



*Regulations Governing the Choice Based Credit System (Semester Scheme)
with Multiple Entry and Exit Options for the Five-Year Integrated B.Sc. and
M.Sc. Programs in Geography with specialization in Geoinformatics or
Natural Disaster Management effective from Academic Year 2022 - 2023*

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Preamble:

Five-Year Integrated B.Sc. and M.Sc. Degree Program (IMSc) in Geography with Specialization in Geoinformatics or Natural Disaster Management program is a significant shift in contemporary education by replacing traditional programs. The curriculum is designed on the Outcome-Based Education (OBE) approach. As a result, the University has decided to replace current degree program in the Faculties of Science with multidisciplinary and holistic education with multiple entry and exit options. This Multidisciplinary five-year program aims to improve the student's community with the implementation of flexible and creative curricula. This encompasses a wide variety of disciplines in order to expose students to a broad range of information and experience while focusing on one or two areas in particular. The curriculum would fulfill the significant knowledge criteria for vocational, professional, and skill development. The whole program is restructured into a three-year Degree in Geography, four-year Honours (with research) Degree in Geography and five-year M.Sc Geography with specialization in Geoinformatics or Natural Disaster Management.

Salient features of five-year Integrated Program

- a) Students at the end of the sixth and eight semesters of the program exit options are provided with basic Bachelor's degrees, a Bachelor's degree with Honours (with research) on successfully completing all semesters either at a stretch or with opted exits and re-entries.
- b) Students who are eligible for Doctoral/ Research Program should have a Four-Year Honours Degree with compulsory research component paper.
- c) Students who exit after 3rd and 4th year will be eligible to re-enter the program at the exit level to compete or progress to the next level.
- d) The curriculum combines conceptual understanding with practical involvement and thinking to impart applicable knowledge through laboratory experiences, field work, internships, workshops, and research projects.
- e) **The students must select their specialization at the 7th semester of the five-year M.Sc. integrated program that will help them expand their horizons. In any academic discipline, however, two areas of specialization allow for in-depth knowledge of the subject.**

- f) The Students select a 'Geoinformatics' or a 'Natural Disaster Management' from a list of two specializations provided by the Department. Students are expected to gain in-depth disciplinary understanding through theoretical and practical experiences, as well as an adequate knowledge base that is studied as a 'Geoinformatics' or 'Natural Disaster Management'.
- g) Skills must be explicitly integrated, prominently exhibited, taught in context, and evaluated explicitly. The skills shall include language, communication and life skills, and working in various teams such as critical thinking, problem-solving and data analysis.
- h) In terms of academic standards and assessment methods, the five-year CBCS maintains a university's output up to date with worldwide trends. Bangalore University must consider adopting this strategy in globalizing Indian higher education so that students can avail placements both inside and outside India.

Definitions of Keywords

Academic Year:

Two consecutive (one odd + one even) semesters constitute one academic year.

Choice Based Credit System (CBCS):

The CBCS provides options for students to select courses from the prescribed courses (core, open elective, discipline elective, ability and skill enhancement language, soft skill courses and so on).

Course:

Usually referred to as 'papers' is a component of a program. All courses need not carry the same weight. The courses should define learning objectives and learning outcomes. A course may be designed to comprise lectures / tutorials / laboratory work / field work / project work / vocational training / viva / seminars / term papers / assignments/ presentations / self-study or a combination of some of these.

Credit-Based Semester System (CBSS): Under the CBSS, the requirement for awarding a degree /diploma /certificate is prescribed in terms of the number of credits to be earned.

Credit: A unit by which the course work is measured. It determines the number of hours of instructions required per week in a semester. One credit is equivalent to one hour of lecture or tutorial or two hours of practical work/field work per week in a semester. It will generally be equal to 13-15 hours of instructions.

Grade Point: It is a numerical weightage allotted to each letter grade on a 10-point scale.

Credit Point: It is the product of grade points and the number of credits for a course.

Letter Grade: It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P and F.

I.M.Sc: Integrated Masters Degree Course in Science.

Program: A program leading to the award of a Degree, Diploma or Certificate.

Semester: Each semester will consist of over 16 weeks of academic work equivalent to 90 actual teaching days. The odd semester may be generally scheduled from June to November and even semester from January to May.

Semester Grade Point Average (SGPA): It is a measure of performance of work done in a semester. It is the ratio of total credit points secured by a student in various courses registered in a semester and the full course credits taken during that semester. It shall be expressed up to two decimal places.

