject comprising Mandatory and Elective Courses:

- i. Minimum 50% of total credits corresponding to Three/Four - year UG Degree- Mandatory Courses offered in all Four years;
- ii. 2 credit courses on Major Specific IKS shall be included under Major;
- iii. Elective courses of Major will be offered in the third and/or final year.
- iv. Vocational Skill Courses, Internship/ Apprenticeship, Field Projects, Research Projects connected to Major first to fourth year.

(b) Minor Subject: 18-20 Credits

- i. The Minor subjects may be from the different disciplines of the same faculty of DSC Major (Core) or they can be from different faculty altogether.
- ii. The credits of Minor subjects shall be completed in the first three years of UG Programme.

(c) Generic/ Open Elective Courses (OE): 10-12 credits

- i. It is to be offered in I and/or II year
- ii. Faculty-wise baskets of OE shall be prepared by University/ Autonomous Colleges.
- iii. OE is to be chosen compulsorily from faculty other than that of the Major.

(d) Vocational and Skill Enhancement Courses (VSEC): 14-16 credits

Vocational Skill Courses (VSC): 8-10 credits, including Hands on Training corresponding to the Major and/or Minor Subject:

- i. To be offered in first to three years;
- ii. Wherever applicable vocational courses will include skills based on advanced laboratory Practicals of Major

Skill Enhancement Courses (SEC): 06 credits

- i. To be offered in I and II year;
- ii. To be selected from the basket of Skill Courses approved by University/ Autonomous Colleges

(e) Ability Enhancement Courses (AEC), Indian Knowledge System (IKS) and Value Education Courses (VEC): 14 Credits

• AEC: 08 credits

- i. To be offered in I and II year
 - ii. English: 04 Credits
 - iii. Modern Indian Language: 04 credits
 - iv. To be offered from the Basket approved by the College;
- The focus for both languages should be on linguistic and communication skills.

• IKS: 2 Credits

- i. To be offered in I Year
- ii. Courses on IKS to be selected from the basket of IKS courses approved by the Colleges

• VEC: 04 Credits

- i. To be offered in I year
- ii. Value Education Courses (VEC) Environmental Science Education (Compulsory), Understanding India, and Digital and Technological Solutions.

(f) Field Projects/ Internship/ Apprenticeship/ Community Engagement and Service corresponding to the Major (Core) Subject, Co-curricular Courses (CC) and Research Project

- **Internship/Apprenticeship corresponding to the Major (Core) Subject: 8 Credits**
- **Field Projects/Community Engagement and Service corresponding to the Major (Core) Subject: minimum 4-6 credits**

To be offered in II, and III years of UG Degree Programmes.

- **Co-curricular Courses (CC) such as Health and Wellness, Yoga education sports, and fitness, Cultural Activities, NSS/NCC and Fine/ Applied/ Visual/ Performing Arts: 8 credits.** To be offered in I and/or II year
- **Research Projects: 12 credits**

To be offered in the final year for 4-year Honours with Research UG Degree

The UGC Regulations, 2021 permit up to 40% of the total courses being offered in a particular programme in a semester through the Online Learning Courses offered through the SWAYAM platform and/or other State Level Common Platforms which can be developed in due course with the participation of different Universities/ HEIs.

Abbreviations: Generic/ Open Electives: **GE/OE**; Vocational Skill and Skill Enhancement Courses: **VSEC**; Vocational Skill Courses: **VSC**; Skill Enhancement Courses: **SEC**; Ability Enhancement Courses: **AEC**; Indian Knowledge System: **IKS**; Value Education Courses: **VEC**; **OJT**: On Job Training; Internship/ Apprenticeship; Field projects: **FP**; Community engagement and service: **CEP**; Co-curricular Courses: **CC**; Research Methodology-**RM**; Research Project: **RP** Note: The Credit Distribution Table given above is illustrative only. The Universities/ Autonomous Colleges may suitably modify within the broader framework of credit distribution across six verticals.

11. Definitions:

i. One semester = 15 weeks

ii. 1-credit theory = 15 hours i.e. for 1 credit, 1 hour per week teaching is to be performed.

15 hours of 1-credit are splinted as 12 hours actual teaching + 3 hours Tutorial (Numerical problem solving sessions, revision on difficult topics, dialog on student's difficulties, and internal evaluation)

iii. 1-credit practical = 30 hours. Thus, 1 credit practical = 2 contact hours in laboratory per week. 30 hours splinted as 24 hours actual table work and 6 hours for journal competition, oral on each practical and other internal evaluation.

iv. Each theory course of any type (major, minor, VSC, VEC, OE/GE, VEC, SEC, CC, etc.) **is of 2 credits.**

v. Theory per semester: Each theory course is of 2 credits. Thus, for each theory course contact hours = 24 teaching + 6 tutorials

vi. Each practical course is of 2 credits = 60 hours per semester

- a. Minimum 12 laboratory sessions will be conducted in one semester.
- b. Each laboratory sessions will be of 4 hour.

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Graduate and Honors Degree Course Framework under Autonomy as per NEP-2020; 2024 Pattern With Major Geography

Sem.	Subject-1 (Major)	Major Elective Courses	Subject-2 (Minor)	VSC	IKS	FP/OJT/CEP	GE/OE	SEC	AEC	VEC	CC	Total Credits
First Year Certificate Course												
I	GGMAT-111 GGMAP-112	0	1Theory + 1 Practical Other than Geography	0	GEIKT- 111	0	GGGET-111	GGSEP-111	1 theory English AEENT- 111	Environment Awareness VEAET-111	0	22
II	GGMAT-121 GGMAP-122	0	1Theory + 1 Practical Other than Geography	0	0	0	GGGEP-121	GGSEP-121	1 theory English AEENT- 121	Democracy and Indian Constitution VEPOT-121	Physical Education CCPEP-121	22
Second Year Graduate Diploma												
	Major		Minor	VSC	IKS	FP/OJT/CEP	GE/OE	SEC	AEC	VEC	CC	Total Credits
III	GGMAT-231 GGMAP-232	0	1 Theory + 1 Practical Other than Geography	GGVST- 231	GGIKT- 231	Field Project (2 Credit) GGFPP-231	1 theory / 1 Practical From Basket	0	Marathi (MAAET- 231) /Hindi (HIAET- 231)	0	CCHRT-231 Human Rights	22
IV	GGMAT-241 GGMAP-242	0	1 Theory + 1 Practical Other than Geography	GGVSP- 241	0	Community Engagement and Service (2 Credit) CHCEP-241	1 theory / 1 Practical From Basket	CHSEP-241	Marathi (MAAET- 241) /Hindi (HIAET- 241)	0	CCCST-241 Cyber Security	22
Third Year Graduate Degree												
V	GGMAT-351 GGMAT-352 GGMAP-254 GGMAP-255	GGMET-511 GGMEP-512 Or GGMET-351A GGMEP-352B	0	GGVST- 351	0	Research project (2 Credit) GGRPP-351	0	0	0	0	0	22
VI	GGMAT -361 GGMAT -362 GGMAP -364 GGMAP -365	GGMET-361 GGMEP-362 Or GGMET-361A GGMEP-362A	0	GGVSP- 351	0	OJT (4 Credit) GGOJT-361	0	0	0	0	0	22

Courses for F. Y. B. A. [2024 Pattern]

Paper Code	Title	Credits
Subject-1 Major Semester-I		
GGMAT-111	Physical Geography	4
GGMAP-112	Practicals in Cartography	2
Subject-1 Major Semester-II		
GGMAT -121	Human Geography	4
GGMAP -122	Toposheets and Weather Charts Interpretation	2
Subject-2 (Minor) Semester-I		
1Theory + 1 Practical Other than Geography		6
Subject-2 (Minor) Semester-II		
1Theory + 1 Practical Other than Geography		6
Skill Enhancement Course (SEC), SEM-I		
GGSEP-111	Practicals in Tourism	2
Skill Enhancement Course (SEC), SEM-II		
GGSEP-121	Practicals in Tourism Management	2
Student can select any SEC course from the Arts basket		
GE/OE Course for SEM-I (For Science and Commerce Students)		
GGGET-111	Introduction to GIS	2
GE/OE Course for SEM-II (For Science and Commerce Students)		
GGGEP-121	Practical in Remote Sensing	2
Ability Enhancement Course SEM-I		
ANAET-111	Basics of soft skill -I	2
Ability Enhancement Course SEM-II		
ANAET-121	Basics of soft skill - II	2
Value Education Course-I		
VEAET-111	Environmental Science	2
Value Education Course-II		
VEPOT-121	Democracy and Indian Constitution	2
IKS		
GIKST-111	A Basic Course on Indian Knowledge System	2
Co-Curricular Courses-II		
CCPEP-121	Physical Education	2
Minor SEM-I		
1Theory + 1 Practical Other than Geography		
Minor SEM-I		
1Theory + 1 Practical Other than Geography		
GEOE Sem.-I		
From Basket of Science and Commerce		
GEOE Sem.-II		
From Basket of Science and Commerce		

Courses for S. Y. B. A. Geography [2024 Pattern]

