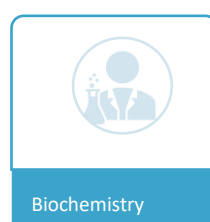
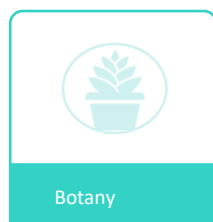
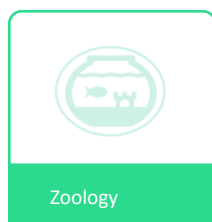
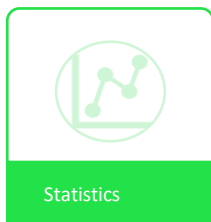
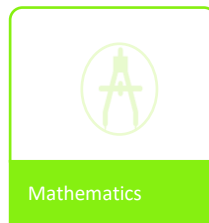
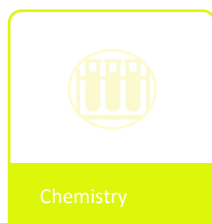
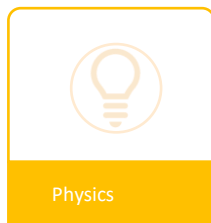


PROGRAMME PROJECT REPORT

Bachelor of Science Programme (3 Year Programme in accordance with NEP-2020)



॥ वास्तविकी नः शुद्धता प्रयत्नकाल् ॥

SCHOOL OF SCIENCES
U. P. Rajarshi Tandon Open University
Prayagraj

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1. Bachelor's Degree Programme

The National Education Policy (NEP) 2020 envisions a new vision that enable an individual to study one or more specialized areas of interest at a deep level, and also develop capabilities across a range of disciplines including sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects. The NEP 2020 focuses on the formulation of expected learning outcomes for all higher education programmes. It states that “National Higher Education Qualifications Framework (NHEQF)” shall be align with the National Skills Qualifications Framework (NSQF) to ease the integration of vocational education into higher education. It also points out that higher education qualifications leading to a degree/diploma/certificate shall be described by the NHEQF in terms of Outcome Based Education (OBE).

The design of B.Sc. under UGC Choice Based Credit System (CBCS) programme in line with NHEQF offers opportunities and avenues to learn core subjects but also to explore additional avenues of learning beyond the core subjects for holistic development of a learner.

Programme:	Bachelor of Science [B.Sc.]		
Year	First Introduction year: 2002		
Revision of Programme in accordance with NEP-2020			
Initiation year of revision		2022	
Completion year of revision		2023	

The salient advantages of the choice-based credit system are as follows:

- CBCS allows learner to choose inter-disciplinary, intra-disciplinary courses, skill-oriented courses (even from other disciplines according to their learning needs, interests and aptitude) and have more flexibility.
- CBCS offers flexibility for learner to study at different times and at different institutions to complete one course (ease of mobility of learner). Credits earned at one institution can be easily transferred to other universities.
- Learner may undertake as many credits as they can cope with without repeating all the courses in a given semester if they fail in one/more courses.
- Shift in focus from the teacher-centric to learner-centric education.

The uniform grading system will also enable potential employers in assessing the performance of the learner. In order to bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on learner's performance in examinations, guidelines framed by the UGC are followed. Hence, adoption of NHEQF helps to overcome the gap between university degree and employability by introducing skills and competencies in the graduates.

2. B.Sc. Programme

The structure and duration of undergraduate programme of Bachelor of Science in accordance with NEP 2020 includes multiple exit options within this period, with appropriate certifications:

- Level 4.5: a **certificate** after completing 1 year (2 semesters) of study in the chosen discipline or field, including vocational and professional areas;
- Level 5: a **diploma** after 2 years (4 semesters) of study;

- Level 5.5: a **Bachelor's** degree after a 3-year (6 semesters) programme.

2.1 Programme Mission & Objectives

In line with the mission of the University to provide flexible learning opportunities to all, particularly to those who could not join regular colleges or universities owing to social, economic and other constraints, the 3-year Undergraduate Programme in Science, B.Sc. aims at providing holistic and valuebased knowledge and guidance to promote scientific temper in everyday life. The program offers a platform to the learners to fulfill the eligible criteria in various scientific jobs in government and private sector.

The Programme aims at the following objectives:

1. To provide a sound academic base from which an advanced career in science can be developed.
2. To provide basic understanding about science among learners.
3. To develop academically competent and professionally motivated personnel, equipped with objective, critical thinking, right moral and ethical values that compassionately foster scientific temper with a sense of social responsibility.
4. To enable learner to become globally competent.
5. To inculcate entrepreneurial skills among learners.

2.2 Relevance of the Programme with Mission and Goals

The 3-year Undergraduate Programme in Science, B.Sc. is designed with the objective of equipping learners to cope with the emerging trends and challenges in the scientific domain. In congruence with goals of the University the Programme also focuses to provide skilled manpower to the society to meet global demands. The Programme is designed with three major subjects so that a successful learner can go for higher studies in any one of the major subjects of his/ her choice. The Programme also aims at making the learners fit for taking up various jobs.

2.3 Nature of Prospective Target Group of Learners

The Program is targeted to all individuals looking to earn a graduation degree for employment, further higher education, promotion in career and professional development.

2.4 Appropriateness of Programme to be conducted in ODL mode to acquire specific skills & competence

Learning outcomes after Level 5		
Learning Outcomes	Elements of the descriptor	Level 5 (Undergraduate Certificate)
LO 1	Knowledge and understanding	• knowledge of facts, concepts, principles, theories, and processes in multidisciplinary areas in science. • understanding of the linkages between various disciplines.
LO 2	Skills required to perform and accomplish tasks	• acquire cognitive and technical skills for selecting and using relevant methods, tools, and materials to assess the appropriateness of approaches to solving problems associated with the science.
LO 3	Application of knowledge and skills	• apply the acquired knowledge, and a range of cognitive and practical skills to select and use basic methods, tools, materials, and information to generate solutions to specific problems relating to

		the science.
LO 4	Generic learning outcomes	• listen carefully, read texts related to the science analytically and present information in a clear and concise manner. • express thoughts and ideas effectively in writing and orally and present the results/findings of the experiments carried out in a clear and concise manner to different groups. • meet own learning needs relating to the science. • pursue self-directed and self-managed learning to upgrade knowledge and skills required to pursue higher level of education and training. • gather and interpret relevant quantitative and qualitative data to identify problems, • critically evaluate the essential theories, policies, and practices by following scientific approach to knowledge development and take actions to generate solutions to specific problems associated with the science. • make judgement and take decision, based on analysis of data and evidence, for formulating responses to issues/problems associated with the science.
LO 5	Constitutional, humanistic, ethical and moral values	• embrace constitutional, humanistic, ethical, and moral values and practice these values in real-life situations.
LO 6	Employment ready skills, and entrepreneurship skills and mindset	• perform effectively in a defined job relating to the science. • ability to exercise responsibility for the completion of assigned tasks.

Learning outcomes after Level 6		
Learning Outcomes	Elements of the descriptor	Level 6 (Undergraduate Diploma)
LO 1	Knowledge and understanding	• theoretic al and technical knowledge in multidisciplinary contexts, • deeper knowledge and understanding of one of the learning areas and its underlying principles and theories, • procedural knowledge required for performing skilled or paraprofessional tasks associated with the chosen fields of learning.
LO 2	Skills required to perform and accomplish tasks	• cognitive and technical skills required for performing and accomplishing complex tasks relating to the chosen fields of learning. • cognitive and technical skills required to analyse and synthesize ideas and information from a range of sources. • act on information to generate solutions to specific problem s associated with the chosen fields of learning.

LO 3	Application of knowledge and skills	• apply the acquired specialized or theoretical knowledge, and a range of cognitive and practical skills to gather quantitative and qualitative data,
LO 4	Generic learning outcomes	• listen carefully, read texts analytically and present complex information in a clear and concise manner, • communicate in writing and orally the information, arguments, and results of the experiments and studies conducted accurately and effectively. • critically evaluate the essential theories, policies, and practices by following scientific approach to knowledge development. • make judgement and take decision, based on the analysis and evaluation of information, for determining solutions to a variety of unpredictable problems.
LO 5	Constitutional, humanistic, ethical and moral values	• embrace constitutional, humanistic, ethical, and moral values, and practice these values in life,
LO 6	Employment ready skills, and entrepreneurship skills and mindset	• take up job/employment or professional practice requiring the exercise of full personal responsibility for the completion of tasks and for the outputs of own work. • exercise self- management within the guidelines of study and work contexts. • supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.

Learning outcomes after Level 7		
Learning Outcomes	Elements of the descriptor	Level 7 (Bachelor in Science)
LO 1	Knowledge and understanding	• comprehensive, factual, theoretical, and specialized knowledge in multidisciplinary contexts with depth in the underlying principles and theories. • knowledge of the current and emerging issues and developments.
LO 2	Skills required to perform and accomplish tasks	• cognitive and technical skills required for performing and accomplishing complex tasks to evaluate and analyse complex ideas. • cognitive and technical skills required to generate solutions to specific problems.
LO 3	Application of knowledge and skills	• apply the acquired specialized technical or theoretic alknowledge, and cognitive and practical skills to gather and analyse quantitative/ qualitative data to assess the appropriateness of different approaches to solving problems,
LO 4	Generic learning outcomes	• listen carefully, to read text related to the chosen fields of learning analytically and present complex information in a clear and concise manner to different groups/audiences. • communicate in writing and orally the constructs and methodologies adopted for the studies undertaken relating to the

		chosen fields of learning, • critically evaluate evidence for taking actions to generate solutions to specific problems based on empirical evidence. • make judgement and take decisions based on the analysis and evaluation of information for formulating responses to problems, including real-life problems,
LO 5	Constitutional, humanistic, ethical and moral values	• embrace the constitutional, humanistic, ethical, and moral values, and practice these values in life. • identify ethical issues in science, • formulate coherent arguments about ethical and moral issues, including environmental and sustainable development issues. • follow ethical practices in all aspects of research and development
LO 6	Employment ready skills, and entrepreneurship skills and mindset	• knowledge and essential skills set and competence that are necessary to: take up a professional job and professional practice, • entrepreneurship skills and mindset required for setting up and running an economic enterprise or pursuing self-employment • exercise management and supervision in the contexts of work or study activities involving unpredictable work processes and working environment

2.5 Instructional Design

2.5.1 3-year B.Sc. Programme Structure

The University follows the credit system in all its programmes. One credit is equal to 30 hours of learner's study time which is equivalent to 15 lectures in conventional system. To earn a Bachelor's Degree, a learner has to earn 120 credits in minimum six semesters (three years) with 20 credits per semester. For earning 120 credits, a learner has to opt from the following categories of courses:

- Discipline Specific Core Courses
- Discipline Specific Electives Courses (DEC)
- Ability Enhancement Compulsory Courses (AECC)
- Skill Enhancement Courses (SEC)

Programme Structure of B.Sc. Programme under NHEQF

Level	Year	Sem	First Selected Subject	Second Selected Subject	Third Selected Subject	Ability Enhancement Compulsory Course (AECC)	Skill Enhancement Course (SEC)	Discipline Specific Elective Course (DEC)	Literature Survey/ Research Project	Total credit
			Discipline SpecificCore papers with credit	Discipline SpecificCore papers with credit	Discipline SpecificCore papers with credit					
4.5	1	1 st	4	4	4	4	4	-	-	20
		2 nd	4	4	4	4	4	-	-	20
5	2	3 rd	4	4	4	4	4	-	-	20
		4 th	4	4	4	4	4	-	-	20
5.5	3	5 th	-	-	-	-	4	12	4	20
		6 th	-	-	-	-	4	12	4	20
Total credit			16	16	16	16	24	24	8	120

Explanation of terms used for categorization of courses:

- A. **Discipline Specific Core Courses:** A course, which should compulsorily be studied by a learner as a core requirement is termed as a Core course.
- B. **Elective Course (DE):** Generally, a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course. The Elective course may be offered in following types:
- a) **Discipline Specific Elective Course (DCE):** Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective.
 - b) **Industrial Training/ Survey/ Research Project/ Field Work/Apprenticeship/ Dissertation/Internship:** An elective course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a learner studies such a course on his own with an advisory support by a counsellor/faculty member. Currently, Literature survey and Research Project in 5th and 6th semester respectively is offered under code; **LS101N** and **RP102N**.
 - c) **Generic Elective (GE) Course:** An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective. In B.Sc. programme presently we are not offering any such course.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

- C. **Ability Enhancement Compulsory Courses (AECC):** AECC may be of two kinds: Ability Enhancement Courses (AEC) and Skill Enhancement Courses (SEC). "AECC" courses are the courses based upon the content that leads to knowledge enhancement. SEC courses are value-based and/or skillbased and are aimed at providing hands-on-training, competencies and skills.

(a) **Ability Enhancement Courses (AEC):** English Communication/Hindi Communication, Human Rights and Duties/Health & Hygiene, Environmental Science/Solid Waste Management, Disaster Management/Nutrition for Community.

Semester	Ability Enhancement Courses (AECC)
1	Ability Enhancement Course in English [AECEG] OR Ability Enhancement Course in Hindi [AECHD]
2	Ability Enhancement Course in Human Rights and Duties [AECHRD] OR Ability Enhancement Course in Health & Hygiene [AECHH]
3	Ability Enhancement Course in Environment Awareness [AECEA] OR Ability Enhancement Course in Solid Waste Management [AESWM]
4	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]

(b) **Skill Enhancement Courses (SEC):** These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge. In B.Sc. programme. Presently we are not offering options to choose from pool, however courses are fixed for respective semesters.

It is mandatory for every learner to offer any combination of subjects listed below to complete his/her program for the degree. Total credits allotted against each course of all three subjects together with AECC and SEC will be 120 distributed in 06 semesters (three years) separately.

The List of Skill Enhancement courses offered in B.Sc. programme is given below:

Course Code	Skill Enhancement Courses	Credit	Semester
SBSEVS-01N	Energy Resources and Green Technology	4	1
SBSEVS-02N	Environmental Impact Assessment and Legislation	4	2
SBSCH-02N	Advance Analytical Chemistry	4	2
SBSCS-02N	Python Programming	4	2
SBSCH-01N	Organic Chemistry II (Advance Organic Chemistry)	4	3
SBSCS-01N	Discrete Mathematics	4	3
SBSBCH-01N	Bio-analytical techniques	4	3
SBSZY-02N	Fundamental of Animal Behavior	4	4
SBSPHS-02N	Modern physics	4	4
SBSBY-02N	Ecology	4	4
SBSMM-03N	Elementary Analysis	4	5
SBSZY-03N	Economic zoology and environmental biology	4	5
SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge	4	6

Combinations of undergraduate science programs:

The learner has to offer any one of the following combinations:

Life Science Group	Physical Science Group
BZC: Botany, Zoology, Chemistry	PCM: Physics, Chemistry, Mathematics
BCEVS: Botany, Chemistry, Environmental Science	PCS: Physics, Chemistry, Statistics
BZEVs: Botany, Zoology, Environmental Science	PMCs: Physics, Mathematics, Computer Science
ZCEVS: Zoology, Chemistry, Environmental Science	PMS: Physics, Mathematics, Statistics
	PSCs: Physics, Statistics, Computer Science
	MSCs: Mathematics, Statistics, Computer Science
	PCEVS: Physics, Chemistry, Environmental Science
	PCsEVs: Physics, Computer Science, Environmental Science
	PSEVS: Physics, Statistics, Environmental Science
	PMEVS: Physics, Mathematics, Environmental Science

- A learner has to study and pass the 20 credits each from the three selected **Core Course** (subjects) in the first and second year.
- The learner has to choose and study one paper out of AECEG or ACEHD in first semester, AECHRD or AECHH in second semester, AECEA or AECSWM in third semester and AECNC or AECDM in fourth semester, each of 4 credits under **Ability Enhancement Compulsory Courses**.
- Under **Skill Enhancement Courses**, it is compulsory to study 24 credit papers from 1st to 6th semester.
- The learner has to choose any two groups among A, B, C, D, E, F, G, and H from **Discipline Specific Elective Course** in each selected subject in fifth and sixth semester. The Selection criterion for **Discipline Specific Elective Course (DEC)** for 5th and 6th Semester is given below:

Subjects/ semester	Physics (Group A)		Chemistry (Group B)		Mathematics (Group C)		Computer Science (Group D)		Statistics (Group E)		Botany (Group F)		Zoology (Group G)		Environmental Science (Group H)	
	Paper code	credit	Paper code	credit	Paper code	credit	Paper code	credit	Paper code	credit	Paper code	credit	Paper code	credit	Paper code	credit

5 th Semester	DECPHS -105N	2	DECCH E -105N	2	DECM -109N	2	DECCS -105N	2	DECSTA T -105N	2	DECBY -105N	2	DECZY -105N	2	DECEV S-105N	2
	DECPHS -106N	2	DECCH E -106N	2	DECM -110N	2	DECCS -106N	2	DECSTA T -106N	2	DECBY -106N	2	DECZY -106N	2	DECEV S -106N	2
	DECPHS -107N(P)	2	DECCH E-107N(P)	2	DECM -111N(P)	2	DECCS-107N(P)	2	DECSTA T-107N(P)	2	DECBY 107N(P)	2	DECZY 107N(P)	2	DECEV S-107N(P)	2
6 th Semester	DECPHS -108N	2	DECCH E -108N	2	DECM -112N	2	DECCS -108N	2	DECSTA T-108N	2	DECBY -108N	2	DECZY -108N	2	DECEV S-108N	2
	DECPHS -109N	2	DECCH E -109N	2	DECM -113N	2	DECCS -109N	2	DECSTA T -109N	2	DECBY -109N	2	DECZY -109N	2	DECEV S-109N	2
	DECPHS -110N(P)	2	DECCH E-110N(P)	2	DECM -114N(P)	2	DECCS-110N(P)	2	DECSTA T-110N(P)	2	DECBY 110N(P)	2	DECZY 110N(P)	2	DECEV S-110N(P)	2

In this way, the learner must complete his 40credit in the first year, 40credit in the second year and 40credits in the third year totaling of 120 credits.

2.5.2 Course curriculum:The details of syllabus is given in Appendix-I

2.5.3 Language of Instruction:SLM will be provided in English. However, learner can write assignment and give Term End Examination (TEE) either in Hindi or English.

2.5.4 Duration of the Programme

Minimum duration in years: 03

Maximum duration in years: 06

2.5.5 Faculty & Support Staff requirement

Professor (3), Associate Professor (1), Assistant Professor (9) and support staff (3)

2.6 Instructional Delivery Mechanisms

The Open University system is more learner-oriented, and the student is an active participant in the teaching-learning process. Most of the instructions are imparted through distance rather than face-to-face communication.

The University follows a multi-media approach for instruction. It comprises of:

- self-instructional printed material (Self Learning Material)
- audio and video lectures
- face-to-face counselling
- assignments
- laboratory work
- Project work in some courses
- teleconference/web conference
- Web Enabled Academic Support Portal

2.6.1 Self-Learning Material

The Self Learning Material (SLMs)are prepared in line with the UGC guidelines on preparation of SLMs. The prepared study materials are self-instructional in nature.

The course material is divided into blocks. Each block contains a few units. Lessons, which are called Units, are structured to facilitate self-study. The units of a block have similar nature of contents. The first page of each block indicates the numbers and titles of the units comprising the block. In the first block of each course, we start with course introduction. This is followed by a brief introduction to the block. After the block introduction, emphasis is given on contribution of ancient Indian knowledge into that specific course. Next, each unit begins with an introduction totalk about the contents of the unit. The list of objectives are outlined to expect the learning based outcome after working through the unit. This is

followed by the main body of the unit, which is divided into various sections and sub-sections. Each unit is summarized with the main highlights of the contents.

Each unit have several “Check Your Progress” Questions and Terminal Questions /exercises. These questions help the learner to assess his/her understanding of the subject contents. At the end of units,additional references/books/suggested online weblink for MOOCs/Open Educational Resources for additional reading are suggested.

2.6.2 Audio and Video lectures

Apart from SLM, audio and video lectures have been prepared for some courses. The audio-video material is supplementary to print material. The video lectures are available at YouTube channel of university

2.6.3 Counselling Classes

The face to face (F2F) counselling classes are conducted at head quarter and study centers. The purpose of such a contact class is to answer some of questions and clarify the doubts of learner which may not be possible through any other means of communication. Well experienced counsellors at study centers provide counselling and guidance to the learner in the courses that (s)he has chosen for study. The counselling sessions for each of the courses will be held at suitable intervals throughout the whole academic session. The time table for counselling classes are displayed at head quarter as well as by the coordinator of study center, however, attending counselling sessions is not compulsory. It is noted that to attend the counselling sessions, learner has to go through the course materials and note down the points to be discussed as it is not a regular class or lectures.

2.6.4 Assignments

The purpose of assignments is to test the comprehension of the learning material that learner receives and also help to get through the courses by providing self-feedback to the learner. The course content given in the SLM will be sufficient for answering the assignments.

Assignments constitute the continuous evaluation component of a course. The assignments are available at the SLM section of the home page of university website. In any case, learner has to submit assignment before appearing in the examination for any course. The assignments of a course carry 30% weightage while 70% weightage is given to the term-end examination (TEE). The marks obtained by learner in the assignments will be counted in the final result. Therefore, It is advised to take assignments seriously. However, there will be no written assignments for Lab courses.