Cumulative Grade Point Average (CGPA): It measures the overall cumulative performance of a student over all the semesters of a program. The CGPA is the ratio of total credit points secured by a student in various courses in all the semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

Transcript or Grade Card or Certificate: Based on the grades earned, a graded certificate shall be issued to all the registered students after every semester. The grade certificate will display the course details (code, title, number of credits, grade secured).³

1. Title and commencement:

- a) These Regulations will be called “**Regulations Governing the Choice Based Credit System (Semester Scheme) with Multiple Entry and Exit Options for the Five-Year Integrated B.Sc and M.Sc Programs in Geography with specialization of Geoinformatics or Natural Disaster Management**”.
- b) These regulations shall come into force from the Academic Year 2022-23.

2. Duration of the Program

2.1 The duration of the program is Five Years (10 semesters) with exit option at the end of 6th/8th semesters. The credit, exit options and NSQF level are as follows:

| Year | Exit Options | Minimum Credits Requirement | NSQF Level |
|-------------|--|-----------------------------|------------|
| Three Years | The Candidate will be awarded “ B.Sc. in Geography ” upon the successful completion of Third year or Six semesters of the five years Integrated M.Sc. program. | 144 | 7 |
| Four Years | The Candidate will be awarded “ B.Sc. Honours (with research) in Geography ” upon the successful completion of Four year or Eight semesters of the five years Integrated M.Sc. program. | 186 | 8 |
| Five Years | The Candidate will be awarded “ M.Sc. in Geography (with Specialization in Geoinformatics or Natural Disaster Management) ” upon the successful completion of Fifth year or Tenth semesters of the five years Integrated M.Sc. program. | 226 | 9 |

B.Sc. Degree / B.Sc. (Hons.) awarded is equivalent to the B.Sc. / B.Sc. (Hons.) Degree awarded by any other recognized State / Central University in the country for deciding eligibility to enable the student to pursue higher education, seek career and job opportunities etc.

2.2 **Entry Level:** The students of a 3-year degree programme can enter into a 4th year / 8th semester B.Sc Degree (Honour). Similarly, a 4 year Degree Honours students can enter into a 5th year/9th Semester Integrated M.Sc Program. Even students of similar B.Sc / B.Sc Honours programs run elsewhere in India can also enter to complete their B.Sc / MSc against the availability of the seats. The students need to follow time to time guidelines given by the University in this regard.

3. Degree Equivalence:

The M.Sc. Geography Degree awarded with specialization in Geoinformatics or Natural Disaster Management (upon completion of five years) is equivalent to that of the M.Sc. Degree awarded by any other recognized State / Central University in the country for purposes of deciding eligibility for students to pursue further study (CSIR/ JRF / NET / SET examinations, Ph.D.), appearing for competitive examinations (Public Service Commissions of Union or respective State Governments/ BSRB etc.) or to appear for job interviews etc. throughout the country.

The M.Sc. Geography Degree awarded with specialization in Geoinformatics or Natural Disaster Management is an equivalent to M.Sc. Geography for the purpose of deciding eligibility to Assistant Professor at colleges and universities in India.

4. Eligibility for Admission:

A candidate who has passed the two-year PUC Examination conducted by the Pre-University Education Board in Karnataka or 10+2 of CBSE or ICSE or any other examination considered equivalent to that of PUC from any state / country with Science stream and Geography as one of the subject in case of Arts and Commerce stream shall be eligible for admission to the programme, provided they have secured 50% marks. (45% for SC/ST/ Category-I Candidates of Karnataka State domicile) in the qualifying examination.

5. Medium of Instruction

The medium of instruction and examination shall be English / Kannada.

6. Course Pattern:

6.1 The credits are based on the course structure, including the teaching mode and the number of contact hours for lecture, tutorial, and practical classes. One hour of theory/tutorial teaching per week equals one credit, and two hours of laboratory/demonstration classes per week equals one credit. Credits are considered based on the number of contact hours, course content, teaching methodology, allotted maximum marks. While calculating the grading, one credit is equal to 25 marks in a semester. Thus, a 3 or 4 credit course will receive 100 marks, a 2 credit course would receive 50 marks, and a single credit course will receive 25 marks (**Appendix-I**).

In this integrated course, the number of credits per semester may vary from 20 to 25, an average of 23 credits per semester and a total of around 226 credits for the integrated program. One credit is equivalent to one hour of lecture or tutorial or two hours of practical work / field-work per week in a semester. It will generally be equal to 13-15 hours of instructions. Credits for internship shall be one credit per one week of internship, subject to a maximum of six credits.