Paper Code	Title	Credits
Major Semester-III		
GGMAT-231	Principle of Geomorphology	4
GGMAT-232	Basics Statistical Techniques	2
Major Semester-IV		
GGMAT-241	Principle of Climatology	4
GEMAP-242	Surveying Techniques	2
Minor SEM-III		
GGMIP-231	Tourism Geography	4
Minor SEM-IV		
GGMIT-241	Disaster Management and Mitigation	4
Vocational Skill Course (VSC), SEM-III		
GGVST -231	Applications of GIS	2
Vocational Skill Course (VSC), SEM-IV		
GGVSP-241	Geographical Information System	2
Skill Enhancement Course (SEC), SEM-IV		
GGSEP-241	Practicals in Agrotourism	2
Student can select any SEC course from science basket		
Field Project in Geography (FP), SEM-III		
GGFPP-231	Field Project in Geography	2
Community Engagement Project (CEP), SEM-IV		
GGCEP-241	Community Engagement Project in Geography	2
GE/OE Course for SEM-III (For Science and Commerce Students)		
GGGET-231	Natural Disaster Management	2
GE/OE Course for SEM-IV (For Science and Commerce Students)		
GGGEP-241	Practicals in Natural Disaster Management	2
Ability Enhancement Courses Sem.-III		
MAAET-231/ HIAET-231	Marathi/Hindi	2
Ability Enhancement Courses Sem.-IV		
MAAET-241/ HIAET-241	Marathi/Hindi	2
Geography IKS		
GGIKT- 231	Geographical Knowledge in Ancient India	2
Co-Curricular Courses-III		
CCHRT-231	Human Rights: An Introduction	2
Co-Curricular Courses-IV		
CCCST-241	Cyber Security	2
Minor SEM-III		
From the Basket of Minor		
Minor SEM-IV		
From the Basket of Minor		
GEOE Sem.-III		
From Basket of Science and Commerce		
GEOE Sem.-IV		
From Basket of Science and Commerce		

Objectives of the B.A. Geography Programme

1. To familiarize students with fundamentals concepts and principles of Geography
2. To guide students in an identification and analysis of various facets of geographical features and processes.
3. To enhance students ability in spatial analysis, relationship between people, places and environment.
4. To develop critical thinking and problem-solving skills, analytical and scientific reasoning, reflective thinking, moral & reflective awareness amongst the students.
5. To facilitate the students to learn skills of cartographic techniques, data analysis and interpretation, carrying out field work, use of Geoinformatics techniques, research projects, applications and applied studies.

Programme Specific Outcomes: B.A. Geography

- PSO 1 Demonstrate a comprehensive understanding of key geographical concepts and theories by integrating practical applications through a regional approach that highlights global, continental, national, and state contexts.
- PSO 2 Investigate the ethical considerations inherent in geographic research and recognize the environmental values vital for developing sustainable solutions.
- PSO 3 Analyze and interpret spatial relationships among places, people, and their environments to gain deeper insights into geographic dynamics.
- PSO 4 Apply geographic knowledge and skills effectively to address real-world problems and challenges in various contexts.
- PSO 5 Employ GIS, remote sensing, and cartographic techniques to accurately analyze and interpret spatial data.
- PSO 6 Evaluate geographic issues from local to global perspectives, with a strong emphasis on sustainability and responsible stewardship of resources.
- PSO 7 Exhibit expertise in designing, conducting, and presenting fieldwork and survey projects, as well as research initiatives that contribute to geographic understanding.
- PSO 8 Enhance teamwork and leadership abilities through active participation in seminars, outdoor practicals, fieldwork, and study tours.
- PSO 9 Assess the effects of human activities on the environment and propose innovative, sustainable solutions to mitigate these impacts.
- PSO 10 Develop essential professional skills for careers in various fields, including environmental anagement, rural development, urban planning, geospatial technologies, cartography, field survey techniques, disaster management, and tourism.

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Department of Geography
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Faculty Science and Technology
Graduate and Honors Degree Course Framework under Autonomy as per NEP-2020
With effects from 2023-24

Semester- I Major Course

NEP-2020 First Year UG Physical Geography

Course Code - GGMAT-111

Course Type-Theory

No. of Credits: 04

No. of Periods: 60

Course Outcomes:

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

1. Students will be able to understand the fundamental concepts origin, shape and size of the Earth.
2. Explain various rock- types.
3. Describe agents of the denudation.
4. Understands basic terminology used to describe physical processes and landscape forms.
5. Know the different types of landforms and landscape environments.
6. Explain the movements of the interior of the earth.

Module	Topic No.	Topic	Subtopics	No. of Periods
Module-1	1	Introduction to Physical Geography	i. Definitions of Physical Geography ii. Nature and scope of Physical Geography iii. Branches of Physical Geography	10
Module-2	2	Origin, Shape, and Size of the Earth,	i. Movement of the Earth- Rotation and Revolution, Effects of the movement of Earth. ii. Coordinates, Latitude, Longitude and Time.	10
	3	Interior of the earth	i. Structure of the Earth ii. Wegner's Continental Drift Theory	08
Module-3	4	Earth Movements	iii. Earth Movements: Isostasy, Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes.	08
	5	Geomorphic Processes	i. Weathering, Mass Wasting	08
Module-4	6	Introduction to Atmosphere	i. Structure of the atmosphere ii. Heat Balance	08
	7	Introduction to Pressure and Wind	i. Pressure belts and wind system ii. Forms and types of Precipitation	08

Reference Books:

1. B.S. Negi (1993) Physical Geography. S.J. Publication, Meerut.
2. D.S. Lal (1998) Climatology. Chaitnya publishing house, Allahabad.
3. K. Siddhartha (2001) Atmosphere, Weather and Climate. Kisalaya publication, New Delhi.
4. R.N. Tikka (2002) Physical Geography. Kedarnath Ramnath & co, Meerut.
5. Willian D. Thornbury (1997) Principle of Geomorphology. New Age International (Pvt Ltd.) New Delhi.

NEP-2020 First Year UG Practical in Cartography (Practical)**Course Code - GGMAP-112****Course Type-Practical****No. of Credits: 02****No. of Practicals: 15****Course Outcome:**

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

1. Understand the basic components of map and its attributes.
2. Read and prepare maps.
3. Comprehend locational and spatial aspects of the earth surface.
4. Use and importance of maps for regional development and decision making.
5. Acquire skills in map-making and spatial representation of geographical data.
6. Utilize the principles of projection and scales for map-making.

Module	Topic	Subtopics	Practicals
Module-1	Cartography	Nature and Scope	2
	Scales	Concept and application; ; Graphical Construction of Plain, Comparative and Diagonal Scales.	3
	Map Projections	Classification, Properties and Uses; Merits and Demerits of Polar Zenithal, Stereographic, Bonne's and Mercator's Projections.	3
Module-2	Topographical Map	Interpretation of a Mountain area with the help of Cross and Longitudinal Profiles. Slope Analysis – Wentworth's method	4
	Interpretation of Weather Maps	Interpretation of Weather Maps (at least one of summer, winter and monsoon seasons)	3

Practical Record:

A Project File in pencil comprising one exercise each, on scale, map projection, profile, interpretation of topographic sheet and weather maps.

References:

1. Anson, R., and Ormelling F. J., (1994): International Cartographic Association: Basic Cartographic, Vol. Pregmen Press.
2. Singh, Gopal., (1998): Map Work and Practical Geography (4th Edition), Vikas Publishing House, Ahmedabad.
3. Gupta, K.K. and Tyagi V.C., (1992): Working with Map, Survey of India, DST, New Delhi.
4. Kraak, M.J., (2010): Cartography: Visualization of Geospatial Data (3rd edition), Pearson Education Ltd., London.
5. Misra, R.P., (2014): Fundamentals of Cartography (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.
6. Monkhouse, F. J. and Wilkinson, H. R., (1973): Maps and Diagrams, Methuen, London.
7. Rhind, D. W. and Taylor D. R. F., (eds.) (1989): Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
8. Robinson, A. H., (2009): Elements of Cartography (6th Edition), John Wiley and Sons, New York.
9. Sarkar, A., (2015): Practical geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi
10. Sharma, J. P., (2010): PrayogicBhugol(Hindi), Rastogi Publishers, Meerut.
11. Singh, R.L. and Singh R.P.B., (1999): Elements of Practical Geography, Kalyani Publishers, New Delhi.
12. Singh, R.L. & Dutta, P.K., (2012): PrayogatmakBhugol(Hindi), Central Book Depot, Allahabad
13. Singh, R.L., & Singh, Rana. P.B., (1991): PrayogtmakBhugolkeMoolTatva(Hindi), Kalyani Publishers, New Delhi
14. Steers, J.A. (1970): An Introduction to the Study of Map Projections, University of London Press, London.
15. Khan, Zulfequar Ahmad., (1998): Text book of Practical Geography, Concept Publishing Company, New Delhi.

Semester- I Generic/Open Elective Course

NEP-2020 First Year UG Fundamentals of Geographical Information System (Theory)

Course Code - GGGET-111

Course Type-Theory

No. of Credits: 02

No. of Periods: 30

Course Outcome:

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

1. Understand various components and principles of GIS
2. Construct the thematic maps using different digital layers
3. Understand the Principles and Uses of Global Positioning System (GPS).
4. Describe GIS Data Structures and apply the Knowledge of GIS Data Analysis.
5. Construct the thematic maps using different digital layers
6. Apply GIS in various geographical studies

Module	Topic	Subtopics	No of Periods
Module-1	Geographical Information System (GIS)	Geographical Information System (GIS): Definition and Components.	6
	Global Positioning System (GPS)	Global Positioning System (GPS): Principles and Uses.	6
Module-2	GIS Data Structures	GIS Data Structures: Types (spatial and non-spatial), Raster and Vector Data Structure.	6
	GIS Data Analysis	GIS Data Analysis: Input; Geo-Referencing	6
	Application of GIS	Application of GIS: Land Use Mapping, Forests Monitoring and Natural disasters.	6

References:

1. Bhatta, B., (2010): Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg, 41
2. Burrough, P.A., and McDonnell, R.A. (2000): Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press
3. Chauniyal, D.D. (2010): Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad
4. Gomarasca, M. A. (2009) Basics of Geomatics, Springer Science, New York
5. Heywoods, I., Cornelius, S and Carver, S., (2006): An Introduction to Geographical
6. Information system. Prentice Hall.
7. Jha, M.M. and Singh, R.B., (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
8. Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet (2019): Spatial Information Technology for Sustainable Development Goals, Springer.
9. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
10. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
11. Singh, R.B. and Murai, S. (1998) Space Informatics for Sustainable Development, Oxford and IBH, New Delhi.