2.6.5 Laboratory Work

Laboratory courses are an integral component of the B.Sc. programme. While designing the curricula for laboratory courses, particular care has been taken to weed out experiments not significant to the present-day state of the discipline. Importance has been given to the utility of an experiment with respect to real life experience, development of experimental skills, and industrial applications. It is planned to phase the laboratory courses during suitable periods (such as summer or autumn vacations) so that in-service persons can take them without difficulty. Laboratory courses worth 2 credits will require full-time presence of the student at the Study Centre for one week continuously. During this time a student has to work for around 60 hours. Around 40 hours would be spent on experimental work and the remaining time will be used for doing calculations, preparations of records, viewing or listening to the video/audio programmes.

2.6.6 Teleconference/Web conference

Teleconference/web conference, using done through ZOOM/webex in form of online special counselling sessions is another medium to impart instruction to and facilitate learning for a distance learner. The students concerned would be informed about the teleconferencing schedule and the place where it is to be conducted by sending bulk SMS.

2.6.7 Web Enabled Academic Support Portal

The University also provide Web Enabled Academic Support Portal to access the course materials, assignments, and other learning resources.

2.6.8 Learner Support Service Systems

(a) Study Centre

A Study Centre has following major functions:

- (i) **Counselling:** Counselling is an important aspect of Open University System. Face to face contact-cum-counselling classes for the courses will be provided at the Study Centre. The detailed programme of the contact-cum-counselling sessions will be sent to the learner by the Coordinator of the Study Centre. In these sessions learner will get an opportunity to discuss with the Counsellors his/her problems pertaining to the courses of study.
- (ii) **Evaluation of Assignments:** The evaluation of Tutor Marked Assignments (TMA) will be done by the Counsellors at the Study Centre. The evaluated assignments will be returned to the learner by the Coordinator of Study Centre with tutor comments and marks obtained in TMAs. These comments will help the learner in his/her studies.
- (iii) **Library:** Every Study Centre will have a library having relevant course materials, reference books suggested for supplementary reading prepared for the course(s).
- (iv) **Information and Advice:** The learner will be given relevant information about the courses offered by the University. Facilities are also provided to give him/her guidance in choosing courses.
- (v) **Interaction with fellow-students:** In the Study Centre learner will have an opportunity to interact with fellow students. This may lead to the formation of self-help groups.

(b) Learner Support Services (LSS)

The University has formed an LSS cell at the head quarter. The LSS cell coordinate with the Study Centre to get rid of any problem faced by the learner.

2.7 Procedure for admissions, curriculum transaction and evaluation

2.7.1 Admission Procedure

- (a) The detailed information regarding admission will be given on the UPRTOU website and on the admission portal. Learners seeking admission shall apply online.
- (b) Direct admission to 3-year B.Sc. program is offered to the interested candidates.
- (c) **Eligibility:** The candidate should pass the 10+2 level with science group. To opt B.Sc. life science combination, candidate should pass 10+2 with Biology and to opt for B.Sc. Physical Science combination, candidate should pass 10+2 with Mathematics.

2.7.2 Programme Fee: Rs. 8000 / year. The fee is deposited through online admission portal only.

2.7.3 Evaluation

The evaluation consists of two components: (1) continuous evaluation through assignments, and (2) term-end examination. Learner must pass both in continuous evaluation as well as in the term-end examination of a course to earn the credits assigned

to that course. For each course there shall be one written Terminal Examination. The evaluation of every course shall be in two parts that is 30% internal weightage through assignments and 70% external weightage through terminal exams.

(a) Theory course **Max. Marks**

Terminal Examination 70

Assignment 30

Total 100

(b) Practical course: **Max. Marks**

Terminal Practical Examination 100

Marks of Terminal Practical Examinations shall be awarded as per following scheme:

i. Write up /theory work 30

ii. Viva-voce 30

iii. Execution/Performance/Demonstration 20

iv. Lab Record 20

The following 10-Point Grading System for evaluating learners' achievement is used for CBCS programmes:

10-Point Grading System in the light of UGC-CBCS Guidelines

Letter Grade	Grade Point	% Range
O (Outstanding)	10	91-100
A+ (Excellent)	9	81-90
A (Very Good)	8	71-80
B+ (Good)	7	61-70
B (Above Average)	6	51-60
C (Average)	5	41-50
P (Pass)	4	36-40
NC (Not Completed)	0	0-35
Ab (Absent)	0	
Q	Qualified	Applicable only for Non-Credit courses
NQ	Not Qualified	

Learner is required to score at least a 'P' grade (36% marks) in both the continuous evaluation (assignments) as well as the term-end examination. In the overall computation also, learner must get at least a 'P' grade in each course to be eligible for the B. Sc. degree.

Computation of CGPA and SGPA

(a) Following formula shall be used for calculation of CGPA and SGPA

For jth semester $SGPA (S_j) = \sum (C_i * G_i) / \sum C_i$	where, C_i = number of credits of the i th course in j th semester G_i = grade point scored by the learner in the i th course in j th semester.
$CGPA = \sum (C_j * S_j) / \sum C_j$	where, S_j = SGPA of the j th semester C_j = total number of credits in the j th semester

The CGPA and CGPA shall be rounded off up to the two decimal points. (For e.g., if a learner obtained 7.2345, then it will be written as 7.23 or if s(he) obtained 7.23675 then it be will written as 7.24)

CGPA will be converted into percentage according to the following formula:

$$\text{Equivalent Percentage} = \text{CGPA} * 9.5$$

(b) Award of Division

The learner will be awarded division according to the following table:

Division	Classification
1 st Division	6.31 or more and less than 10 CGPA
2 nd Division	4.73 or more and less than 6.31 CGPA
3 rd Division	3.78 or more and less than 4.73 CGPA

2.7.4 Multiple Entry and Multiple Exit options

The 3-year B.Sc. programme is an Outcome-Based Education (OBE) for qualifications of different types. The qualification types and examples of title/nomenclature for qualifications within each type are indicated in Table 1.

Table 1				
Level	Qualification title	Programme duration	Entry Option	Exit option
4.5	Undergraduate Certificate in Science	Programme duration: First year (first two semesters) of the B.Sc. programme	10+2 level with science group	Exit module of 4 credits subject to achieving the prescribed learning outcomes determined by successful assessment before being awarded UG Certificate. The total credits earned by this student/learner in this case will 44
5	Undergraduate Diploma in Science	Programme duration: First two years (first four semesters) of the of the B.Sc. programme	Undergraduate Certificate obtained after completing the first year (two semesters) of the B.Sc. programme	Exit module of 4 credits subject to achieving the prescribed learning outcomes determined by successful assessment before being awarded UG Certificate. The total credits earned by this student/learner in this case will 44

Exit requirements from Level 4.5 to Level 5

NCrF Level	Year	Min. Credits	Entry-Exit Mechanism	Required Bridge Course of 10 credit to exit from each Level			Award of Certificate/Diploma/Degree
Level 4.5	1	40	Entry: Grade 12 or equivalent Exit module of 4-credit skills-enhancement course. The total credits earned by this student/learner in this case will 44	courses	Credits	Duration	Undergraduate Certificate (in the field of learning/discipline)
				4-credit skills-enhancement course (internship/apprenticeship)	4	02 months	
Level 5	2	40	Entry from Level 4.5: Exit module of 4-credit skills-enhancement course. The total credits earned by	courses	Credits	Duration	Undergraduate Diploma (in the field of learning/discipl
				4-credit skills-enhancement course (internship/	4	02 months	

			this student/learner in this case will 44	apprenticeship)			ine)
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Norms for 4- credit skill enhancement course:

Under each exit option from Level 4.5 to 5, the learner can choose organization (Private/State Govt/Central Govt.) for internship/apprenticeship to complete 4-credit skills-enhancement course as provided by the University. After successful completion, he/she submit the certificate obtained from organization to the Training & Placement Office of the University to get Undergraduate certificate/diploma for successful completion. The monitoring of such learners shall be done by T & P Cell.

Level	Bridge course/ 10 credit				Concerned Person to contact
	Course Code / 4 credit	Job specific Course Title	Internship Domain Area/ 6 credit		
4.5	BCOT-01	Office Tools	DTP Publishing		In-charge, Training & Placement Cell
5	BCCPLT-02	CPLT	Laboratory Technique		

2.8 Requirement of the laboratory support and Library Resources

The practical sessions are held in the science laboratories of the Study Centre. In these labs, the learner will have the facility to use the equipment and consumables relevant to the syllabus. The SLM, supplementary text audio and video material of the various courses of the program is available through the online study portal of the University. The University also have a subscription of National Digital Library to provide the learners with the ability to enhance access to information and knowledge of various courses of the programme.

2.9 Cost estimate of the programme and the provisions

3-year B.Sc. programme consists of 111 courses and 20 laboratory courses. One course is of 2 credits which consists of approx. 10 units. The total approximated expenditure on the development of 111 courses is:

S. No.	Item	Cost per Unit (writing & editing)	Total cost (Rs.)
1	Total no. of units in 111 courses = 1110	4500	495000
2	BOS Meetings, etc.	300000	300000
Total			525000

2.10 Quality assurance mechanism and expected programme outcomes

(a) **Quality assurance mechanism:** The program structure is developed under the guidance of the Board of studies comprising external expert members of the concerned subjects followed by the School board. The program structure and syllabus is approved by the Academic Council of the University. The course structure and syllabus is reviewed time to time according to the feedback received from the stakeholders and societal needs.

The Centre for Internal Quality Assurance will monitor, improve and enhance effectiveness of the program through the following:

- ✓ Annual academic audit

- ✓ Feedback analysis for quality improvement
- ✓ Regular faculty development programs
- ✓ Standardization of learning resources
- ✓ Periodic revision of program depending upon the changing trends by communicating to the concerned school

(b) Expected programme outcomes (POs)

Knowledge and understanding	PO1	Demonstrate a fundamental/coherent understanding of the academic field of science, its different learning areas and applications, and its linkages with related disciplinary areas/subjects
Skills related to specialization	PO 2	Demonstrate skills involving the constructive use of knowledge in the subfields of physical and life science, and other related fields of science in a range of settings, including for pursuing higher studies related to the science.
Application of knowledge and skills	PO 3	Identify and apply appropriate principles and methodologies to solve different types of problems with well-defined solutions.
	PO 4	Apply knowledge of typical and atypical development across the lifespan of an individual
Generic learning outcomes	PO 5	Communicate accurately the findings of the experiments/investigations while relating the conclusions/findings to relevant theories of science.
	PO 6	Read texts and research papers analytically and present complex information and the findings of the experiments/investigations while relating the conclusions to relevant courses in science.