7. Academic Bank of Credits

7.1 It means an academic service mechanism as a digital/virtual/online entity established by University Grants Commission to facilitate students to become its academic accounts holder, thereby paving the way for seamless students' mobility between or within degree

granting HEIs through a formal systems of credit recognition, credit accumulation, credit transfer and credit redemption to promote distributed and flexible teaching learning.

The Five-Year Integrated Program comes under Academic Bank of Credits (ABC). The students may earn up to 20% of credits of the program through ABC accept Discipline Specific Core (DSC) and Discipline Specific Elective (DSE) courses.

7.2 Blended learning modes: Options will be available for students (I – VI Semester) to earn credit by completing quality-assured remote learning modes, including online programmes offered on the Study Webs of Active Learning for Young Aspiring Minds (SWAYAM: www.swayam.gov.in) or other online educational platform approved by the University / competent body from time to time. Students may opt to earn credits from such courses up to 20 per cent of the total credits (from each semester) required for the award of a B.Sc. Degree.

8. Languages and Other mandatory subjects:

8.1: The Integrated program has Ability Enhancement Compulsory Courses of Environmental Studies, Constitution of India and Compulsory Languages.

8.1. A. English: Compulsory Language: **and**

B. Anyone of the following languages:

i) Kannada ii) Hindi iii) Sanskrit iv) French v) German

8.2 The students of outside Karnataka and outside India may study one of the languages through online mode within India. Such online language credits must be same as language credit prescribed by the University.

8.3 The IMSc Integrated program has also Skill Enhancement Courses (SEC): Skill-Based Courses – viz., Cartographic Techniques, Utility Mapping, Drone Mapping and Basics of R-Programming. The students need to study the courses compulsorily under SEC, Value-Based Courses like Yoga, and Health & Wellness for 1st semester and NSS / R&R / (S&G) / Cultural for remaining three semesters.

9 Attendance

A candidate shall be considered to have satisfied the requirement of attendance for a semester if they attend not less than 75% of the number of classes held up to the end of the semester in each subject. A candidate who does not satisfy the requirement of attendance in one or more courses/ subjects shall not be permitted to take the University examination of those courses. The candidate shall seek re-admission to those courses in a subsequent year.

10 Scheme of Examinations

The details of the Course Patterns (hours of instructions per week) and the Schemes of Examinations of the Five-Year Integrated Program has been given in the **Appendix-I**. The Syllabi of the courses shall be as prescribed by Bangalore University.

11 Continuous formative evaluation/ internal assessment

Assessment and Evaluation: Assessment is an integral part of the teaching-learning process. The assessment process acts as an indicator to both faculty and students to improve continuously. The following are the guidelines for effective assessment of the program. A range of tools and processes for assessment used are open book tests, portfolios, case study / assignments, seminars / presentations, field work, projects, dissertations, peer and self-assessment. The concerned teachers shall conduct tests / seminars / case studies by prior intimation to the students on evaluation modalities. The evaluated courses / assignments shall be immediately provided to the students. A candidate who has failed or wants to improve the result shall retain the IA marks, provided they fulfill the minimum requirements.

As per the decision taken by the Karnataka State Higher Education Council, it is necessary to have a uniform pattern of **40:60 for IA** and Semester End theory examinations respectively and **50:50 for IA** and Semester End practical examinations, respectively.

| Component | Total Marks for each course = 100% | |
|-------------------------|--|---|
| First Component | Continuous assessment (C1) = 20% marks | This shall be based on the test, assignment, seminar, case study, field-work, project work etc. This assessment and score process should be completed after completing 50% of the syllabus of the course/s and within 45 working days of the semester program. |
| Second Component | Continuous assessment (C2) = 20% marks | This shall be based on test, assignment, seminar, case study, field-work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of the remaining 50% of the syllabus in the courses of any semester. |
| Third Component | Semester End Examination (C3) = 60% marks. | During the 17 th – 19 th week of the semester, a semester end examination shall be conducted by the University for each Course. |

The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

| Activities for Theory | C1 | C2 | Total Marks |
|--|-----------------|-----------------|-----------------|
| Sessional Tests | 10 marks | 10 marks | 20 marks |
| Seminars / Presentations / Field Activity | 10 marks | - | 10 marks |
| Case study /Assignment / Field-work / Project work etc | - | 10 marks | 10 marks |
| Total | 20 marks | 20 marks | 40 marks |

For practical course of full credits, Seminar shall not be compulsory. In its place, marks shall be awarded for **Practical Record Maintenance** (the ratio is 50%: 50%). Conduct of Case study, field-activity, project work assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

| Activities for Practical | C1 | C2 | Total Marks |
|--|-----------------|-----------------|--------------------|
| Sessional Tests | 5 marks | 5 marks | 10 marks |
| Case study /Assignment / Field-activity / Project work etc | 5 marks | - | 5 marks |
| Practical Record Maintenance | - | 10 marks | 10 marks |
| Total | 10 marks | 15 marks | 25 marks |

The evaluation process and Viva-voce for Project Work, Field Study Tour and Internships:

Project Work & Viva-voce

The students of Geography Honours/Integrated M.Sc Geography with Specialization in Geoinformatics or Natural Disaster Management may have to select a specific theme / topic for a Project Work. The students may select the following themes for their project work.