Semester- I Skill Enhancement Course

NEP-2020 First Year UG Practicals in Tourism Management

Course Code - GGSEP-111

Course Type-Practical

No. of Credits: 02

No. of Practical: 15

Course outcomes:

1. Analyze, understand, and innovate the deliverables of tourism sector
2. Understand the basic concept in tourism.
3. Develop and evaluate tourism policy and planning initiatives.
4. Familiarize students with tourist agencies, roles, and responsibilities.
5. Demonstrate ability to make tour packages.
6. Ability to know basic of research project in tourism practice.

Course content:

Module	Topic	Subtopics	Practicals
Module-1	Basic concept in tourism	difference between travel and tourism, types of tourism, Documentation for tourism-passport, VISA	4
	Concept of Tourism Management and Planning	Tourist Destination – Concept and Evolution Data Collection and analysis in tourism research	4
Module-2	Tour Management	Tour planning and coordination in tourism, Tour packages in the tourism industry Types of Tourist agencies	4
	Tourism Planning	Review and feedback in tour management, Different types of feedback forms, Online guest reviews and feedback form	3

References-

1. Claire Boobbyer "Tourism Planning: Basics, Concepts, Cases" by CABI publication.
2. Clare Inkson and Medlik S. "Tourism Planning: Policies, Processes, and Relationships" by (Cengage Learning EMEA)
3. Gurdeep Singh and S. P. Gupta "Tourism Management and Planning" by (Ane Books Pvt. Ltd.)
4. Guido Candela and Paolo Figini "Tourist Destination Management: Issues, Analysis, and Policies" by Routledge publication.
5. ErcanSirakaya-Turk, MuzafferUysal, and William E. Hammitt "Research Methods for Leisure, Recreation, and Tourism" by (CABI)
6. Smith, L. J. S. (2010). Practical Tourism Research, CABI, Wallingford

Semester- I IKS Course



Prof. Ramkrishna More Arts, Commerce and Science College

(Autonomous College)

Akurdi Pradhikaran, Pune 411044.

www.pdearmacs.edu.in

Course Code: GIKST-111

Course Name: A Basic Course on Indian Knowledge System

Credits: 02

Course Duration: 01 Semester

Course Aim and Objectives:

Bhārata boasts a rich and versatile knowledge system and cultural heritage that has evolved over millennia. Originating during the Vedic period and the Saraswatī-Sindhu Civilization, and continuing through the Middle Ages to modern times, the Bhāratīya knowledge system has had a profound and enduring influence. The course “A Basic Course on Indian Knowledge System “ introduced in NEP 2020 This course focuses on the historical development of ideas in ancient society, exploring their implications for understanding the material world, as well as religious, social, and cultural beliefs. Upon closer examination, it becomes evident that religion, culture, and science are epistemologically interconnected within the Bhāratīya knowledge system. Bhārata has made invaluable contributions to society and the world across various spheres, including aeronautics, astronomy, mathematics, life science, medical science, architecture, polity, trade, art, music, dance, literature, and drama. By studying these interconnected areas, one can gain a comprehensive understanding of the depth and breadth of the Bhāratīya knowledge system and its cultural heritage.

The Indian Knowledge System course is not just an academic endeavor but a vital component of holistic education. It nurtures a deeper understanding of India's intellectual traditions and their relevance in contemporary times, fostering a balanced and enriched perspective on life and knowledge.

Learning Outcomes

- Understanding the foundational concepts and principles of IKS
- Appreciating the contributions of ancient Indian scholars and scientists
- Integrating IKS perspectives into modern academic and practical contexts
- Promoting cultural awareness and appreciation of India's intellectual heritage

Course Contents

Credits: 2 (30 Hours)

UNIT -I: Bharatiya Civilization and Knowledge System (6 hours)

The primary sources of ancient Indian philosophy: Vedas and Upanishads, Overview of the six schools of Indian philosophy. Ancient Indian civilization: the discovery of the Saraswatī River and the Saraswatī-Sindhu civilization. The ancient Indian education system: Gurukul system, Takṣaśilā University, Nālandā University, and their notable alumni. History of knowledge export from Bhārata.

[प्राचीन भारतीय तत्त्वज्ञानाचे प्राथमिक स्रोत: वेद आणि उपनिषद, भारतीय तत्त्वज्ञानाच्या सहा शाळांचे सिंहावलोकन. प्राचीन भारतीय संस्कृती: सरस्वती नदीचा शोध आणि सरस्वती-सिंधू संस्कृती. प्राचीन भारतीय शिक्षण पद्धती: गुरुकुल पद्धती, तक्षशिला विद्यापीठ, नालंदा विद्यापीठ आणि त्यांच्या प्रसिद्ध माजी विद्यार्थी. भारतातून ज्ञान निर्यातीचा इतिहास.]

UNIT-II: Arts, Literature, and Scholars in Ancient India (6 hours)

The history of ancient Indian art, music, and dance. Naṭarāja a unique symbol of Indian art. In the field of literature, the works of Agastya, Ghoṣā, Vālmīki, Patañjali, Gārgī, Vedwalmiki, Lopāmudrā, Maitreyī, and Bodhāyana. In the fields of science and medicine, the contributions of Caraka, Suśruta, Jīvaka, Nāgārjuna, Kaṇāda, Patañjali, Kauṭilya, Pāṇini, Thiruvalluvar, Ādi Śaṅkarācārya, Bhāskarācārya, and Mādhavācārya

[प्राचीन भारतीय कला, संगीत, आणि नृत्याचा इतिहास. नटराज हा भारतीय कलेचा एक अद्वितीय प्रतीक. साहित्य क्षेत्रात अगस्त्य, घोषा, वाल्मीकी, पतंजली, गार्गी, वेदवाल्मीकी, लोपा मुद्रा, मैत्रेयी आणि बोधायन यांचे कार्य. विज्ञान आणि वैद्यक क्षेत्रात चरक, सुश्रुत, जीवक, नागार्जुन, कणाद, पतंजली, कौटिल्य, पाणिनी, तिरुवल्लुवर, आदि शंकराचार्य, भास्कराचार्य आणि माधवाचार्य यांचे योगदान..]

UNIT-III: Ancient Science, Astronomy, and Mathematics (6 hours) ,

Āryabhaṭa and Varāhamihira's contributions, concepts like matter, life, and gravity, technological advancements like Sage Agastya's battery model, the velocity of light, and Vimāna aeronautics. Vedic cosmology, Bhāratiya Kāla-gaṇanā, Kerala School for Mathematics and Astronomy, history and culture of astronomy, celestial bodies such as the sun, earth, moon, eclipses, earth's spherical nature and rotation, archaeoastronomy, mathematical concepts zero, pi, number system, Pythagoras theorem, and Vedic mathematics.

[आर्यभट्ट आणि वराहमिहिरांचे योगदान, पदार्थ, जीवन, आणि गुरुत्वाकर्षण या संकल्पनांचे महत्त्व, संगणकीय प्रगती, जसे की सेज अगस्त्यांच्या बॅटरी मॉडेल, प्रकाशाची वेगता, आणि विमान वायुयान, वैदिक ब्रह्मांडशास्त्र, भारतीय काल-गणना, केरळ संख्याशास्त्र आणि खगोलशास्त्राचा इतिहास व संस्कृती, सूर्य, पृथ्वी, चंद्र, ग्रहण, पृथ्वीच्या गोलाकार आणि घुमट, पुरातत्त्वशास्त्र, शून्य, पाई, संख्या प्रणाली, पायथागोरसचा प्रमेय, आणि वैदिक गणित.]

UNIT-IV: Ancient Engineering, Technology, and Architecture (6 hours)

Urban planning and sophisticated drainage systems : Mohenjo-daro and Harappa. Rock-cut architecture : Ajanta and Ellora caves, temple designs found in Khajuraho and Konark. Stepwells (Baolis): water management systems. metallurgical techniques for metal extraction and artifact crafting. Textile technology such as weaving and dyeing. Scientific instruments used for astronomical observations and calculations. Bhāskarācārya and his contributions to mathematics. Trade and Commerce in Ancient India.

[नगर योजना आणि प्रगत निर्जलीकरण प्रणाली: मोहनजो-दारो आणि हरप्पा. शिलाचित्र कला: अजंता आणि एलोरा लेण्यांची चालक शैली, खजुराहो आणि कोणार्कमधील मंदिर डिझाइन. पायराडी (बावली): पाण्याचे व्यवस्थापन प्रणाली. धातूची शैली: धातू निकालण्याची आणि अभिजात वास्तुकला. कापडी तंत्रज्ञान जसे की बुनणे आणि रंगणे. खगोलशास्त्रात वापरलेले वैज्ञानिक उपकरणे आणि गणना. भास्कराचार्य आणि त्यांचा गणितातील योगदान. प्राचीन भारतातील

व्यापार आणि वाणिज्य.]