B.Sc. Programme: [Subject Name: Botany]

Year	Sem.	Course Code	Paper Title	Theory/Practical	Max. Marks.	Credits
1	I	UGBY-101(N)	Cytology and Genetic	Theory	100	2
	I	UGBY-101(N) (P)	Practical Work	Practical Work	100	2
	II	UGBY-102(N)	Plant Physiology	Theory	100	2
	II	UGBY-102(N) (P)	Practical Work	Practical Work	100	2
2	III	UGBY-103(N)	Plant Diversity-I	Theory	100	2
	III	UGBY-103(N) (P)	Practical Work	Practical Work	100	2
	IV	UGBY-104(N)	Plant Diversity-II	Theory	100	2
	IV	UGBY-104(N) (P)	Practical Work	Practical Work	100	2
	Skill Enhancement Course					
	IV	SBSBY-02(N)	Ecology	Theory	100	4
	Discipline Centric Elective Course					
	V	DCEBY -105(N)	Embryology and Morphogenesis	Theory	100	2

3	V	DCEBY-106(N)	Plant Pathology and Microbiology	Theory	100	2
	V	DCEBY-107(N) (P)	Practical Work	Practical Work	100	2
	Discipline Centric Elective Course					
	VI	DCEBY-108(N)	Molecular Genetics and biotechnology	Theory	100	2
	VI	DCEBY-109(N)	Paleobotany, Palynology and Economic Botany	Theory	100	2
	VI	DCEBY-110(N) (P)	Practical Work	Practical Work	100	2
Total Marks/Credit					1500	32

structure of B.Sc. Programme: [Subject Name: Chemistry]

Year	Sem.	Course Code	Paper Title	Theory/Practical	Max. Marks.	Credits
1	I	UGCHE -101N	INORGANIC CHEMISTRY I (BASIC INORGANIC CHEMISTRY)	Theory	100	2
		UGCHE -101P(N)	Practical Work	Practical	100	2
1	II	UGCHE -102N	ORGANIC CHEMISTRY I (BASIC ORGANIC CHEMISTRY)	Theory	100	2
		UGCHE -102P(N)	Practical Work	Practical	100	2
		Skill Enhancement Course				
		SBSCHE-02N	ADVANCED ANALYTICAL TECHNIQUES	Theory	100	4
2	III	UGCHE -103N	PHYSICAL CHEMISTRY I (BASIC PHYSICAL CHEMISTRY)	Theory	100	2
		UGCHE -103P(N)	Practical Work	Practical	100	2
		Skill Enhancement Course				
		SBSCHE-01N	Organic Chemistry II (Advance Organic Chemistry)	Theory	100	4
2	IV	UGCHE -104N	INORGANIC CHEMISTRY II (ADVANCE INORGANIC CHEMISTRY)	Theory	100	2
		UGCHE -104P(N)	Practical Work	Practical	100	2
Discipline Centric Elective Course						
3	V	DCECHE -105N	PHYSICAL CHEMISTRY II (ADVANCE PHYSICAL CHEMISTRY)	Theory	100	2
		DCECHE -106N	INORGANIC CHEMISTRY III (SELECTED TOPICS IN INORGANIC CHEMISTRY)	Theory	100	2
		DCECHE -107P(N)	Practical Work	Practical	100	2
Discipline Centric Elective Course						
3	VI	DCECHE -108N	ORGANIC CHEMISTRY III	Theory	100	2

		(SELECTED TOPICS IN ORGANIC CHEMISTRY)			
	DCECHE -109N	PHYSICAL CHEMISTRY III (SELECTED TOPICS IN PHYSICAL CHEMISTRY)	Theory	100	2
	DCECHE -110P(N)	Practical Work	Practical	100	2
Total Marks/Credit				1600	32

B.Sc. Programme: [Subject Name: Computer Science]

Year	Semester	Course Code	Title of Paper	Credits	Max. Marks	
1	I	UGCS -101N	Computer Fundamental & PC Software	2	100	
		UGCS -101(P)N	Practical Work	2	100	
	II	UGCS -102N	C Programming	2	100	
		UGCS -102(P)N	Practical Work	2	100	
		Skill Enhancement Course				
		SBSCS-02N	Python Programming	4	100	
2	III	UGCS -103N	Data Structures	2	100	
		UGCS -103(P)N	Practical Work	2	100	
		Skill Enhancement Course				
		SBSCS-01N	Discrete Mathematics	4	100	
	IV	UGCS -104N	Introduction to Database Management System	2	100	
		UGCS -104(P)N	Practical Work	2	100	
3	V	Discipline Centric Elective Course				
		DCECS -105N	Computer Network	2	100	
		DCECS -106N	Operating System	2	100	
		DCECS -107(P)N	Practical Work based on 106	2	100	
	VI	Discipline Centric Elective Course				
		DCECS -108N	C++ and Object Oriented Programming	2	100	
		DCECS -109N	Software Engineering	2	100	
		DCECS -110(P)N	Practical Work based on 108	2	100	
	Total Credit/Max. Marks			36	1600	

B.Sc. Programme: [Subject Name: Environmental Science]

Year	Semester	Course Code	Title of course	Theory/ Practical	Credits Marks		
1	I	UGEVS-101N	Fundamentals of Environmental Sciences	Theory	2	100	
		UGEVS-101N(P)	Practical work	Practical	2	100	
		Skill Enhancement Course					
		SBSEVS-01(N)	Energy Resources and Green Technology	Theory	4	100	
1	II	UGEVS-102(N)	Ecology and Biodiversity Conservation	Theory	2	100	
		UGEVS-102N(P)	Practical work	Practical	2	100	
		Skill Enhancement Course					
		SBSEVS-02(N)	Environmental Impact Assessment and Legislation	Theory	4	100	
2	III	UGEVS-103(N)	Environmental Microbiology and Biotechnology	Theory	2	100	
		UGEVS-103N(P)	Practical work	Practical	2	100	
2	IV	UGEVS-104N	Plant Physiology and Biochemistry	Theory	2	100	
		UGEVS-104N(P)	Practical Work		2	100	
Discipline Centric Elective Course							
3	V	DCEVS-105N	Environmental Pollution	Theory	2	100	
		DCEVS-106N	Remote Sensing, GIS and Hydrology	Theory	2	100	
		DCEVS-107N(P)	Practical work based on 105 &106	Practical	2	100	
Discipline Centric Elective Course							
3	VI	DCEVS-108N	Statistics and Environmental Quality Assessment	Theory	2	100	
		DCEVS-109N	Environmental Geology	Theory	2	100	
		DCEVS-110N(P)	Practical Work based on 108 &109	Practical	2	100	
Total Credit /Marks					36	1600	

B.Sc. Programme: [Subject Name: Mathematics]

Year	Sem.	Course Code	Paper Title	Theory/ Practical	Max. Marks.	Credits
1	I	UGMM-101(N)	Differential Calculus	Theory	100	2
		UGMM-102(N)	Analytical Geometry	Theory	100	2
	II	UGMM-103(N)	Integral Calculus	Theory	100	2
		UGMM-104(N)	Differential Equation	Theory	100	2
		UGMM -105(N)	Mechanics-I (Statics and Dynamics)	Theory	100	2

2	III	UGMM -106(N)	Mechanics-II (Dynamics and Hydrodynamics)	Theory	100	2	
	IV	UGMM -107(N)	Linear Algebra	Theory	100	2	
		UGMM -108(N)	Calculus of function of several variable and Vector Calculus	Theory	100	2	
3	V	Discipline Centric Elective Course					
		DCEMM -109(N)	Abstract Algebra	Theory	100	2	
		DCEMM -110(N)	Number Theory	Theory	100	2	
		DCEMM-111(N)(P)	Viva Voce	Practical	100	2	
		Skill Enhancement Course					
		SBSMM-03(N)	Elementary Analysis	Theory	100	4	
	VI	Discipline Centric Elective Course					
		DCEMM -112(N)	Advance Analysis	Theory	100	2	
		DCEMM -113(N)	Function of Complex Variable	Theory	100	2	
		DCEMM-114(N)(P)	Viva Voce	Practical	100	2	
Total Marks/Credit					1500	32	

B.Sc Programme: Subject: PHYSICS [UGPHS]

Year	Sem.	Course Code	Paper Title	Theory/Practical	Credits	Max. Marks
1	I	UGPHS -101N	VECTOR, MECHANICS AND GENERAL PHYSICS	Theory	2	100
		UGPHS -101P(N)	PRACTICAL WORK	Practical	2	100
	II	UGPHS -102N	OSCILLATION, WAVES AND ELECTRICAL CIRCUITS	Theory	2	100
		UGPHS -102P(N)	PRACTICAL WORK	Practical	2	100
2	III	UGPHS-103N	ELECTROMAGNETISM	Theory	2	100
		UGPHS-103P(N)	PRACTICAL WORK	Practical	2	100
	IV	UGPHS-104N	ANALOG AND DIGITAL ELECTRONICS	Theory	2	100
		UGPHS -104P(N)	PRACTICAL WORK	Practical	2	100
		SKILL ENHANCEMENT COURSE				
		SBSPHS-02	MODERN PHYSICS	Theory	4	100
3	V	Discipline Centric Elective Course				
		DCEPHS -105N	OPTICS	Theory	2	100
		DCEPHS-106N	THERMAL PHYSICS	Theory	2	100
		DCEPHS-107P(N)	PRACTICAL WORK	Practical	2	100
	VI	Discipline Centric Elective Course				
		DCEPHS -108N	QUANTUM MECHANICS AND SPECTROSCOPY	Theory	2	100
		DCEPHS -109N	SOLID STATE PHYSICS AND ADVANCED ELECTRONICS	Theory	2	100
		DCEPHS -110P(N)	PRACTICAL WORK	Practical	2	100
	Total Credit				32	1500

B.Sc./B.A. Programme: [Subject Name: Statistics]

Year	Semester	Course Code	Title of Paper	Theory/ Practical	Credit	Min. Marks	Max. Marks
1 st Year	I	UGSTAT -101 (N)	Statistical Methods	Theory	2	36	100
		UGSTAT -101 (NP)	Practical and Viva voce	Practical	2	36	100
	II	UGSTAT -102 (N)	Probability, Distribution and Statistical Inference	Theory	2	36	100
		UGSTAT -102 (NP)	Practical and Viva voce	Practical	2	36	100
2 nd Year	III	UGSTAT -103 (N)	Sampling Theory and Design of Experiments	Theory	2	36	100
		UGSTAT -103 (NP)	Practical and Viva voce	Practical	2	36	100
	IV	UGSTAT -104(N)	Applied Statistics	Theory	2	36	100