Land Evaluation, Land-use / Land cover Analysis, Natural Resources, Terrain Analysis, Climatic Change, Agriculture, Health, Urban & Rural Infrastructure, Disasters, etc

1. GIS, GPS & RS methods have to be used with appropriate primary and secondary data.
2. The students should follow the research guidelines by studying Research Methodology before taking up Project Work.
3. The Project should not cross 50 pages including field-photos, references and tables.
4. Project work must include quality maps, diagrams and flowcharts.
5. The project report should include the following: Title of the project, Introduction, Review of literature, Study Area, Data sources, Main Objectives, Materials & Methods, Results & Discussions, Conclusions, Field-visit Photos and References.

The completed project work in all respect in consultation of the staff-in-charge needs to be submitted to the Department in stipulated time announced by the Chairman, Department of Geography. Viva-Voice would be conducted at the end of the semester.

| Awarding 150 marks for Project Work and Viva-voce | | |
|--|--|---|
| Project Dissertation Components | IA Marks - Preparing proposal and presentation. | Semester End Examination Marks – (Viva-voce) |
| Relevance of the topic & introduction | 10 | 5 |
| Study Area selection & objectives | 10 | 5 |
| Materials and Method | 10 | 10 |
| Results & Discussion | 10 | 10 |
| Conclusions | 5 | 5 |
| Field-visit Photos & References | 5 | 5 |
| Presentation skills and response to the questions | 25 | 25 |
| | 75 marks | 75 marks |

Field Visit & Viva-voce

The students of Geography Honours / Integrated M.Sc Geography with Specialization in Geoinformatics or Natural Disaster Management may have to take part in field-visits related to the topic of their Project Work. The students may have to prepare appropriate review of literature, questionnaire and plan of field visits to collect ground-based primary data for supporting their project work. Evidences of primary data collections and their relevance to the project work and relevance of review of literature needs to be explained in the form of “**Field Visit Report**” with questionnaire (5-10 pages) at the end of Project Work Dissertation.

The completed “**Field Visit Report**” in all respect in consultation of the staff-in-charge needs to be submitted to the Department in stipulated time announced by the Chairman, Department of Geography. Viva-Voice would be conducted at the end of the semester.

| Awarding 100 marks for Field Visit | | |
|---|-----------------|---|
| Components | IA Marks | Semester End Examination Marks – (Viva-voce) |
| Report submission (5-10 pages) | 25 | 25 |
| Presentation skills and response to the questions | 25 | 25 |
| | 50 marks | 50 marks |

Field-Study Tour & Viva-voce

The students of Geography Honours / Integrated M.Sc Geography with Specialization in Geoinformatics or Natural Disaster Management have to take part in Field –Study Tour. Field Study Tour is an exploratory topic of geographical importance based on empirical evidence. Field Study Tour is a part of curricula in Integrated M.Sc program and is compulsory. The field study tour is to be conducted either soon after completing the IX Semester or in the beginning of the 10th Semester for duration of two weeks.

Places of geographical importance like **Western Ghats, Aravali Range, Coastal Area, North-western Desert, Northern Plain and Himalayan Region with cities located in these regions** have to be selected for the purpose. The detailed geographical, geological, environmental, ecological factors of these regions have to be observed and understood by the students during the field study tour. Students need to explain analytically / critically about the impact of human activities on the environment in their study tour report.

The completed field study tour report in all respect in consultation the staff-in-charge needs to be submitted to the Department in stipulated time announced by the Chairman, Department of Geography. Viva-Voice would be conducted at the end of the semester.

| Awarding 100 marks for Field Study Tour | | |
|---|-----------------|---|
| Components | IA Marks | Semester End Examination Marks – (Viva-voce) |
| Report submission (20-25 pages) | 25 | 25 |
| Presentation skills and response to the questions | 25 | 25 |
| | 50 marks | 50 marks |

Internship and Viva-voce

An Internship is a short-term work experience offered by institutions / organizations / government establishments / MNCs to the students to get some entry-level exposure to a particular field with some stipendiary or without pay. The main idea of internship is to gain work experience and is also requirement as per the curricula of the M.Sc Integrated program. Students are to complete internship where geospatial technologies like Cartography, Remote Sensing, GIS, GPS, surveying applications are carrying out. Internship is at sixth, eighth (in case, student exits) and tenth semesters are mandatory. Students have to select their places of interest or they can also take the help of the Chairman / Faculty in selecting the institutions.