UNIT-V: Life, Environment, and Health in Ancient India

(6 hours)

Ancient Indian Religions : Hinduism, Buddhism, Jainism, Sikhism : Teachings and Philosophies, Ancient agricultural practices, crop cultivation techniques, and innovations. Comprehensive healthcare systems integrating Āyurveda, yoga, and other traditional practices. Surgical techniques and procedures practiced in ancient India
[प्राचीन भारतीय धर्म: हिंदूधर्म, बौद्धधर्म, जैनधर्म, सिखधर्म: शिक्षण आणि दर्शन, प्राचीन कृषि प्रथा, फसल उत्पादन तंत्रज्ञान आणि नवीन उपक्रम. आयुर्वेद, योग आणि इतर पारंपरिक व्यवस्थांच्या संयुक्त स्वास्थ्यव्यवस्था. प्राचीन भारतातील क्षेत्रजन्य तंत्रज्ञान आणि प्रक्रिया.]

Text books:

1. History of Science in India Volume-1, Part-I, Part-II, Volume VIII, by Sibaji Raha, et al. National Academy of Sciences, India and The Ramkrishan Mission Institute of Culture, Kolkata(2014).
2. Textbook on The Knowledge System of Bhārata by Bhag Chand Chauhan,

Reference Books:

1. A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century" by Upinder Singh:
2. Pride of India- A Glimpse of India's Scientific Heritage edited by Pradeep Kohle et al. Samskrit Bharati (2006).
3. Vedic Physics by Keshav Dev Verma, Motilal Banarsidass Publishers (2012).
4. "Indian Art and Culture" by Nitin Singhanian, McGraw Hill

Semester- I Ability Enhancement Course

F. Y. B.A./F.Y.B.COM/ALL SY Semester II		
Title of the Course	Basics of Soft Skills II	Number of Credits : 02
Course Code	ENAET-121 (code for FY) ENAET-241(code for SY)	
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Distinguish between critical and creative thinking.	
CO2	Explore strategies for developing creative thinking for solving problems..	
CO3	Analyse the concept of self-esteem and apply it to real life.	
CO4	Examine the power of positive thinking.	
CO5	Develop interpersonal negotiation skills for resolving interpersonal conflicts.	
CO6	Identify different types of leadership and choose strategies for developing leadership.	
CO7	Apply soft skills to real life.	
Unit No.	Title of Unit and Contents	No. of Lectures
I	Creative Thinking and Problem Solving: 1. What is creative thinking? 2. Difference between critical and creative thinking 3. Importance of creative thinking in problem solving 4. Strategies for developing creative thinking for solving problems	10
II	Team Building: 1. What is a team? 2. Strategies for resolving the interpersonal conflicts 3. Developing the interpersonal negotiation skills 4. Importance and significance of effective team building	10
III	Leadership: 1. What are leadership skills? 2. Types of leadership 3. Developing leadership skills 4. Strategies for developing leadership	10

Semester- I Ability Enhancement Course

NEP-2020 First Year UG Environment Science (Value Education Course)

Course Code – VEAET-111

Course Type-Theory

No. of Credits: 02

No. of Periods: 30

MODULE-1

[12 L + 3T]

Unit 1: Introduction to environmental studies

[02 L]

- Multidisciplinary nature of Environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Unit 2: Ecosystems

[06 L]

- Concept and structure.
- Ecosystem functions.
- Types of Ecosystem.

Unit 3: Biodiversity and Conservation

[07 L]

- India as a mega-Biodiversity nation; Endangered and endemic species of India
- Threats to Biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions;
- Conservation of Biodiversity: In-situ and Ex-situ conservation of Biodiversity.

MODULE-2

[12 L + 3T]

Unit 4: Environmental Pollution

[07 L]

- Environmental pollution: types, causes, effects and controls; Air, Water, and Soil pollution.
- Solid and liquid waste management: Control measures of urban and industrial waste.

Unit 5: Environmental Programs and Policies

[08 L]

- Developed Countries, Developing Countries.
- New Environmental policy of India; Government initiatives.

References:

1. Singh R. B. (1993) Environmental Geography. Delhi, India: Heritage Publishers.
2. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
3. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.
4. Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.
5. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
6. Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
7. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
8. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi

Semester II**NEP-2020 First Year UG Human Geography****Course Code - GGMAT- 121****Course Type-Theory****No. of Credits: 04****No. of Periods: 60****Course Outcomes**

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

1. Get comprehensive knowledge about basic concepts in human geography
2. Understand the development of human geography.
3. Understand the concept of Determinism, Possibilism, Stop and Go Determinism.
4. Understand the world human race.
5. Increasing the awareness among the student about tribes in India.
6. Describe the tribes and their distribution of in India.

Module	Topic	Subtopics	No. of Periods
Module-1	Introduction to Human Geography	i. Definitions of Human Geography ii. Nature and scope of Human Geography iii. Branches of Human Geography	08
	Development of Human Geography	i. Development of Human Geography. ii. Concepts of Determinism, Possibilism, Stop and Go Determinism.	07
Module-2	Human Races	i. Meaning and Definition of Human Race ii. Human Race in the World.	07
	Study of Indian Tribes	i. Regional Distribution of Tribes in India. ii. Tribes in Maharashtra	08
Module-3	Human Culture	i. World's Major Religions & their distribution.	08
	Population	i. World distribution of population. ii. Composition of Indian population (Sex Ratio and literacy)	07
Module-4	Settlements	i. Types and patterns of rural Settlements. ii. Types and patterns of Urban Settlements.	08
	Agriculture	i. Types of Agriculture iii. Problems of Indian agriculture	07

Reference Books:

1. Bergwan, Edward E: Human Geography; Culture, Connections and Landscape, Prentice Hall, New Jersey.1995.
2. Perpillon A.V. : Human Geography, Longman, London- 1986.
3. Fellman, J.L.: Human Geography—Landscapes of Human Activities. Brown and Benchman Pub., U.S.A., 1997.
4. Robinson H. : Human Geography, 1976.
5. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
6. Perillouav : Human Geography, 1986.
7. Sawadi A. B., मानवी भूगोल: Nirali Publication, Pune.
8. Singh, K.N.: People of India, An introduction Seagull Books, 1992.
9. Michael, Can: New Patterns: Process and Change in Human Geography Nelson,1997.

NEP-2020 First Year UG Toposheets and Weather Charts Interpretation

Course Code - GGMAT- 123

Course Type-Practical

No. of Credits: 02

No. of Periods: 15

Course Outcome:

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

1. Understand the basic concept of Interpretation of Toposheets and IMD Weather Charts.
2. Describe SOI toposheets.
3. Explain the representation of relief features with help of contours.
4. Understand the knowledge of Toposheets Reading/Interpretation.
5. Explain weather instruments and their applications in Geographical phenomena.
6. Describe IMD weather maps.

Module	Topic	Subtopics	Practicals
Module-1	Toposheets	a. Introduction to Survey of India (SOI) toposheets, Marginal Information, Grid reference, Conventional signs and symbols b. Types of toposheets/Indexing of toposheets	2
	Methods of Relief Representation	a. Qualitative: - Hachures, Hill shading, Layer Tint b. Quantitative: - Contours, Form lines, Bench Marks, c. Spot Heights, Triangulation Mark, Relative Height (r)	2
	Representation of Relief features by Contours	a. Concave Slope, Convex Slope, Steep Slope, Gentle Slope, Terraced / Uniform b. Conical Hill, Spur, Plateau, Ridge, Saddle, Pass, Cliff & Waterfall	2
Module-2	Profile	a. Drawing and Description of Cross Profile of any Region from toposheets b. Drawing and Description of Longitudinal Profile of a Road or a River	2
	Toposheets Reading, Interpretation	Reading of at least three SOI toposheets	3
	Weather Maps & Reading	a. Introduction to Weather Maps b. Symbols in Daily Weather Report used by India Meteorological Department (IMD) c. Isobaric pattern Cyclones, Anti cyclones, V shaped Cyclones, V Shaped Anti Cyclones, Col d. Reading of Weather Map	4

Reference:

1. Aher A.B., Chodhari A. P. & Bharambe S.N. Techniques of Spatial Analysis Prashant Publication Jalgaon 2015
2. David Unwin, Introductory Spatial Analysis, Methuen, London, 1981.
3. Gregory, S. Statistical Methods and the Geographer, Longman, London, 1978.
4. Hammond R and P.S. McCullagh Quantitative Techniques in Geography: An Introduction, Clarendon Press, Oxford, 1974.
5. John P.Cole and Cuchlaine A. M. King, Quantitative Geography, John Wiley, London, 1968.
6. Johnston R. J., Multivariate Statistical Analysis in Geography, Longman, London. 1973.
7. Koutsoyiannis, Theory of Econometrics, Mcmillan, London, 1973.