		UGSTAT -104 (NP)	Practical and Viva voce	Practical	2	36	100
3 rd Year	V	Discipline Centric Elective Course					
		DECSTAT -105 (N)	Advance Statistical Inference	Theory	2	36	100
		DECSTAT -106 (N)	Basic Knowledge of Statistical Softwares	Theory	2	36	100
		DECSTAT -107 (NP)	Practical and Viva voce	Practical	2	36	100
	VI	Discipline Centric Elective Course					
		DECSTAT -108 (N)	Official Statistics	Theory	2	36	100
		DECSTAT -109 (N)	Operation Research	Theory	2	36	100
		DECSTAT -110 (NP)	Practical and Viva voce	Practical	2	36	100
		Skill Enhancement Course					
		SBSSTAT-04 (N)	Numerical Methods & Basic Computer Knowledge	Theory	4	36	100
	Total Credit				32	540	1500

B.Sc. Programme: [Subject Name: Zoology]

Year	Sem.	Course Code	Paper Title	Theory/Practical	Max. Marks.	Credits
1	I	UGZY-101 (N)	Animal Physiology	Theory	100	2
		UGZY-101 (N)(P)	Practical Work	Practical Work	100	2
	II	UGZY-102 (N)	Diversity of Animal Life	Theory	100	2
		UGZY-102 (N)(P)	Practical Work	Practical Work	100	2
2	III	UGZY-103 (N)	Genetic and Cell Biology	Theory	100	2
		UGZY-103(N) (P)	Practical Work	Practical Work	100	2
	IV	UGZY-104 (N)	Hemichordata and Chordata	Theory	100	2
		UGZY-104 (N)(P)	Practical Work	Practical Work	100	2
		Skill Enhancement Course				
		SBSZY-02(N)	Fundamental of Animal Behavior	Theory	100	4
3	V	Discipline Centric Elective Course				
		DCEZY-105(N)	Animal Distribution and ecology	Theory	100	2
		DCEZY-106 (N)	Taxonomy and Evolution	Theory	100	2
		DCEZY-107 (N)(P)	Practical Work	Practical Work	100	2
		Skill Enhancement Course				
		SBSZY-03(N)	Economic Zoology and environmental biology	Theory	100	4
	VI	Discipline Centric Elective Course				
		DCEZY-108 (N)	Developmental Biology	Theory	100	2
		DCEZY-109 (N)	Molecular Biology and Genetic Engineering	Theory	100	2
		DCEZY-110 (N) (P)	Practical Work	Practical Work	100	2
Total Marks/Credit					1500	36

Combinations, Detailed Programme Structure & Syllabus

S. No.	Groups	Programme structure for different combinations
1.	Life Sciences	BZC: Botany, Zoology, Chemistry
2.		BCEVS: Botany, Chemistry, Environmental Science
3.		BZEVS: Botany, Zoology, Environmental Science
4.		ZCEVS: Zoology, Chemistry, Environmental Science
5.	Physical Sciences	PCM: Physics, Chemistry, Mathematics
6.		PCS: Physics, Chemistry, Statistics
7.		PMCs: Physics, Mathematics, Computer Science
8.		PMS: Physics, Mathematics, Statistics
9.		PSCs: Physics, Statistics, Computer Science
10.		MSCs: Mathematics, Statistics, Computer Science
11.		PCEVS: Physics, Chemistry, Environmental Science
12.		PCsEVS: Physics, Computer Science, Environmental Science
13.		PSEVS: Physics, Statistics, Environmental Science
14.		PMEVS: Physics, Mathematics, Environmental Science

C-1: Combination (Botany, Zoology, Chemistry)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGBY -101N	Cytology and Genetic	2
	UGCHE-101N	Inorganic Chemistry I (Basic Inorganic Chemistry)	2
	UGZY-101N	Animal Physiology	2
	UGBY -101(P)N	Practical Work based on UGBY -101N	2
	UGCHE-101(P)N	Practical Work based on UGCHE-101N	2
	UGZY-101(P)N	Practical Work Based on UGZY -101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
Total Credit (1st Semester)			20
II	Compulsory Core Course		
	UGBY -102N	Plant Physiology	2
	UGCHE-102N	Organic Chemistry I (Basic Organic Chemistry)	2
	UGZY-102N	Diversity of Animal life	2
	UGBY -102(P)N	Practical Work based on UGBY -102N	2
	UGCHE-102(P)N	Practical Work based on UGCHE-102N	2
	UGZY-102(P)N	Practical Work Based on UGZY -102N	2
	Skill Enhancement Course		
	SBSCH-02N	Advance Analytical Chemistry	4
	Ability Enhancement Course		
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 4
Total Credit (2nd Semester)			20
III	Compulsory Core Course		
	UGBY -103N	Plant Diversity-I	2
	UGCHE-103N	Physical Chemistry I (Basic Physical Chemistry)	2
	UGZY-103N	Genetic and Cell Biology	2
	UGBY -103(P)N	Practical Work based on UGBY -103N	2
	UGCHE-103(P)N	Practical Work based on UGCHE-103N	2
	UGZY-103(P)N	Practical Work Based on UGZY -103N	2
	Skill Enhancement Course		
	SBSCH-01N	Organic Chemistry II (Advance Organic Chemistry)	4
	Ability Enhancement Course		
	AECEA OR AECSWM	Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 4
Total Credit (3rd Semester)			20
IV	Compulsory Core Course		
	UGBY -104N	Plant Diversity-II	2
	UGCHE-104N	Inorganic Chemistry II (Advance Inorganic Chemistry)	2
	UGZY-104N	Hemichordata and Chordata	2
	UGBY -104(P)N	Practical Work based on UGBY -104N	2
	UGCHE-104(P)N	Practical Work based on UGCHE-104N	2
	UGZY-104(P)N	Practical Work Based on UGZY -104N	2
	Skill Enhancement Course		
	SBSBY-02N	Ecology	4
	Ability Enhancement Course		
	AECNC OR AECMD	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECMD]	4 4
Total Credit (4th Semester)			20

V	Skill Enhancement Course			
	SBSZY03N	Economic zoology and environmental biology	4	
	Discipline Centric Elective Course (Chose any two group from G, B and H)			
	Group-G	DCEBY -105N	Embryology and Morphogenesis	2
		DCEBY -106N	Plant Pathology and Microbiology	2
		DCEBY -107(P)N	Practical Work based on DCEBY -105N and DCEBY -106N	2
	Group-B	DCECHE -105N	Physical Chemistry II (Advance Physical Chemistry)	2
		DCECHE -106N	Inorganic Chemistry III (Selected Topics In Inorganic Chemistry)	2
		DCECHE-107(P)N	Practical Work based on DCECHE -105N and DCECHE -106N	2
	Group-H	DCEZY -105N	Animal distribution and ecology	2
DCEZY -106N		Taxonomy and Evolution	2	
DCEZY -107(P)N		Practical Work based on DCEZY -105N and DCEZY -106N	2	
Literature Survey				
UGLS-101N	Literature Survey of Elected Subject-1	4		
Total Credit (5 th Semester)			20	
VI	Skill Enhancement Course			
	SBSBCH-01N	Bio-analytical techniques	4	
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-G	DCEBY -108N	Molecular Genetics and Biotechnology	2
		DCEBY -109N	Paleobotany, Palynology and Economic	2
		DCEBY -110(P)N	Practical Work based on DCEBY -108N and DCEBY -109N	2
	Group-B	DCECHE -108N	Organic Chemistry III (Selected Topics In Organic Chemistry)	2
		DCECHE -109N	Physical Chemistry III (Selected Topics In Physical Chemistry)	2
		DCECHE-110(P)N	Practical Work based on DCECHE -108N and DCECHE -109N	2
	Group-H	DCEZY -108N	Developmental Biology	2
		DCEZY -109N	Molecular Biology and Genetic Engineering	2
		DCEZY -110(P)N	Practical Work Based on DCEZY -108N&DCEZY -109N	2
	Research Project			
	UGRP-102N	Research Project on Elected Subject-2	4	
Total Credit (6 th Semester)			20	

C-2: Combination (Botany, Chemistry, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGBY -101N	Cytology and Genetic	2
	UGCHE-101N	Inorganic Chemistry I (Basic Inorganic Chemistry)	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGBY -101(P)N	Practical Work based on UGBY -101N	2
	UGCHE-101(P)N	Practical Work based on UGCHE-101N	2
	UGEVS-101(P)N	Practical Work based on UGEVS-101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
	Total Credit (1st Semester)		20
II	Compulsory Core Course		
	UGBY -102N	Plant Physiology	2
	UGCHE-102N	Organic Chemistry I (Basic Organic Chemistry)	2
	UGEVS-102N	Ecology and Biodiversity Conservation	2
	UGBY -102(P)N	Practical Work based on UGBY -102N	2
	UGCHE-102(P)N	Practical Work based on UGCHE-102N	2
	UGEVS-102(P)N	Practical Work based on UGEVS-102N	2
	Skill Enhancement Course		

	SBSEVS-02N	Environmental Impact Assessment and Legislation	4	
	Ability Enhancement Course			
	AECHRD	Ability Enhancement Course in Human Rights and Duties OR	4	
	AECHH	Ability Enhancement Course in Health & Hygiene	4	
	Total Credit (2 nd Semester)		20	
III	Compulsory Core Course			
	UGBY -103N	Plant Diversity-I	2	
	UGCHE-103N	Physical Chemistry I (Basic Physical Chemistry)	2	
	UGEVS-103N	Environmental Microbiology and Biotechnology	2	
	UGBY -103(P)N	Practical Work based on UGBY -103N	2	
	UGCHE-103(P)N	Practical Work based on UGCHE-103N	2	
	UGEVS-103(P)N	Practical Work based on UGEVS-103N	2	
	Skill Enhancement Course			
	SBSCH-01N	Organic Chemistry II (Advance Organic Chemistry)	4	
	Ability Enhancement Course			
	AECEA	Ability Enhancement Course in Environment Awareness Or	4	
	AECSWM	Ability Enhancement Course in Solid Waste Management	4	
	Total Credit (3 rd Semester)		20	
IV	Compulsory Core Course			
	UGBY -104N	Plant Diversity-II	2	
	UGCHE-104N	Inorganic Chemistry II (Advance Inorganic Chemistry)	2	
	UGEVS-104N	Plant Physiology and Biochemistry	2	
	UGBY -104(P)N	Practical Work based on UGBY -104	2	
	UGCHE-104(P)N	Practical Work based on UGCHE-104	2	
	UGEVS-104(P)N	Practical Work based on UGEVS-104N	2	
	Skill Enhancement Course			
	SBSBY-02N	Ecology	4	
	Ability Enhancement Course			
	AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]	4 4	
	Total Credit (4 th Semester)		20	
	V	Skill Enhancement Course		
SBSZY-03N		Economic zoology and environmental biology	4	
Discipline Centric Elective Course (Chose any two group from G, F and H)				
Group-G		DCEBY -105N	Embryology and Morphogenesis	2
		DCEBY -106N	Plant Pathology and Microbiology	2
		DCEBY -107(P)N	Practical Work based on DCEBY -105N and DCEBY -106N	2
Group-F		DCECHE -105N	Physical Chemistry II (Advance Physical Chemistry)	2
		DCECHE -106N	Inorganic Chemistry III (Selected Topics In Inorganic Chemistry)	2
		DCECHE-107(P)N	Practical Work based on DCECHE -105N and DCECHE -106N	2
Group-H		DCEVS-105N	Environmental Pollutions	2
		DCEVS-106N	Remote Sensing, GIS and Hydrology	2
		DCEVS-107(P)N	Practical Work based on DCEVS-105N & DCEVS-106N	2
Literature Survey				
UGLS-101N	Literature Survey of Elected Subject-1	4		
Total Credit (5 th Semester)		20		
VI	Skill Enhancement Course			
	SBSBCH-01N	Bio-analytical techniques	4	
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-G	DCEBY -108N	Molecular Genetics and Biotechnology	2
		DCEBY -109N	Paleobotany, Palynology and Economic	2
		DCEBY -110(P)N	Practical Work based on DCEBY -108 and DCEBY -109N	2
	Group-F	DCECHE -108N	Organic chemistry III (selected topics in organic chemistry)	2
		DCECHE -109N	Physical chemistry III (selected topics in physical chemistry)	2
		DCECHE-110(P)N	Practical Work	2