The completed internship report in all respect in consultation the staff-in-charge needs to be submitted to the Department in stipulated time announced by the Chairman, Department of Geography. Viva-Voice would be conducted at the end of the semester.

| Awarding 150 marks for Internship and Viva-voce | | |
|---|-----------------|---|
| Components | IA Marks | Semester End Examination Marks – (Viva-voce) |
| Relevance of the institution / industry | 10 | 10 |
| New methods / techniques learnt | 15 | 15 |
| Report submission (5-10 pages) | 25 | 25 |
| Presentation skills and response to the questions | 25 | 25 |
| | 75 marks | 75 marks |
| Note: Awarding Internship marks for 6 th semester will be based on report submission and viva-voce only. The internship at 6 th semester is short duration while 8 th / 10 th semester is long duration. | | |

The internal assessment marks shall be published on the notice board of the department for information of the students. There shall be no minimum in respect of internal assessment marks.

12 Conduct of Examinations

A candidate shall register for all the courses/papers of a semester for which they fulfill the requirements when they appear for the examination of that semester for the first time.

There shall be Theory and Practical examinations at the end of each semester, ordinarily **during November-December** for odd semesters and **during April-May** for even semesters, as prescribed in the Scheme of Examinations.

Unless otherwise stated in the schemes of examination, practical examinations shall be conducted at the end of each semester. **First to sixth (three years or six semesters) semester examinations will be conducted by the internal examiners only. Seventh to tenth semester examinations will be conducted by two examiners, one internal and one external examiner.** The statement of marks sheet shall be sent to the Registrar (Evaluation) by the BOE Chairman immediately after the practical examinations.

The candidate shall submit the record book for practical examination duly certified by the course teacher and the Department Chairman. It shall be evaluated at the end of the Semester at the practical examination.

Minimum for a Pass: No candidate shall be declared to have passed the Semester Examination as the case may be under each course/paper unless he/she obtains not less than 35% marks in written examination / practical examination and 40% marks in the aggregate of written / practical examination and internal assessment put together in each of the courses and 40% marks (including IA) in Project work and viva wherever prescribed.

A candidate shall be declared to have passed the program if he/she secures at least 40% of marks or a CGPA of 4.0 (Course Alpha-Sign Grade P) in the aggregate of both internal assessment and semester end examination marks put together in each unit such as theory papers / practical / field work / internship / project work / dissertation / viva-voce, provided the candidate has secured at least 40% of marks in the semester end examinations in each unit.

The candidates who pass all the semester examinations in the first attempts are eligible for ranks provided they secure at least CGPA of 6.00 (Alpha-Sign Grade B+).

A candidate who passes the semester examinations in parts is eligible for only Class, CGPA and Alpha-Sign Grade but not for ranking.

The results of the candidates who have passed the last semester examination but not passed the lower semester examinations shall be declared as NCL (Not Completed the Lower Semester Examinations). Such candidates shall be eligible for the degree only after completion of all the lower semester examinations.

If a candidate fails in a subject, either in theory or in practical, he/she shall appear for that subject only at any subsequent regular examination, as prescribed for completing the program. He/she must obtain the minimum marks for a pass in that subject (theory and practical, separately) as stated above.

Carryover: Candidates who fail lower semester examinations may go to the higher semesters and take the lower semester examinations.

Classification of Successful Candidates: An alpha-sign grade, the eight-point grading system, as described below has been adopted for the five-year integrated program. The 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 towards completing all the ten semesters of the program and the corresponding overall alpha-sign grades. The results of successful candidates at the end of sixth semesters, eight semesters and tenth semesters shall be classified based on the Cumulative Grade Point Average (CGPA) obtained in the six, eight and tenth semesters, respectively for award of:

- Bachelor's Degree in Science
- Bachelor's Degree with Honours in Science
- Master's Degree in Geography with Specialization in Geoinformatics or Natural Disaster Management