8. Maurice Yeats, *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York, 1974.
9. Aronoff S. *Geographic Information Systems: A Management Perspective*, DDL Publication Ottawa. 1989.
10. Burrough P.A . *Principles of Geographic information Systems for Land Resource Assessment* Oxford University Press, New York.1986.
11. Fraser Taylor D.R. *Geographic information Systems*. Pergamon Press, Oxford.1991.
12. Maquire D. J. M.F. Goodchild and D. W. Rhind (eds.). *Geographic information Systems:Principles and Application*. Taylor & Francis, Washington. 1991.
13. Mark S Monmonier . *Computer-assisted Cartography*. Prentice-Hall, Englewood Cliff, New Jersey, 1982.
14. Peuquet D.J. and D.F. Marble, *Introductory Reading in Geographic Information Systems* Taylor & Francis, Washington.1990.
15. Star J and J. Estes. *Geographic Information Systems: An Introduction*. Prentice- Hall, Englewood Cliff, New Jersey, 1994.
16. Peter HaGEOett, Andrew D. Cliff, & Allan Frey, *Location Methods Vol. I and II*, Edward Arnold, London, 1977.
17. Misra, R.P. and Ramesh, A. *Fundamentals of Cartography*, McMillan Co., New Delhi,1986.
18. Pal, S.K. *Statistics for Geoscientists — Techniques and Applications*, Concept, New Delhi,1998.
19. Robinson, A.H. et al.: *Elements of Cartography*, John Wiley & Sons, U.S.A.,1995.
20. Sarkar A.:*K Practical Geography: A Systematic Approach*, Oriental Longman, Calcutta, 1997.
21. Singh, R.L. and Dutt, P.K.: *Elements of Practical Geography*, Kalyani Publishers, New Delhi,1979
22. Choudhar A. H., Choudhari J. V. *Practical Geography*, K. S. Publication, Pune (2013).

NEP-2020 First Year UG Introduction to Remote Sensing

Course Code - GGGE-121

Course Type-Practical

No. of Credits: 02

No. of Periods: 15

Course Outcomes:

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

1. Understand the basic concept of Remote Sensing.
2. Explain Digital and manual Image Processing.
3. Develop the skill so as to use digital satellite data using software.
4. Prepare the maps based with satellite data to compare with the ground realities.
5. Classify digital data for the land use/land cover and urban studies.
6. Apply the Knowledge of Remote Sensing in Various field.

Module	Topic	Subtopics	Practicals
Module-1	Image Processing (Digital and Manual)	Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering); Classification (Supervised and Un-supervised)	4
			4
Module-2	Application of Digital Remote Sensing	Application of Digital Remote Sensing- Land Use /Land Cover	2
		Application of Digital Remote Sensing in Urban Studies.	2
		Application of Remote Sensing in weather (cyclones) studies and natural hazards (e.g. floods)	3

References:

1. Bhatta , B., (2008): Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell, J. B., (2007): Introduction to Remote Sensing, Guildford Press
3. Hord R.M.,(1989): Digital Image Processing of Remotely Sensed Data, Academic, New York.
4. Jensen, J. R., (2005): Introductory Digital Image Processing: A Remote Sensing Perspective, Pearson Prentice-Hall.
5. Jensen, J. R.,(2007): Remote Sensing of the Environment: An Earth Resource Perspective, Prentice-Hall Inc, New Jersey.
6. Joseph, G.,(2005): Fundamentals of Remote Sensing, United Press India.
7. Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet.,(2019): "Spatial Information Technology for Sustainable Development Goals", Springer.
8. Li, Z., Chen, J. and Batsavias, E., (2008): Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences, CRC Press, Taylor and Francis, London
9. Lillesand, T. M., Kiefer R. W. and Chipman, J. W., (2004): Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition).
10. Mukherjee, S. (2004): Textbook of Environmental Remote Sensing, Macmillan, Delhi.
11. Nag, P. and Kudra, M., (1998): Digital Remote Sensing, Concept, New Delhi.
12. Richards, J. A. and JiaXiuping., (2005): Remote Sensing Digital Image Analysis: An Introduction, 4th Edition, Springer, Verlag, Berlin.

NEP-2020 First Year UG Practicals in Tourism Management

Course Code - GGSEP-121

Course Type-Practical

No. of Credits: 02

No. of Practical: 15

Course outcomes:

1. Analyze, understand, and innovate the deliverables of tourism sector
2. Understand the basic concept in tourism.
3. Develop and evaluate tourism policy and planning initiatives.
4. Familiarize students with tourist agencies, roles, and responsibilities.
5. Demonstrate ability to make tour packages.
6. Ability to know basic of research project in tourism practice.

Course content:

Module	Topic	Subtopics	Practicals
Module-1	Tourism Site Assessment	Assess a potential tourism site Destination analysis Research the destination case Study - attractions, accommodations, transportation, and other tourism related aspects	4
	Data Analysis and Reporting	Data analysis of Tourist arrivals, hotel occupancy rates, or tourism expenditure. Analyze the data using tools like Microsoft Excel or statistical software. Generate reports, create visualizations, and draw conclusions based on their data analysis.	4
Module-2	Tour Planning	Online Booking and Cancellation – Bus, Rail, flights, accommodations. Design a tour package domestic and international for market. Prepare Budget for package domestic and international Tour	4
	Field Trip	Organize a field trip to a tourism-related business such as a hotel, travel agency, or tourist attraction. Prepare a report summarizing their observations.	3

References-

1. Claire Boobbyer "Tourism Planning: Basics, Concepts, Cases" by CABI publication.
2. Clare Inkson and Medlik S. "Tourism Planning: Policies, Processes, and Relationships" by (Cengage Learning EMEA)
3. Gurdeep Singh and S. P. Gupta "Tourism Management and Planning" by (Ane Books Pvt. Ltd.)
4. Guido Candela and Paolo Figini "Tourist Destination Management: Issues, Analysis, and Policies" by Routledge publication.
5. ErcanSirakaya-Turk, MuzafferUysal, and William E. Hammitt "Research Methods for Leisure, Recreation, and Tourism" by (CABI)
6. Smith, L. J. S. (2010). Practical Tourism Research, CABI, Wallingford

Value Education Course VEC- Sem.-II;

POVET-121: Democracy and Indian Constitution

2 Credit, 30 L

Unit-1: The Concept of Democracy

- A. Meaning – Nature and Definition.
- B. Origin and Development.
- C. Types of Democracy. Direct and Indirect

Unit-2: A. Major Feature of Democracy.

- B. Social Democracy.
- C. Demerits of Democracy.

Unit-3: Making of Indian Constitution.

- A. Fundamental Rights in the Indian Constitution.
- B. Basic Structure of the Indian Constitution.

Unit: 4 A. Fundamental Duties of Citizens

- B. Election Commission of India (Electoral Reforms/ E.V.M./Code of Conduct)

English Reference Books/Text

1. An introduction to Political Theory, Author: Rajiv Bhargava Publication: Pearson.
2. Bryce, Modern Democracies.
3. E. Asirvatham, political Theory.
4. Bharatiya Rajyaghatna va Ghatanatmak prakriya, Author: Tukaram Jadhav Publication: Unique Academy Pune.
5. Introduction to the Constitution of India Author: Dr. Durga मराठी संदर्भ साधने:
 - १) डॉ. बाळ कांबळे, २०१२, भारताची राज्यघटना, राजकारण व कायदा डायमंड प्रकाशन पुणे.
 - २) पाटील बी. बी., २०१६ भारतीय शासन आणि राजकारण फडके प्रकाशन कोल्हापूर.
 - ३) डॉ. जोती बीडलन, डॉ. देशपांडे. भारतीय संविधानाचा परिचय, निराली प्रकाशन, पुणे.
 - ४) प्राचार्य. काने राजकीय सिद्धांत आणि राजकीय विचार, पिंपळापुरे प्रकाशन, नागपूर
 - ५) प्रा. प्रमोद तांबे, राज्यशास्त्र परिचय, निराली प्रकाशन, पुणे.
 - ६) डॉ. विजय देव, आधुनिक राजकीय विश्लेषण कोश, डायमंड प्रकाशन, पुणे,
 - ७) भार्गव राजीव, राजकीय सिद्धांत परिचय, अनुवाद-हेमंत खानझोडे, पीयरसन प्रकाशन.
 - ८) ना य. डोळे, राजकीय विचारांचा इतिहास, कॉन्टिनेन्टल प्रकाशन, पुणे.

PROGRAMME OUTCOMES

Political Science undergraduate program was born out of recognition of the increasing significance of cross-disciplinary studies in the social sciences. The program is organized around the combined perspectives and analytical tools of Sociology, Political Science, International Relations, and History.

1. Develop knowledge of theories, concepts, and research methods in humanities and social sciences.
2. Assess how global, national and regional developments affect society.
3. The Political Science degree furnishes the students with a unique multidisciplinary approach in social sciences and prepares them for further academic study and for careers in the public and the private sector.

Video Lecture Links

Unit 1: <https://youtu.be/fJaLKyF8Qhw?si=qhL26a4lYps9UV4C>

Unit 1 and 2 : <https://www.youtube.com/watch?v=DXcJoihea7Y>

Unit 2: <https://www.youtube.com/watch?v=GlyiyEBlpH4>

Unit 3: <https://youtu.be/XCvTZzvzh2E?si=kd4eVMXfTTf-IsAL>

Unit 4: https://drive.google.com/file/d/1v_E9q_5UwgyVXF0BcR35u2LOgYVMgYa7/view

Curricular Course; 2 Credits, 60L (Sem.-II)

CCPEP-121: Physical Education and Sports

Theory and Active Participation

- Introduction to Physical Education and Sports
- Concept of Physical Education, its Definition and Scope.
- Concept of Physical Fitness
- Components of Health Related Physical Fitness
- (Cardio-vascular Endurance, Muscular Strength, Endurance, Flexibility, and Body Composition)
- Components of Skill Related Physical Fitness (Agility, Balance, Co-ordination, Speed, Power, Reaction Time)
- Concept of Health, Wellness, and Health & Hygiene.

Fitness Assessment & Participation in Sports

In order to improve the physical fitness standards of students, they should be given opportunity and facilities to participate in Physical Fitness Activity and a game / sport from the list of Association of Indian Universities, New Delhi (List of events available on website www.aiuweb.org). The choice of game / sports will be according to the facilities available in the college.

Participation in Fitness Activity:

- Every student should participate in Fitness Activity for 12 hours.