	Group-H	DCEVS-108	Statistics and Environmental Quality Assessment	2
		DCEVS-109	Environmental geology and earth resources	2
		DCEVS-110P	Practical Work based on DCEVS-108N & DCEVS-109N	2
	Research Project			
	UGRP-102N	Research Project on Elected Subject-2		
Total Credit (6 th Semester)				20

C-3: Combination (Botany, Zoology, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGBY -101N	Cytology and Genetic	2
	UGZY -101N	Animal Physiology	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGBCH-101(P)N	Practical Work Based on UGBCH -101N	2
	UGZY -101(P)N	Practical Work Based on UGZY -101N	2
	UGBY -101(P)N	Practical Work based on UGBY -101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
Total Credit (1st Semester)			16
II	Compulsory Core Course		
	UGBY -102N	Plant Physiology	2
	UGZY -102N	Diversity of Animal life	2
	UGEVS-102	Ecology and Biodiversity Conservation	2
	UGBCH-102(P)N	Practical Work Based on UGBCH -102N	2
	UGZY -102(P)N	Practical Work Based on UGZY -102N	2
	UGBY -102(P)N	Practical Work based on UGBY -102N	2
	Skill Enhancement Course		
	SBSEVS-02N	Environmental Impact Assessment and Legislation	4
	Ability Enhancement Course		
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 4
Total Credit (2nd Semester)			20
III	Compulsory Core Course		
	UGBY -103N	Plant Diversity-I	2
	UGZY -103N	Genetic and Cell Biology	2
	UGEVS-103	Environmental Microbiology and Biotechnology	2
	UGBCH-103(P)N	Practical Work Based on UGBCH -103N	2
	UGZY -103(P)N	Practical Work Based on UGZY -103N	2
	UGBY -103(P)N	Practical Work based on UGBY -103N	2
	Skill Enhancement Course		
	SBSBCH-01N	Bio-analytical techniques	4
	Ability Enhancement Course		
	AECEA OR AECWMS	Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 4
Total Credit (3rd Semester)			20
IV	Compulsory Core Course		
	UGBY -104N	Plant Diversity-II	2
	UGZY -104N	Hemichordata and Chordata	2
	UGEVS-104N	Plant Physiology and Biochemistry	2

	UGBCH-104(P)N		Practical Work Based on UGBCH -104N	2
	UGZY-104(P)N		Practical Work Based on UGZY -104N	2
	UGBY -104(P)N		Practical Work based on UGBY -104N	2
	Skill Enhancement Course			
	SBSZY-02N		Fundamental of Animal Behavior	4
	Ability Enhancement Course			
	AECNC OR AECDM		Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]	4 4
Total Credit (4 th Semester)				20
V	Skill Enhancement Course			
	SBSZY-03N		Economic zoology and environmental biology	4
	Discipline Centric Elective Course (Chose any two group from G, F and H)			
	Group-G	DCEBY -105N	Embryology and Morphogenesis	2
		DCEBY -106N	Plant Pathology and Microbiology	2
		DCEBY -107(P)N	Practical Work based on DCEBY -105N and DCEBY -106N	2
	Group-F	DCEZY-105N	Animal distribution and ecology	2
		DCEZY -106N	Taxonomy and Evolution	2
		DCEZY -107(P)N	Practical Work based on DCEZY -105N and DCEZY -106N	2
	Group-H	DCEVS-105N	Environmental Pollutions	2
		DCEVS-106N	Remote Sensing, GIS and Hydrology	2
DCEVS-107(P)N		Practical Work based on DCEVS-105N & DCEVS-106N	2	
Literature Survey				
UGLS-101N		Literature Survey of Elected Subject-1	4	
Total Credit (5 th Semester)				20
VI	Skill Enhancement Course			
	SBSSTAT-04N		Numerical Methods & Basic Computer Knowledge	4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-G	DCEBY -108N	Molecular Genetics and Biotechnology	2
		DCEBY -109N	Paleobotany, Palynology and Economic	2
		DCEBY -110(P)N	Practical Work based on DCEBY -108N and DCEBY -109N	2
	Group-F	DCEZY -108N	Developmental Biology	2
		DCEZY -109N	Molecular Biology and Genetic Engineering	2
		DCEZY -110(P)N	Practical Work Based on DCEZY -108 &DCEZY -109	2
	Group-H	DCEVS-108N	Statistics and Environmental Quality Assessment	2
		DCEVS-109N	Environmental geology and earth resources	2
		DCEVS-110P	Practical Work based on DCEVS-108N & DCEVS-109N	2
	Research Project			
UGRP-102N		Research Project on Elected Subject-2	4	
Total Credit (6 th Semester)				20

C-4: Combination (Zoology, Chemistry, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGZY-101N	Animal Physiology	2
	UGCHE-101N	Inorganic Chemistry I (Basic Inorganic Chemistry)	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGZY-101(P)N	Practical Work Based on UGZY -101N	2
	UGCHE-101(P)N	Practical Work based on UGCHE-101N	2
			2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4

	Total Credit (1st Semester)		20
II	Compulsory Core Course		
	UGZY-102N	Diversity of Animal life	2
	UGCHE-102N	Organic Chemistry I (Basic Organic Chemistry)	2
	UGEVS-102	Ecology and Biodiversity Conservation	2
	UGZY-102(P)N	Practical Work Based on UGZY -102N	2
	UGCHE-102(P)N	Practical Work based on UGCHE-102N	2
			2
	Skill Enhancement Course		
	SBSEVS-02N	Environmental Impact Assessment and Legislation	4
	Ability Enhancement Course		
	AECHRD	Ability Enhancement Course in Human Rights and Duties OR	4
	AECHH	Ability Enhancement Course in Health & Hygiene	4
	Total Credit (2nd Semester)		20
III	Compulsory Core Course		
	UGZY-103N	Genetic and Cell Biology	2
	UGCHE-103N	Physical Chemistry I (Basic Physical Chemistry)	2
	UGEVS-103	Environmental Microbiology and Biotechnology	2
	UGZY-103(P)N	Practical Work Based on UGZY -103N	2
	UGCHE-103(P)N	Practical Work based on UGCHE-103N	2
			2
	Skill Enhancement Course		
	SBSCH-01N	Organic Chemistry II (Advance Organic Chemistry)	4
	Ability Enhancement Course		
	AECEA	Ability Enhancement Course in Environment Awareness Or	4
	AECWDM	Ability Enhancement Course in Solid Waste Management	4
	Total Credit (3rd Semester)		20
IV	Compulsory Core Course		
	UGZY-104N	Hemichordata and Chordata	2
	UGCHE-104N	Inorganic Chemistry II (Advance Inorganic Chemistry)	2
	UGEVS-104N	Plant Physiology and Biochemistry	2
	UGZY-104(P)N	Practical Work Based on UGZY -104N	2
	UGCHE-104(P)N	Practical Work based on UGCHE-104N	2
			2
	Skill Enhancement Course		
	SBSZY-02N	Fundamental of Animal Behavior	
	Ability Enhancement Course		
	AECNC OR AECMD	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECMD]	4 4
	Total Credit (4th Semester)		20
V	Skill Enhancement Course		
	SBSZY03N	Economic zoology and environmental biology	4
	Discipline Centric Elective Course (Chose any two group from G, B and H)		
	Group-G	DCEZY-105N	Animal distribution and ecology
		DCEZY -106N	Taxonomy and Evolution
		DCEZY -107(P)N	Practical Work based on DCEZY -105N and DCEZY -106N
	Group-B	DCECHE -105N	Physical Chemistry II (Advance Physical Chemistry)
		DCECHE -106N	Inorganic Chemistry III (Selected Topics In Inorganic Chemistry)
		DCECHE-107(P)N	Practical Work based on DCECHE -105N and DCECHE -106N
	Group-H	DCEVS-105N	Environmental Pollutions
		DCEVS-106N	Remote Sensing, GIS and Hydrology
		DCEVS-107(P)N	Practical Work based on DCEVS-105N & DCEVS-106N
	Literature Survey		
	UGLS-101N	Literature Survey of Elected Subject-1	4

	Total Credit (5th Semester)		20
VI	Skill Enhancement Course		
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge	4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)		
	Group-G	DCEZY -108N	Developmental Biology
		DCEZY -109N	Molecular Biology and Genetic Engineering
		DCEZY -110(P)N	Practical Work Based on DCEZY -108N&DCEZY -109N
	Group-B	DCECHE -108N	Organic Chemistry III (Selected Topics In Organic Chemistry)
		DCECHE -109N	Physical Chemistry III (Selected Topics In Physical Chemistry)
		DCECHE-110(P)N	Practical Work based on DCECHE -108N and DCECHE -109N
	Group-H	DCEVS-108	Statistics and Environmental Quality Assessment
		DCEVS-109	Environmental geology and earth resources
		DCEVS-110P	Practical Work based on DCEVS-108N & DCEVS-109N
	Research Project		
	UGRP-102N	Research Project on Elected Subject-2	4
	Total Credit (6th Semester)		20