Table: Final Result / Grades Description:

| Semester GPA/ Program CGPA | Alpha-Sign / Letter Grade | Semester/Program % of Marks | Result / Class Description |
|---------------------------------------|--------------------------------------|--|---------------------------------------|
| 9.00-10.00 | O (Outstanding) | 90.0-100 | Outstanding |
| 8.00-<9.00 | A+ (Excellent) | 80.0-<90.0 | First Class Exemplary |
| 7.00-<8.00 | A (Very Good) | 70.0-<80.0 | First Class Distinction |
| 6.00-<7.00 | B+ (Good) | 60.0-<70.0 | First Class |
| 5.50- | B (Above Average) | 55.0-<60.0 | High Second Class |
| 5.00-<5.50 | C (Average) | 50.0- | Second Class |
| 4.00- | P (Pass) | 40.0-<50.0 | Pass class |
| Below 4.00 | F (Fail) | Below 40 | Fail/Reappear |
| Ab (Absent) | ----- | Absent | -- |

The Semester Grade Point Average (SGPA) in a Semester and the CGPA at the end of each year may be calculated.

13 Rejection of Results

A candidate may be permitted to reject the result of the complete examination of any semester. Rejection of result course/paper wise or subject wise shall not be permitted.

The candidate who has rejected the result shall appear immediately following the examination.

The rejection shall be exercised only once in each semester, and the rejection once exercised shall not be revoked.

Application for rejection of results and the payment of the prescribed fee shall be submitted to the Registrar (Evaluation) through the college of study together with the original statement of marks within 30 days from the date of publication of the result.

A candidate who rejects the result is eligible for only class and not for ranking.

14 Improvement of Results

A candidate who has passed in all the papers of a semester may be permitted to improve the result by reappearing for the whole examination of that semester. The reappearance may be permitted during the period N+2 years (where N refers to duration of the program) without restricting it to the subsequent examination only. The student may be permitted to apply for improvement examination 45 days in advance of the pertinent semester examination whenever held. If a candidate passes in all the subjects in reappearance, higher of the two aggregate marks secured by the candidate shall be awarded for that semester. In case the candidate fails in the reappearance, candidate shall retain the earlier result.

A candidate who has appeared for improvement examination is eligible for class / CGPA only and not for ranking.

Internal assessment (IA) marks shall be shown separately. A candidate who wants to improve the result or who, having failed, takes the examination again or who has appeared for improvement shall retain the IA marks already obtained.

A candidate who fails in any of the semester examinations may be permitted to take the examinations again at a subsequent appearance as per the syllabus and scheme of examination in vogue at the time the candidate took the examination for the first time. This facility shall be limited to the following two years.

15 Power to Remove Difficulties

Suppose any difficulty arises in giving effect to the provisions of these regulations. In that case, the Vice-Chancellor may by order make such provisions not inconsistent with the Act, Statutes, Ordinances or other Regulations, as appears to be necessary or expedient to remove the difficulty. Every order made under this rule shall be subject to ratification by the Appropriate University Authorities.

| COURSE PATTERN & SCHEME OF EXAMINATION | | | | | | | | | | |
|--|-------------|--|----------------|--------------|---|-----------|-----------|------------------------------|---------------------|----------|
| Semester | Course Code | Course Title | Teaching Hours | Hours / Week | Examination Pattern Max. & Min. Marks / Paper | | | Duration of the Exam (hours) | Total Marks / Paper | Credits |
| | | | | | Theory / Practical | | | | | |
| | | | | | Max. | Min. | IA | | | |
| First | DSC.T-1 | Principles of Geomorphology | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-1 | Geomorphological Mapping Techniques | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-2 | Basics of Cartography | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-2 | Thematic Cartography & Map Projections | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | OE-1.1 | Mathematics for Geography | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | OE-1.2 | Fundamentals of Remote Sensing | | | | | | | | |
| | L1-1.1 | English | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | L2-1.2 | Kannada / Hindi / | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | SEC.S-1 | Cartographic Techniques | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | SEC.V-1 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| | SEC.V-2 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| Second | DSC.T-3 | Introduction to Climatology | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-3 | Interpretation of Weather Maps | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-4 | Physical Geography | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-4 | Interpretation of Topographic Maps | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | OE-2.1 | Spatial Statistics | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | OE-2.2 | Introduction to Geographic Information Systems | | | | | | | | |
| | L1-2.1 | English | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | L2-2.2 | Kannada / Hindi / | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | AECC-1 | Environmental Studies | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | SEC.V-3 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| | SEC.V-4 | | 14 | 1 | | | 25 | 1 | 25 | 1 |