Participation in Games and Sports:

- A student will have to select one game/sport from the list of Association of Indian Universities, New Delhi (List of events available on website www.aiuweb.org). The choice of game/sports will be according to the facilities available in the college.

Every student should participate in Games and sports for 12 hours.

Fitness Assessment:

- Cardiovascular Endurance
- Flexibility
- Muscular Strength Endurance
- Body Composition (No marks)

EVALUATION STRUCTURE:

Table 1

Course	Type of Assessment	Marks	Mode of Evaluation
COURSE – CCPEP-121 PHYSICAL EDUCATION, SPORTS	Internal Assessment	15	Assignment (15 marks) Project on the selected Sports Event
	External Assessment	35	Participation (10 marks) (24 hrs. of participation in Fitness and selected game/sport). Practical – Fitness Test- 25 marks

To complete first credit of Course - Physical Education, Sports, Teacher will have to **conduct 5 theory lectures** (college may schedule these lectures during first or second semester before fitness assessment) and

student will have to attend 5 theory lectures and has to participate in Fitness and selected game / sport for **minimum 24hrs.and submit the assignment.**

- Procedure for fitness tests are given in the guidelines section which also includes Norms Table.

Marks to be awarded in accordance with the norms table.

Sr. No.	Component	Test	Marks
1	Cardiovascular Endurance (Any One)	1. Modified Queens College Test or 2. 12 Min. Run Walk	10
2	Flexibility	2. Sit and Reach Test	05
3	Muscular Strength Endurance	3. Bent Knee Sit Ups	10
4	Body Composition	4. Fat Percentage	-----
		Total	25

CONSIDERATIONS AND EXEMPTIONS:

Differently Able Students

Differently able students will be exempted from the course **CCPEP-121 PHYSICAL EDUCATION AND SPORTS** after producing the valid documents. This is not depriving them from the equality of opportunity with other students. The student shall have to submit his/her medical certificate at the time of admission from a Civil Surgeon of respective District Civil Hospital.

Important Note:

- Temporary illness will not give students exemption from the course. If he / she miss any assessment/task he / she will be given opportunity in the ensuing semester.

Exemption

Any Student representing college / institute in the enlisted games of Association of Indian Universities / Indian Olympic Association / State Olympic Association shall be **exempted from mandatory participation in selected game / sport for minimum 24hrs** of first credit of Course - **CCPEP-121** Physical Education and Sports.

SYBA With effect from 2025-26

GGMAT-231 Principles of Geomorphology

Major Course

Semester-III

No of Credit-4

No of periods:60

Course Outcomes:

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

1. To learn basic concepts and theories of Geomorphology, Processes, and landforms concerning time and scale.
2. Students will have an overview of the structure and composition of the interior of the earth and development of the earth's crust and the origin and methods of development of major landforms
3. Acquire knowledge about types of folds and faults and earthquakes, volcanoes and associated landforms.
4. Understanding crustal mobility and tectonics; with special emphasis on their role in landform development.
5. To learn different types of landforms and landscape environments.
6. The course will provide an understanding of the conceptual and dynamic aspects of landform development

Modules	Topic Name	Sub-Topics	No. of Lectures
1	Geomorphology	i. Geomorphology: Nature and Scope ii. Key Concepts and Systems Approach iii. Distribution of Continents and Oceans iv. Earth: Interior Structure	10
2	Earth Movements	i. Alfred Wegener's continental drift ii. Isostasy. Plate Tectonics, iii. Earth's Movements: Endogenetic and Exogenetic forces, Sudden and Diastrophic movements- Epeirogenetic and Orogenetic Movements-Process of folding and faulting iv. Earthquakes and Volcanoes. Case Studies: Volcano, Earthquake: reporting of latest incidents	16
3	Geomorphic Processes	i. Weathering: meaning, types, and controlling factors ii. Mass Movement: meaning, controlling factors, types-landslides, rock-falls iii. Cycle of Erosion (Davis and Penck) Case Studies: landslides: reporting of latest incidents	12
4	Evolution of Landforms	i. Fluvial, ii. Karst, iii. Aeolian, iv. Glacial, and v. Coastal (Erosional and Depositional)	12
5	Applied Geomorphology and Environment.	i. Application of geomorphology: in India and Maharashtra (Regional planning, Urban planning and transportation, Mining, Hazard management, Agriculture and Environmental management).	10

References:

1. Kale, V. S., & Gupta, A. (2010). Introduction to Geomorphology. Hyderabad: Universities Press.
2. Ollier, C. D. (1981). Tectonics and Landforms. London: Longman.
3. Singh, S. (2002). Geomorphology, Allahabad: Prayag Pustak Bhawan.
4. Strahler, A. H., & Strahler, A. N. (1992). Modern Physical Geography, New Jersey: John Wiley and Sons.
5. Tarbuck, E. J., & Lutgens, F. K. (2009). Earth Science. New Jersey: Prentice Hall

GGMAP-232 Course: Basics Statistical Techniques

No. of Credits: 02

No. of Practical: 15

Course Outcomes

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

1. Understand the basics of data collection and processing for meaningful outcomes.
2. Students will be acquainted with the Basic Statistical Techniques.
3. Students will acquire skills of Geographical Data and its Basic Analysis.
4. Students will acquire skills of Geographical Data and its Basic Analysis, their advantages and limitations.
5. Comprehend the representation and interpretation of the results.
6. Put into practice results obtained in representation as well as day-to-day life.

Modul es	Topic	Subtopics	Practicals
1	Geographical Data and its Basic Analysis	i. Introduction and Types of Geographical Data: i) ii. Spatial and Temporal data ii) Discrete and Continuous series iii) Grouped and Ungrouped data iii. Basic Analysis: a. Tally marks and frequency table b. Frequency distribution (histogram & polygon) c. Cumulative Frequency and Ogive curve	03
2	Sampling	Types of sampling i. Simple random sampling ii. Systematic sampling iii. Stratified sampling iv. Clustered sampling	06
3	Calculation of Central Tendency & Dispersion	i. Meaning and description of central tendencies- Mean, Mode, Median ii. Calculation of Mean, Mode, Median for ungrouped and grouped data (two examples each) iii. Measures of Dispersion: Mean Deviation and Standard Deviation (two examples each)	06

Reference Books:

1. Acevedo, M. F., 2012. Data Analysis and Statistics for Geography, Environmental Science and Engineering, CRC Press.
2. Ahirrao, D. Y. and Karanjkehele, E.K., 2002. Pratyakshik Bhugol, Sudarshan Publication, Nashik.
3. Creswell J., 1994. Research Design: Qualitative and Quantitative Approaches, Sage Publications.
4. Hammond, R. and McCullagh, P. S., 1977. Quantitative Techniques in Geography: An Introduction, Clarendon Press, Oxford.
5. Harris, R., Jarvis, C. 2011. Statistics for Geography and Environmental Science, Prentice Hall.
6. Jog. S. R. and Saptarshi, P. G., 1980. Sankhyiki Bhugol, Narendra Publication, Pune.
7. Karlekar, S. N. and Kale, M., 2006. Statistical Analysis of Geographical Data, Diamond Publication, Pune.
8. Kumbhar, A., 2000. Pratyakshik Bhugol, Sumeru Publications, Mumbai.
9. Mc Grew Jr., J. C., Lembo Jr., A. J., Monroe, C. B. 2014. An Introduction to Statistical Problem solving in Geography, 3rd ed, Waveland Press.
10. Pal. S. K., 1998. Statistical Methods for Geoscientists: Techniques and Applications, Concept Pub.co.
11. Rogerson, P. A., 2015. Statistical Methods for Geography: A Student's Guide, 4th ed, Sage.
12. Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan.
13. Singh R. L. and Dutt, P.K., 1968. Elements of Practical Geography, Students Friends, Allahabad.
14. Singh R. L., 2005. Elements of Practical Geography. Kalyani Publishers, New Delhi.

GGVST – 231 Fundamentals of Geographical Information System

Course Code - GGVST – 231

Course Type-Theory

No. of Credits: 02

No. of Practical: 30

Course Outcomes:

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

1. Understand various components and principles of GIS
2. Construct the thematic maps using different digital layers
3. Apply GIS in various geographical studies

Module	Chapter	Topic	Practicals
Module-1	Geographical Information System (GIS)	Geographical Information System (GIS): Definition and Components.	6
	Global Positioning System (GPS)	Global Positioning System (GPS): Principles and Uses.	5
Module-2	GIS Data Structures	GIS Data Structures: Types (spatial and non-spatial), Raster and Vector Data Structure.	5
	GIS Data Analysis	GIS Data Analysis: Input; Geo-Referencing	8
	Application of GIS	Application of GIS: Land Use Mapping, Forests Monitoring and Natural disasters.	6

References:

1. Bhatta, B., (2010): Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg. 41.
2. Burrough, P.A., and McDonnell, R.A. (2000): Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press.
3. Chauniyal, D.D. (2010): Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad.
4. Gomarasca, M. A. (2009) Basics of Geomatics, Springer Science, New York.
5. Heywoods, I., Cornelius, S and Carver, S., (2006): An Introduction to Geographical Information system. Prentice Hall.
6. Jha, M.M. and Singh, R.B., (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
7. Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet (2019): Spatial Information Technology for Sustainable Development Goals, Springer.
8. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
9. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
10. Singh, R.B. and Murai, S. (1998) Space Informatics for Sustainable Development, Oxford and IBH, New Delhi.