C-5: Combination (Physics, Chemistry, Mathematics)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGCHE-101N	Inorganic Chemistry I (Basic Inorganic Chemistry)	2
	UGMM-101N	Differential Calculus	2
	UGMM-102N	Analytical Geometry	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGCHE-101(P)N	Practical Work based on UGCHE-101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
	Total Credit (1st Semester)		20
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGCHE-102N	Organic Chemistry I (Basic Organic Chemistry)	2
	UGMM-103N	Integral Calculus	2
	UGMM-104N	Differential Equation	2
	UGPHS -102(P)N	Practical Work based on UGPHS -102N	2
	UGCHE-102(P)N	Practical Work based on UGCHE-102N	2
	Skill Enhancement Course		
	SBSCH-02N	Advance Analytical Chemistry	4
	Ability Enhancement Course		
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 OR 4
	Total Credit (2nd Semester)		20
III	Compulsory Core Course		
	UGPHS -103N	Electromagnetism	2
	UGCHE-103N	Physical Chemistry I (Basic Physical Chemistry)	2
	UGMM-105N	Mechanics-I (Statics and Dynamics)	2
	UGMM-106N	Mechanics-II (Dynamics and Hydrodynamics)	2
	UGPHS -103(P)N	Practical Work based on UGPHS -103N	2
	UGCHE-103(P)N	Practical Work based on UGCHE-103N	2
	Skill Enhancement Course		
	SBSCH-01N	Organic Chemistry II (Advance Organic Chemistry)	4
	Ability Enhancement Course		

	AECEA	Ability Enhancement Course in Environment Awareness Or		4
	AECSWM	Ability Enhancement Course in Solid Waste Management		4
	Total Credit (3 rd Semester)			20
IV	Compulsory Core Course			
	UGPHS -104N		Analog and Digital Electronics	2
	UGCHE-104N		Inorganic Chemistry II (Advance Inorganic Chemistry)	2
	UGMM-107N		Linear Algebra	2
	UGMM-108N		Calculus of function of several variable and Vector Calculus	2
	UGPHS -104(P)N		Practical Work based on UGPHS -104N	2
	UGCHE-104(P)N		Practical Work based on UGCHE-104N	2
	Skill Enhancement Course			
	SBSPHS-02N		Modern physics	4
	Ability Enhancement Course			
	AECNC		Ability Enhancement Course in Nutrition for Community or	4
	AECDM		Ability Enhancement Course in Disaster Management	4
	Total Credit (4 th Semester)			20
V	Skill Enhancement Course			
	SBSMM-03N		Elementary Analysis	4
	Discipline Centric Elective Course (Chose any two group from A, B and C)			
	Group-A	DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2
	Group-B	DCECHE -105N	Physical Chemistry II (Advance Physical Chemistry)	2
		DCECHE -106N	Inorganic Chemistry III (Selected Topics In Inorganic Chemistry)	2
		DCECHE-107(P)N	Practical Work based on DCECHE -105N and DCECHE -106N	2
	Group-C	DCEMM -109N	Abstract Algebra	2
DCEMM -110N		Number Theory	2	
DCEMM-111(P)N		Viva Voce	2	
Literature Survey				
UGLS-101N		Literature Survey of Elected Subject-1	4	
Total Credit (5 th Semester)			20	
VI	Skill Enhancement Course			
	SBSSTAT-04		Numerical Methods & Basic Computer Knowledge	4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy	2
		DCEPHS -109N	Solid State Physics and Advanced Electronics	2
		DCEPHS-110(P)N	Practical Work based on DCEPHS-108N and DCEPHS-109N	2
	Group-B	DCECHE -108N	Organic Chemistry III (Selected Topics In Organic Chemistry)	2
		DCECHE -109N	Physical Chemistry III (Selected Topics In Physical Chemistry)	2
		DCECHE-110PN	Practical Work based on DCECHE -108N and DCECHE -109N	2
	Group-C	DCEMM -112N	Advance Analysis	2
		DCEMM -113N	Function of Complex Variable	2
		DCEMM-114(P)N	Viva Voce	2
	Research Project			
	UGRP-102N		Research Project on Elected Subject-2	4
	Total Credit (6 th Semester)			20
Grand Total Credit (All Semesters)			120	

C-6: Combination (Physics, Chemistry, Statistics)

Semester	Course Code	Title of course	Credits
	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGCHE-101N	Inorganic Chemistry I (Basic Inorganic Chemistry)	2

I	UGSTAT-101N		Statistical Methods	2
	UGPHS -101(P)N		Practical Work based on UGPHS -101N	2
	UGCHE-101(P)N		Practical Work based on UGCHE-101N	2
	UGSTAT-101(P)N		Practical Work based on UGSTAT -101N	2
	Skill Enhancement Course			
	SBSEVS-01N		Energy Resources and Green Technology	4
	Ability Enhancement Course			
	AECEG OR AECHD		Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
Total Credit (1 st Semester)				20
II	Compulsory Core Course			
	UGPHS -102N		Oscillation, waves and electrical circuits	2
	UGCHE-102N		Organic Chemistry I (Basic Organic Chemistry)	2
	UGSTAT-102N		Probability, Distribution and Statistical Inference	2
	UGPHS -102(P)N		Practical Work based on UGPHS -102N	2
	UGCHE-102(P)N		Practical Work based on UGCHE-102N	2
	UGSTAT-102(P)N		Practical Work based on UGSTAT -102N	2
	Skill Enhancement Course			
	SBSCH-02N		Advance Analytical Chemistry	4
	Ability Enhancement Course			
	AECHRD OR AECHH		Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 4
	Total Credit (2 nd Semester)			
III	Compulsory Core Course			
	UGPHS -103N		Electromagnetism	2
	UGCHE-103N		Physical Chemistry I (Basic Physical Chemistry)	2
	UGSTAT-103N		Sampling Theory and Design of Experiments	2
	UGPHS -103(P)N		Practical Work based on UGPHS -103N	2
	UGCHE-103(P)N		Practical Work based on UGCHE-103N	2
	UGSTAT-103(P)N		Practical Work based on UGSTAT -103N	2
	Skill Enhancement Course			
	SBSCH-01N		Organic Chemistry II (Advance Organic Chemistry)	4
	Ability Enhancement Course			
	AECEA OR AECSWM		Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 4
	Total Credit (3 rd Semester)			
IV	Compulsory Core Course			
	UGPHS -104N		Analog and Digital Electronics	2
	UGCHE-104N		Inorganic Chemistry II (Advance Inorganic Chemistry)	2
	UGSTAT-104N		Applied Statistics	2
	UGPHS -104(P)N		Practical Work based on UGPHS -104N	2
	UGCHE-104(P)N		Practical Work based on UGCHE-104N	2
	UGSTAT-104(P)N		Practical Work based on UGSTAT -104N	2
	Skill Enhancement Course			
	SBSPHS-02N		Modern physics	4
	Ability Enhancement Course			
	AECNC OR AECDM		Ability Enhancement Course in Nutrition for Community or Ability Enhancement Course in Disaster Management	4 4
	Total Credit (4 th Semester)			
V	Skill Enhancement Course			
	SBSMM-03N		Elementary Analysis	4
	Discipline Centric Elective Course (Chose any two group from A, B and E)			
	Group-A	DCEPHS -105N DCEPHS -106N	Optics Thermal Physics	2 2

		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2		
	Group-B	DCECHE -105N DCECHE -106N DCECHE-107(P)N	Physical Chemistry II (Advance Physical Chemistry) Inorganic Chemistry III (Selected Topics In Inorganic Chemistry) Practical Work based on DCECHE -105N and DCECHE -106N	2 2 2		
		Group-E	DCESTAT -105N DCESTAT -106N DCESTAT-107(P)N	Advance Statistical Inference Basic Knowledge of Statistical Softwares Practical Work based on DCESTAT -105N and DCESTAT -106N	2 2 2	
			Literature Survey			
	UGLS-101N		Literature Survey of Elected Subject-1			4
	Total Credit (5 th Semester)				20	
	VI	Skill Enhancement Course				
SBSSTAT-04N		Numerical Methods & Basic Computer Knowledge			4	
Discipline Centric Elective Course (Chose any two group as per Sem. V)						
Group-A		DCEPHS -108N DCEPHS -109N DCEPHS-110(P)N	Quantum mechanics and spectroscopy Solid State Physics and Advanced Electronics Practical Work based on DCEPHS-108N and DCEPHS-109N	2 2 2		
		Group-B	DCECHE -108N DCECHE -109N DCECHE-110(P)N	Organic Chemistry III (Selected Topics In Organic Chemistry) Physical Chemistry III (Selected Topics In Physical Chemistry) Practical Work based on DCECHE -108N and DCECHE -109N	2 2 2	
			Group-E	DCESTAT-108N DCESTAT -109N DCESTAT-110(P)N	Official Statistics Operation Research Practical Work based on DCESTAT -108N and DCESTAT -109N	2 2 2
Research Project						
UGRP-102N		Research Project on Elected Subject-2			4	
Total Credit (6 th Semester)				20		

C-7: Combination (Physics, Mathematics, Computer Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGCS-101N	Computer Fundamental & PC Software	2
	UGMM-101N	Differential Calculus	2
	UGMM-102N	Analytical Geometry	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGCS-101(P)N	Practical Work based on UGCS -101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
	Total Credit (1st Semester)		
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGCS-102N	C Programming	2
	UGMM-103N	Integral Calculus	2
	UGMM-104N	Differential Equation	2
	UGPHS -102(P)N	Practical Work based on UGPHS -102N	2
	UGCS-102(P)N	Practical Work based on UGCS -102	2
	Skill Enhancement Course		
	SBSCS-02N	Python Programming	4
	Ability Enhancement Course		
	AECHRD	Ability Enhancement Course in Human Rights and Duties OR	4

	AECHH	Ability Enhancement Course in Health & Hygiene	4	
	Total Credit (2 nd Semester)		20	
III	Compulsory Core Course			
	UGPHS -103N	Electromagnetism	2	
	UGCS-103N	Data Structures	2	
	UGMM-105N	Mechanics-I (Statics and Dynamics)	2	
	UGMM-106N	Mechanics-II (Dynamics and Hydrodynamics)	2	
	UGPHS -103(P)N	Practical Work based on UGPHS -103N	2	
	UGCS-103(P)N	Practical Work based on UGCS -103N	2	
	Skill Enhancement Course			
	SBSCS-01N	Discrete Mathematics	4	
	Ability Enhancement Course			
	AECEA	Ability Enhancement Course in Environment Awareness Or	4	
	AECSWM	Ability Enhancement Course in Solid Waste Management	4	
Total Credit (3 rd Semester)		20		
IV	Compulsory Core Course			
	UGPHS -104N	Analog and Digital Electronics	2	
	UGCS-104N	Introduction to Database Management System	2	
	UGMM-107N	Linear Algebra	2	
	UGMM-108N	Calculus of function of several variable and Vector Calculus	2	
	UGPHS -104(P)N	Practical Work based on UGPHS -104N	2	
	UGCS-104(P)N	Practical Work based on UGCS -104N	2	
	Skill Enhancement Course			
	SBSPHS-02N	Modern physics	4	
	Ability Enhancement Course			
	AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]	4 4	
	Total Credit (4 th Semester)		20	
V	Skill Enhancement Course			
	SBSMM-03N	Elementary Analysis	4	
	Discipline Centric Elective Course (Chose any two group from A, D and C)			
	Group-A	DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2
	Group-D	DCECS -105N	Computer Network	2
		DCECS -106N	Operating System	2
		DCECS-107(P)N	Practical Work based on DCECS -106N	2
	Group-C	DCEMM -109N	Abstract Algebra	2
		DCEMM -110N	Number Theory	2
		DCEMM-111(P)N	Viva Voce	2
Literature Survey				
UGLS-101N	Literature Survey of Elected Subject-1	4		
Total Credit (5 th Semester)		20		
VI	Skill Enhancement Course			
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge	4	
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy	2
		DCEPHS -109N	Solid State Physics and Advanced Electronics	2
		DCEPHS-110(P)N	Practical Work based on DCEPHS-108N and DCEPHS-109N	2
	Group-D	DCECS -108N	C++ and Object Oriented Programming	2
		DCECS -109N	Software Engineering	2
		DCECS-110(P)	Practical Work based on DCECS -108N	2
	Group-C	DCEMM -112N	Advance Analysis	2
		DCEMM -113N	Function of Complex Variable	2
		DCEMM-114(P)N	Viva Voce	2
Research Project				
UGRP-102N	Research Project on Elected Subject-2	4		
Total Credit (6 th Semester)		20		