COURSE PATTERN & SCHEME OF EXAMINATION

| Semester | Course Code | Course Title | Teaching Hours | Hours / Week | Examination Pattern Max. & Min. Marks / Paper | | | Duration of the Exam (hours) | Total Marks / Paper | Credits |
|----------|-------------|--|----------------|--------------------|---|------|----|------------------------------|---------------------|--------------------|
| | | | | Theory / Practical | Theory / Practical | | | Theory / Practical | | Theory / Practical |
| | | | | | Max. | Min. | IA | | | |
| Third | DSC.T-5 | Introduction to Oceanography | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-5 | Representation of Oceanographic Features | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-6 | Fundamentals of Human Geography | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-6 | Techniques in Human Geography | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | OE-3.1 | Programming Fundamentals | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | OE-3.2 | Geography of India | | | | | | | | |
| | L1-3.1 | English | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | L2-3.2 | Kannada / Hindi / | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | SEC.S-2 | Utility Mapping | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | SEC.V-5 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| SEC.V-6 | | 14 | 1 | | | 25 | 1 | 25 | 1 | |
| Fourth | DSC.T-7 | Regional Geography of India | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-7 | Representation of Physical Features of India | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-8 | Urban Geography | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSC.P-8 | Techniques in Urban Geography | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | OE-4.1 | Python Programming | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | OE-4.2 | Geography of Karnataka | | | | | | | | |
| | L1-4.1 | English | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | L2-4.2 | Kannada / Hindi / | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | AECC-2 | Constitution of India | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | SEC.V-7 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| SEC.V-8 | | 14 | 1 | | | 25 | 1 | 25 | 1 | |

COURSE PATTERN & SCHEME OF EXAMINATION

| Semester | Course Code | Course Title | Teaching Hours | Hours / Week | Examination Pattern Max. & Min. Marks / Paper | | | Duration of the Exam (hours) | Total Marks / Paper | Credits |
|----------|-------------|--|----------------|--------------|---|------|----|------------------------------|---------------------|---------|
| | | | | | Theory / Practical | | | | | |
| | | | | | Max. | Min. | IA | | | |
| Fifth | DSC.T-9 | Fundamentals of Remote Sensing | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-9 | Interpretation of Satellite Images and Aerial Photos | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-10 | Population Resources & Dynamics | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-10 | Statistical methods in population studies | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-11 | Development of Geographical Thought | 56 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-11 | Analysis of Geographic Data | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | VOC-1 | Mobile Asset Mapping | 42 | 3 | 60 | 25 | 30 | 2 | 100 | 3 |
| | SEC.S-3 | Drone Mapping | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | SEC.V-9 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| | SEC.V-10 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| Sixth | DSC.T-12 | Environmental Geography | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-12 | Instruments for measuring weather elements | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-13 | Fundamentals of Geographic Information Systems | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-13 | GIS for map-making | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-14 | Basics of Natural Disasters | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | VOC-1 | Open-Source GIS | 42 | 3 | 60 | 25 | 30 | 2 | 100 | 3 |
| | SEC.S-4 | Basics of R – Programming | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | DSE.INT-1 | Internship | 28 | 2 | 30 | 9 | 20 | 2 | 50 | 2 |
| | SEC.V-11 | | 14 | 1 | | | 25 | 1 | 25 | 1 |
| | SEC.V-12 | | 14 | 1 | | | 25 | 1 | 25 | 1 |

COURSE PATTERN & SCHEME OF EXAMINATION

| Semester | Course Code | Course Title | Teaching Hours | Hours / Week | Examination Pattern Max. & Min. Marks / Paper | | | Duration of the Exam (hours) | Total Marks / Paper | Credits |
|-----------|----------------------|--|----------------|--------------------|---|------|----|------------------------------|---------------------|--------------------|
| | | | | Theory / Practical | Theory / Practical | | | Theory / Practical | | Theory / Practical |
| | | | | | Max. | Min. | IA | | | |
| Seventh | DSC.T-15 | Advanced Geomorphology | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-15 | Techniques in Watershed Analysis | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-16 | Advanced Climatology | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-16 | Climatic Data Analysis | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-17 | Geo-surveying | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-1.1 | Settlement Geography | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-1.2 | Spatial Database Managements | | | | | | | | |
| | DSE-1.3 | Disaster Forecasting and Planning | | | | | | | | |
| | DSE-2.1 | Cultural Geography | 42 | 3 | 60 | 25 | 30 | 2 | 100 | 3 |
| | DSE-2.2 | Geoinformatics for Watershed Analysis | | | | | | | | |
| | DSE-2.3 | Hydro-Meteorological Hazards | | | | | | | | |
| RM-1 | Research Methodology | 42 | 3 | 60 | 25 | 30 | 2 | 100 | 3 | |
| Eighth | DSC.T-18 | Sustainable Soil Resource Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-18 | Soil Mapping Techniques | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-19 | Agriculture & Food Security | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-19 | Agriculture Mapping Techniques | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-20 | Climate Change: Vulnerability and Adaptation | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSE-3.1 | Political Geography | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-3.2 | Landscape Ecology and Landuse Planning | | | | | | | | |
| | DSE-3.3 | Coastal Hazards Management | | | | | | | | |
| | DSE-4.1 | Karnataka Geography | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-4.2 | Geoinformatics for Coastal Zone Management | | | | | | | | |
| | DSE-4.3 | Land Degradation & Desertification | | | | | | | | |
| | OR | | | | | | | | | |
| | DSC.RP-1 | Research Project | 84 | 6 | 75 | 25 | 75 | 2 | 150 | 6 |
| | DSC.FV-1 | Field Visit | 56 | 4 | 50 | 18 | 50 | 2 | 100 | 4 |
| DSC.ST-1 | Study Tour | 56 | 4 | 50 | 18 | 50 | 2 | 100 | 4 | |
| DSC.INT-2 | Internship | 84 | | 75 | 25 | 75 | 2 | 150 | 6 | |