GGFP-231 Field Project

No. of Credits: 02

No. of Practicals: 15

Course Outcomes:

Field Projects provide opportunities to the learners to test their in-class learning in real life situations as well as to understand the functional diversity in the learning spaces. These may include visits to sites of knowledge creation, preservation, dissemination and application.

GEOMIP-232 Tourism Geography

No of Credit-4

No of Practicals:30

Course Outcomes:

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

1. Identify and describe the essential elements of tour planning.
2. Prepare tour planning materials, documentation, and booking and cancellation systems for transport and accommodation.
3. Develop skills required to plan and manage tours effectively.

Modules	Topic Name	Sub-Topics	Practicals
Module 1	Theories and Tourism Potential Index	Butler's Model of Tourism Development, Doxy's Index Tourism Potential Index (TPI)	02
	Tourism Development in India and Field Visit	Environmental laws and tourism. Impact of globalisation and foreign capital on tourism development. Government policies for tourism development. (ITDC, MTDC)	08
Module 2	Map Work	Preparation of Tour maps. Maps and Toposheet Reading. Use of GPS. Calculating the distance on the map. Understanding and locating some prominent geographic features like, islands, peninsulas, bays, inland water bodies, beaches, backwaters, deltas, black mountains, glaciers, valleys, plateaus, gorges, escarpments and meadows etc. on map Study of tourist routes and destinations	02
	Travel Itinerary	Introduction, Types of Itineraries, Do's and Don'ts of Itinerary Preparation, Do's, Don'ts of Itinerary Preparation, Example of Itinerary.	03
Module 3	Survey Techniques	Conducting field surveys to study tourism patterns. Visitor surveys: Designing questionnaires, collecting data, and analyzing results. Interviews with local tourism stakeholders (e.g., tour operators, local businesses). Case studies of popular tourist destinations to understand visitor behavior and patterns.	08
	Field Visits and Excursions/Case Studies on Ecotourism and Adventure Tourism	Study of ecotourism sites and their geographical features. Analysis of adventure tourism regions (e.g., trekking areas, mountain biking spots). Impact assessments and recommendations for sustainable practices in these areas.	07

References:

1. Boniface, B., Cooper, R., Cooper, C. 2016. Worldwide Destinations: The Geography of Travel and Tourism, vol. 1, 7th ed, Routledge.
2. Edgell, D.L., Swanson, J. 2013. Tourism Policy and Planning: Yesterday, Today, and Tomorrow, Routledge
3. Fennell, D.A. 2014. Ecotourism, 4th ed, Routledge.
4. Hall, C.M., Lew, A.A. 2009. Understanding and Managing Tourism Impacts: An Integrated Approach, Routledge
6. Var, T., Gunn, C. Tourism Planning: Basics, Concepts, Cases, 4th ed, Routledge.
7. Holloway, J.C., (1983), The Business of Tourism, McDonald and Evans, Plymouth.
8. Syrratt Gwenda, (1995). Manual of Travel Agency Practice, Butterworth Heinemann, London
9. Stevens Laurence, (1990). Guide to Starting and Operating Successful Travel Agency, Delmar Publishers Inc., New York.
10. Chand, Mohinder, Travel Agency Management, Anmol Publication.

GGGET-231 Natural Disaster Management

No. of Credits: 02

No. of Lectures: 30

Course Outcomes:

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

1. Understand processes and impact of disaster
2. Understand both natural and man-made disasters and human negligence in the context of the environment
3. Write a fieldwork-based report on Disaster Management to minimize the disaster risk/
Risk from Disaster.

Modules	Topic	Subtopics	No of Periods
Modules 1	Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.	i. Meaning and definition of Hazards and Disasters ii. Geographical conditions and disasters iii. Classification of Disasters. iv. Disasters in India: Causes, Distribution, Impact, Mapping: Flood, Landslide, Drought Earthquake, Tsunami and Cyclone. v. Human induced disasters: Causes, Impact, Distribution and Mapping.	08
	Concepts in disaster management	Concepts in disaster management i. Concept of disaster management ii. Aims and objectives.	07
Modules 2	The Project Report is based on any two field-based case studies among the following disasters and one disaster preparedness plan of the respective college/locality and district.	i. Flood ii. Drought iii. Cyclone and Hailstorms iv. Earthquake and Volcanoes v. Landslides vi. Human-Induced Disasters: Fire Hazards, Chemical, Industrial accidents	07
	Project Report Writing	i. Project Report Writing	08

References:

1. Carter, N., (1991): Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.
2. Government of India (2011): Disaster Management in India. Ministry of Home Affairs, New Delhi.
3. Government of India (2008): Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India
4. Kapur, A., (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
5. Modh, S., (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.

GGIKST- 231 Geographical Knowledge of Ancient Indians

Course Code - GGIKST- 231

Course Type-Theory

No. of Credits: 02

No. of Periods: 30

Course Outcomes:

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

1. Students will understand and appreciate the rich heritage of Geographical Knowledge that resides in our traditions.
2. Inculcate an understanding of the Geographical Knowledge of Ancient Indians
3. Learn to appreciate the need and importance of Geographical Knowledge and concepts of Ancient Indians.

Modules	Topic	Subtopics	No of Periods
Module-1	Introduction to Indian Knowledge System and Ancient Indian Geographical Thought	Historical foundations of geography in India. Early geographic knowledge in Vedic texts, Puranas, and other ancient literature. Concepts of Earth, space, and celestial bodies in ancient Indian traditions (e.g., cosmography, geography of the world as per ancient scriptures). Mapping traditions and spatial representations in Indian classical texts. Indian astronomical knowledge and its contributions to geography (e.g., the concept of cosmology in Vedas, and the role of nakshatras and panchang).	7
	Traditional Systems of Mapping and Land Use	Indigenous mapping systems: Kshetra Puranas, Maps in Temple Architecture, and traditional cartographic knowledge. Mapping of agricultural land, sacred groves, forests, and water bodies. Vastu Shastra: The science of architecture and spatial planning in India. Community-based land use practices and sustainable land management methods.	8
Module-2	Water Management and Conservation in Indian Tradition	Traditional water conservation techniques in India: Tanks, Step wells (Baolis), and Wells (Kundis). Ancient irrigation systems and their impact on agricultural geography. The concept of river basins in ancient India and traditional practices like the “Bundela” system. Sacred geography and river worship (e.g., the Ganga, Yamuna). Importance of ponds and lakes in village-level geography.	8
	Indigenous Navigation and Maritime Knowledge	Ancient Indian maritime knowledge and sea navigation systems (e.g., Yatra routes, trade routes). The geography of ancient ports and coastal settlements. The influence of monsoons on navigation and trade. India’s traditional knowledge in oceanography and coastal mapping.	7

References:

1. Ali, S. M. The Geography of the Purāṇas. New Delhi: People's Publishing House, 1996.
2. Gupta, P. Geography in Ancient Indian Manuscripts. Delhi: D.K. Publishing House, 1973.
3. London: George Allen and Unwin Ltd., 1951.

4. Majumdar, R. C. and A. D. Pusalkar eds. The History and Culture of Indian People: The Vedic Age.
5. Max Mueller, F. Upaniṣads. Oxford, 1900.
6. Narayan, R. K. The Ramayana. Penguin Books, 1977.
7. Tripathi, M. P. Development of Geographic Knowledge in Ancient India. Varanasi: Bhartiya Vidya Prakashan, 1969.
8. https://www.academia.edu/11893889/Geographical_knowledge_of_ancient_Indians
9. https://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S000017GE/P001784/M027051/ET/1517478469GeographicalThoughtinIndia.pdf

GGMAT -241 Principle of Climatology 4 credits**No. of Credits – 04****No. of Periods – 60.****Course Outcomes:**

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

1. In-depth knowledge of atmospheric moisture and precipitation
2. Knowledge of the cyclones
3. An understanding of air mass, front and classification of climate
4. In-depth knowledge of climatic issues
5. Increasing knowledge of applied climatology

Modules	Topic	Sub-topic	Periods
Module 1	Atmospheric Composition and Structure	i. Vertical structure ii. Variation with Altitude, Latitude and Season; iii. Insolation and Temperature: Factors and Distribution, iv. Heat Budget, v. Temperature Inversion	10
	Atmospheric Pressure and Winds	i. Atmospheric Pressure, Planetary Winds, Forces affecting Winds, General Circulation of Air, Jet Streams; ii. Atmospheric Moisture: Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, iii. Stability and Instability; iv. Climatic Regions	15
Module 2	Cyclones	i. Tropical Cyclones, ii. Temperate Cyclones, iii. Monsoon - Origin and Mechanism, iv. El Nino and Southern oscillation	10
Module 3	Air Mass, Front and Classification of Climate	i. Concept of Air Mass, Front ii. Classification and types of Air Mass, Front iii. Classification of Climate- Koppen's, classification of world climate.	10
Module 4	Climate Change and Application of Climatology	i. Climate change Concept ii. Climatic Issues iii. Sea level rise iv. Impact of Climate Change - Carbon foot Print, Global warming- Causes, Heatwave and Coldwave, environmental impacts, and remedies v. Application of Climatology vi. Applied climatology vii. Urban climate	15

Reference:

1. Barry R. G. and Carleton A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
2. Barry R. G. and Corley R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
3. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi.
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. E. and Hidore J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.
6. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill.
7. Gupta L S (2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi.
8. Lal, D S (2006): Jalvayu Vigyan, Prayag Pustak Bhavan, Allahabad.
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10. Singh, S (2009): Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad.