| COURSE PATTERN & SCHEME OF EXAMINATION | | | | | | | | | | |
|---|----------------|--|----------------|--------------|---|------|------|------------------------------|---------------------|---------|
| Semester | Course Code | Course Title | Teaching Hours | Hours / Week | Examination Pattern Max. & Min. Marks / Paper | | | Duration of the Exam (hours) | Total Marks / Paper | Credits |
| | | | | | Theory / Practical | | | | | |
| | | | | | Theor y / Practi cal | Max. | Min. | | | IA |
| Ninth | DSC.T-21 | Sustainable Water Resource Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-21 | Water Resource Mapping | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.T-22 | Sustainable Forest Resource Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.P-22 | Forest Resource Mapping Techniques | 56 | 4 | 30 | 9 | 20 | 2 | 50 | 2 |
| | DSC.T-23 | Regional Planning & Development | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | | | | | | | | | | |
| | DSE-6.1 | Trade & Transport Geography | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-6.2 | Tourism Geography | | | | | | | | |
| | DSE-6.3 | Biogeography | | | | | | | | |
| OE-5 | Climate Action | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 | |
| With the Specialization of Geoinformatics | | | | | | | | | | |
| Ninth | DSC.GI.T-21 | Remote Sensing for Water Resource Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.GI.P-21 | Water Resource Mapping | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.GI.T-22 | Geographic Information Systems for Soil Resource Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.GI.P-22 | Soil Resource Mapping Techniques | 56 | 4 | 30 | 9 | 20 | 2 | 50 | 2 |
| | DSC.GI.T-23 | GIS Customization | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | DSE-GI.6.1 | Geoinformatics for Forest Resource Management / | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-GI.6.2 | Web-GIS | | | | | | | | |
| | OE-GI.5 | Climate Action | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| With the Specialization of Natural Disaster Management | | | | | | | | | | |
| Ninth | DSC.NDM.T-21 | Geospatial Applications for Disaster Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.NDM.P-21 | GA for Disaster Management | 56 | 4 | 25 | 9 | 25 | 2 | 50 | 2 |
| | DSC.NDM.T-22 | Geoinformatics for Biological Disasters and Public Health Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSC.NDM.P-22 | Biological Disaster & Public Health | 56 | 4 | 30 | 9 | 20 | 2 | 50 | 2 |
| | DSC.NDM.T-23 | Disaster Risk Reduction & Response | 56 | 4 | 60 | 21 | 40 | 2 | 100 | 4 |
| | | | | | | | | | | |
| | DSE-NDM-6.1 | Policy, Institution, Governance for Disaster Management | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 |
| | DSE-NDM-6.2 | Geoinformatics for Drought Monitoring in India | | | | | | | | |
| OE-NDM-5 | Climate Action | 42 | 3 | 60 | 21 | 40 | 2 | 100 | 3 | |
| Common for Geography, Geoinformatics & Natural Disaster Management | | | | | | | | | | |
| Tenth | DSC.RP-1 | Research Project | 84 | 6 | 75 | 27 | 75 | 2 | 150 | 6 |
| | DSC.FV-1 | Field Visit | 56 | 4 | 50 | 18 | 50 | 2 | 100 | 4 |
| | DSC.ST-1 | Study Tour | 56 | 4 | 50 | 18 | 50 | 2 | 100 | 4 |
| | DSC.INT-2 | Internship | 84 | 6 | 75 | 27 | 75 | 2 | 150 | 6 |