GGMAP-242 Surveying Techniques

No. of Credits – 02

No. of Practicals – 15

Course Outcomes:

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

1. Concept of drawing and sheet layout following safety precautions
2. Perform the site survey using Plain-table
3. Perform the site survey using the Dumpy level
4. Perform the site survey using Theodolite
5. Perform the site survey using G.P.S.
6. Perform Auto CAD drawing

Modules	Topic Name	Sub-Topics	Practicals
Module 1	Basics of Surveying:	Surveying: meaning, classification, Merits and demerits.	1
	Instrumental Survey	Plane Table Surveying	2
	Dumpy level	Introduction, Concepts, Mechanism, and Pre-requirements of the Dumpy Level	3
Module 2	Theodolite survey	Introduction, Concepts, Mechanism, and Pre-requirements of the Theodolite Survey	3
	CAD	Introduction of Auto CAD	4
	GPS survey	Instrument handling and setting	2

References:

1. Kanetker, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Vol I and II V.G. Prakashan, Poona.
2. Monkhouse, F.J. and Wilkinson, F.J. (1985): Maps and Diagrams, Methuen, London.
3. Pugh, J.C. (1975): Surveying for Field Scientists, Methuen and Company Ltd., London.
4. Raiz, E. (1962): Principles of Cartography, McGraw Hill, New York.
5. Robinson, Arthur et al., (1978): Elements of Cartography, John Wiley and Sons, New York.
6. Sarkar, A.K. (1997): Practical Geography: A Systematic Approach, Orient Longman, Kolkata.
7. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.

GGVSP-241 Geographical Information System

Course Code - GGVSP-241

No. of Credits: 02

Course Type-Practical

No. of Practical: 15

Course Outcome:

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

1. Understand various components and principles of GIS
2. Construct the thematic maps using different digital layers
3. Apply GIS in various geographical studies

Module	Chapter	Topic	Practicals
Module-1	Geographical Information System (GIS)	Geographical Information System (GIS): Definition and Components.	3
	Global Positioning System (GPS)	Global Positioning System (GPS): Principles and Uses.	3
Module-2	GIS Data Structures	GIS Data Structures: Types (spatial and non-spatial), Raster and Vector Data Structure.	3
	GIS Data Analysis	GIS Data Analysis: Input; Geo-Referencing	3
	Application of GIS	Application of GIS: Land Use Mapping, Forests Monitoring and Natural disasters.	3

References:

1. Bhatta, B., (2010): Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.41
2. Burrough, P.A., and McDonnell, R.A. (2000): Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press
3. Chauniyal, D.D. (2010): Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad
4. Gomasasca, M. A. (2009) Basics of Geomatics, Springer Science, New York
5. Heywoods, I., Cornelius, S and Carver, S., (2006): An Introduction to Geographical Information system. Prentice Hall.
6. Jha, M.M. and Singh, R.B., (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
7. Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet (2019): Spatial Information Technology for Sustainable Development Goals, Springer.
8. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
9. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
10. Singh, R.B. and Murai, S. (1998) Space Informatics for Sustainable Development, Oxford and IBH, New Delhi.

GGCEP -241 Community Engagement Project

No. of Credits: 02

No. of Practicals: 15

Course Outcomes:

Community Engagement Project provides opportunities to learners to test their in-class learning in real-life situations as well as to understand the functional diversity in the learning spaces. These may include visits to sites of knowledge creation, preservation, dissemination and application.

The Community Engagement and Social Responsibility course is an immersive and transformative learning experience for second-year undergraduate students. In an era where the intersections of diverse disciplines are more critical than ever, this course stands at the forefront of transdisciplinary and multidisciplinary education. As the heartbeat of societal progress, this compulsory course seeks to connect students with their communities, fostering a deep sense of social responsibility. Rooted in the belief that academic knowledge should transcend classroom walls, the aim is to equip students with the tools to analyse, comprehend, and address pressing social issues. Through dynamic and interactive learning methods, students will explore the complexities of community dynamics and actively contribute to the development of sustainable solutions.

Reference:

1. Guidelines on “Fostering Social Responsibility & Community Engagement in Higher Education Institutions in India 2.0 0 (<https://www.ugc.gov.in/publication/ebook>)

GGMIT-241 Disaster Management and Mitigation

No. of Credits: 04

No. of Periods: 60

Course Outcomes:

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

1. Understand processes and impact of disaster
2. Understand both the natural and man-made disaster and human negligence in context of environment
3. Write a field work-based report on Disaster Management to minimize the disaster risk/
Risk from Disaster.

Modules	Topic	Subtopics	Periods
Modules 1	Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.	i. Meaning and definition of Hazards and Disasters ii. Geographical conditions and disasters iii. Classification of Disasters. iv. Disasters in India: Causes, Distribution, Impact, Mapping: Flood, Landslide, Drought Earthquake, Tsunami and Cyclone. v. Human induced disasters: Causes, Impact, Distribution and Mapping.	10
	Concepts in disaster management	i. Concept of disaster management ii. Aims and objectives.	10
Modules 2	Site Visits and Data Collection	i. Visit disaster-prone areas like floodplains, earthquake-prone zones, coastal regions, and landslide-prone areas. ii. Conduct field surveys to collect data on demographics, infrastructure, vulnerability factors, and existing mitigation measures. Utilize tools like GPS, GIS, and remote sensing for data collection and mapping	10
Modules 3	Risk Assessment and Mitigation Strategies:	i. Analyze disaster risk by identifying potential hazards, vulnerabilities, and potential impacts. ii. Develop mitigation plans including structural measures and non-structural measures	15
	Project Reporting and Analysis	i. Prepare detailed reports based on field observations, data analysis, and practical experiences. ii. Present findings and recommendations to relevant stakeholders.	15

References:

1. Carter, N., (1991): Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.
2. Government of India (2011): Disaster Management in India. Ministry of Home Affairs, New Delhi.
3. Government of India (2008): Vulnerability Atlas of India. New Delhi, Building Materials and Technology Promotion Council, Ministry of Urban Development, Government of India
4. Kapur, A., (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
5. Modh, S., (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.

GGSEP-241 Agro-Tourism

No of Credit-2

No of Practicals: 15

Course Outcomes:

1. Define agritourism and food tourism and articulate the latest trends and changing demographics.
2. Discuss interdisciplinary academic approaches, theories, and critical lenses on agritourism.
3. Understand the role of value-added products in both tourism and food security.
4. Link the promotion of sustainability and community resilience to agriculture.

Modules	Topic	Subtopics	Practicals
Module 1	Introduction to Agro-Tourism-	Meaning, Definition, Importance, Scope, Types of Agro-Tourism, Advantages of agro-tourism, Problems of Agro-Tourism Agro-tourism: demand and motivation factors	3
	Planning and Management of Agro tourism	Planning and managing Agro-tourism, Need for planning and management, Accommodation and catering in agro-tourism	4
Module 2	Agri-Tourism Products and Services	Classification of Agri-tourism products and services-Agri-accommodation products and services, Agri-food products and services, Agri-recreation products, and services	4
	Field visit	Field visit and report writing Case Study: Agro-tourism: The impact on rural communities Case Study: Trends of Tourism Market for Agro-Tourism	4

References:

1. Michal Sznajder et al. (2009), Agritourism, CAB International
2. Frederic P. Miller, Agnes F. Vandome, McBrewster John (2010). Agritourism, VDM Publishing.
3. Vijay Kumbhar (2013). Problems and Prospects of Agritourism Business, LAP LAMBERT Academic Publishing.

P. D. E. A's.
Prof. Ramkrishna More College, Akurdi, Pune 411044
Department of Geography
Board Geography
Faculty Science and Technology
Graduate and Honors Degree Course Framework under Autonomy as per NEP-2020
With effects from 2023-24
Question Paper pattern

Marks: 70		Time: 3 Hour	
Instructions to the Candidate:			
1. All questions are compulsory.			
2. Figures to right indicate full marks.			
3. Use of Log table and scientific calculator is allowed.			
Question-1	Solve Any five of the following (Short Answers) i. ii. iii. iv. v. vi. vii.	Three def. type, two tricky questions and two questions problem type (if applicable)	10 Marks
Question-2	A. Solve any two of the following i. ii. iii.	Note or Describe type questions	12 Marks
	B. Solve the following Single question of four marks or two questions of 2 marks.	Problem type or tricky reasoning type question	8 marks
Question-3	A. Solve any two of the following i. ii. iii.	Write Note / Differentiate type questions	12 Marks
	B. Solve the following Single question of four marks or two questions of 2 marks.	Problem type or Derive equation or Tricky discussion type question	8 marks
Question-4	Solve Any four of the following i. ii. iii. iv. v.	Application type, Justification type question	20

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Graduate and Honors Degree Course Framework under Autonomy as per NEP-2020
With effects from 2023-24
Question Paper pattern

Marks: 35		Time: 2 Hour	
Instructions to the Candidate:			
1. All questions are compulsory.			
2. Figures to right indicate full marks.			
3. Use of Log table and scientific calculator is allowed.			
Question-1	Solve Any five of the following (Short Answers) i. ii. iii. iv. v. vi. vii.	Three def. type, two tricky questions and two questions problem type (if applicable)	5 Marks
Question-2	A. Solve any two of the following i. ii. iii.	Note or Describe type questions	6 Marks
	B. Solve the following Single question of four marks or two questions of 2 marks.	Problem type or tricky reasoning type question	4 marks
Question-3	A. Solve any two of the following i. ii. iii.	Write Note / Differentiate type questions	6 Marks
	B. Solve the following Single question of four marks or two questions of 2 marks.	Problem type or Derive equation or Tricky discussion type question	4 marks
Question-4	Solve Any four of the following i. ii. iii. iv. v.	Application type, Justification type question	10