C-8: Combination (Physics, Mathematics, Statistics)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGSTAT-101N	Statistical Methods	2
	UGMM-101N	Differential Calculus	2
	UGMM-102N	Analytical Geometry	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGSTAT-101(P)N	Practical Work based on UGSTAT -101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
Total Credit (1st Semester)			20
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGSTAT -102N	Probability, Distribution and Statistical Inference	2
	UGMM-103N	Integral Calculus	2
	UGMM-104N	Differential Equation	2
	UGPHS -102(P)N	Practical Work based on UGPHS -102N	2
	UGSTAT -102(P)N	Practical Work based on UGSTAT -102N	2
	Skill Enhancement Course		
	SBSCS-02N	Python Programming	4
	Ability Enhancement Course		
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 OR 4
Total Credit (2nd Semester)			20
III	Compulsory Core Course		
	UGPHS -103N	Electromagnetism	2
	UGSTAT -103N	Sampling Theory and Design of Experiments	2
	UGMM-105N	Mechanics-I (Statics and Dynamics)	2
	UGMM-106N	Mechanics-II (Dynamics and Hydrodynamics)	2
	UGPHS -103(P)N	Practical Work based on UGPHS -103N	2
	UGSTAT -103(P)N	Practical Work based on UGSTAT -103N	2
	Skill Enhancement Course		
	SBSCS -01N	Discrete Mathematics	4
	Ability Enhancement Course		
	AECEA OR AECSWM	Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 OR 4
Total Credit (3rd Semester)			20
IV	Compulsory Core Course		
	UGPHS -104N	Analog and Digital Electronics	2
	UGSTAT -104N	Applied Statistics	2
	UGMM-107N	Linear Algebra	2
	UGMM-108N	Calculus of function of several variable and Vector Calculus	2
	UGPHS -104(P)N	Practical Work based on UGPHS -104N	2
	UGSTAT -104(P)N	Practical Work based on UGSTAT -104N	2
	Skill Enhancement Course		
	SBSPHS-02N	Modern physics	4
	Ability Enhancement Course		
	AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]	4 OR 4
Total Credit (4th Semester)			20

V	Skill Enhancement Course		
	SBSMM-03N	Elementary Analysis	4
	Discipline Centric Elective Course (Chose any two group from A, E and C)		
	Group-A	DCEPHS -105N	Optics
		DCEPHS -106N	Thermal Physics
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N
	Group-E	DCESTAT -105N	Advance Statistical Inference
		DCESTAT -106N	Basic Knowledge of Statistical Softwares
		DCESTAT-107(P)N	Practical Work based on DCESTAT -105N and DCESTAT -106N
	Group-C	DCEMM -109N	Abstract Algebra
		DCEMM -110N	Number Theory
		DCEMM-111(P)N	Viva Voce
	Literature Survey		
	UGLS-101N	Literature Survey of Elected Subject-1	4
	Total Credit (5th Semester)		20
VI	Skill Enhancement Course		
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge	4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)		
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy
		DCEPHS -109N	Solid State Physics and Advanced Electronics
		DCEPHS-110(P)N	Practical Work based on DCEPHS-108N and DCEPHS-109N
	Group-D	DCESTAT -108N	Official Statistics
		DCESTAT -109N	Operation Research
		DCESTAT-110(P)N	Practical Work based on DCESTAT -108N and DCESTAT -109N
	Group-C	DCEMM -112N	Advance Analysis
		DCEMM -113N	Function of Complex Variable
		DCEMM-114(P)N	Viva Voce
	Research Project		
	UGRP-102N	Research Project on Elected Subject-2	4
	Total Credit (6th Semester)		20

C-9: Combination (Physics, Statistics, Computer Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGCS-101N	Computer Fundamental & PC Software	2
	UGSTAT-101N	Statistical Methods	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGCS-101(P)N	Practical Work based on UGCS -101N	2
	UGSTAT-101(P)N	Practical Work based on UGSTAT -101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
	Total Credit (1st Semester)		20
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGCS-102N	C Programming	2
	UGSTAT-102N	Probability, Distribution and Statistical Inference	2
	UGPHS -102(P)N	Practical Work based on UGPHS -102N	2
	UGCS-102(P)N	Practical Work based on UGCS -102N	2
	UGSTAT-102(P)N	Practical Work based on UGSTAT -102N	2
	Skill Enhancement Course		

	SBSCS-02N	Python Programming		4
	Ability Enhancement Course			
	AECHRD	Ability Enhancement Course in Human Rights and Duties OR		4
	AECHH	Ability Enhancement Course in Health & Hygiene		4
	Total Credit (2 nd Semester)			20
III	Compulsory Core Course			
	UGPHS -103N	Electromagnetism		2
	UGCS-103N	Data Structures		2
	UGSTAT-103N	Sampling Theory and Design of Experiments		2
	UGPHS -103(P)N	Practical Work based on UGPHS -103N		2
	UGCS-103(P)N	Practical Work based on UGCS -103N		2
	UGSTAT-103(P)N	Practical Work based on UGSTAT -103N		2
	Skill Enhancement Course			
	SBSCS-01N	Discrete Mathematics		4
	Ability Enhancement Course			
	AECEA	Ability Enhancement Course in Environment Awareness Or		4
	AECSWM	Ability Enhancement Course in Solid Waste Management		4
	Total Credit (3 rd Semester)			20
IV	Compulsory Core Course			
	UGPHS -104N	Analog and Digital Electronics		2
	UGCS-104N	Introduction to Database Management System		2
	UGSTAT-104N	Applied Statistics		2
	UGPHS -104(P)N	Practical Work based on UGPHS -104N		2
	UGCS-104(P)N	Practical Work based on UGCS -104N		2
	UGSTAT-104(P)N	Practical Work based on UGSTAT -104N		2
	Skill Enhancement Course			
	SBSPHS-02N	Modern physics		4
	Ability Enhancement Course			
	AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]		4 4
	Total Credit (4 th Semester)			20
	V	Skill Enhancement Course		
SBSMM-03N		Elementary Analysis		4
Discipline Centric Elective Course (Chose any two group from A, B and E)				
Group-A		DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2
Group-D		DCECS -105N	Computer Network	2
		DCECS -106N	Operating System	2
		DCECS-107(P)N	Practical Work based on 106N	2
Group-E		DCESTAT -105N	Advance Statistical Inference	2
		DCESTAT-106N	Basic Knowledge of Statistical Softwares	2
	DCESTAT-107(P)N	Practical Work based on DCESTAT -105N and DCESTAT -106N	2	
Literature Survey				
UGLS-101N	Literature Survey of Elected Subject-1		4	
Total Credit (5 th Semester)			20	
VI	Skill Enhancement Course			
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge		4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy	2
		DCEPHS -109N	Solid State Physics and Advanced Electronics	2
		DCEPHS-110(P)N	Practical Work based on DCEPHS-108 and DCEPHS-109	2
	Group-D	DCECS -108N	C++ and Object Oriented Programming	2
		DCECS -109N	Software Engineering	2
		DCECS-110(P)N	Practical Work based on 108N	2
	Group-E	DCESTAT -108N	Official Statistics	2
		DCESTAT -109N	Operation Research	2
DCESTAT-110(P)N		Practical Work based on DCESTAT -108N and DCESTAT -109N	2	

	Research Project		
	UGRP-102N	Research Project on Elected Subject-2	4
	Total Credit (6th Semester)		20

C-10: Combination (Mathematics, Statistics, Computer Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGSTAT -101N	Statistical Methods	2
	UGCS-101N	Computer Fundamental & PC Software	2
	UGMM-101N	Differential Calculus	4
	UGMM-102N	Analytical Geometry	
	UGSTAT -101(P)N	Practical Work based on UGSTAT -101N	2
	UGCS-101(P)N	Practical Work based on UGCS -101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
Total Credit (1st Semester)			20
II	Compulsory Core Course		
	UGSTAT -102N	Probability, Distribution and Statistical Inference	2
	UGCS-102N	C Programming	2
	UGMM-103N	Integral Calculus	2
	UGMM-104N	Differential Equation	2
	UGSTAT -102(P)N	Practical Work based on UGSTAT -102N	2
	UGCS-102(P)N	Practical Work based on UGCS -102N	2
	Skill Enhancement Course		
	SBSCS-02N	Python Programming	4
	Ability Enhancement Course		
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 4
Total Credit (2nd Semester)			20
III	Compulsory Core Course		
	UGSTAT -103N	Sampling Theory and Design of Experiments	2
	UGCS-103N	Data Structures	2
	UGMM-105N	Mechanics-I (Statics and Dynamics)	2
	UGMM-106N	Mechanics-II (Dynamics and Hydrodynamics)	2
	UGSTAT -103(P)N	Practical Work based on UGSTAT -103N	2
	UGCS-103(P)N	Practical Work based on UGCS -103N	2
	Skill Enhancement Course		
	SBSCS-01N	Discrete Mathematics	4
	Ability Enhancement Course		
	AECEA Or AECSWM	Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 4
Total Credit (3rd Semester)			20
IV	Compulsory Core Course		
	UGSTAT -104N	Applied Statistics	2
	UGCS-104N	Introduction to Database Management System	2
	UGMM-107N	Linear Algebra	2
	UGMM-108N	Calculus of function of several variable and Vector Calculus	2
	UGSTAT -104(P)N	Practical Work based on UGSTAT -104N	2
	UGCS-104(P)N	Practical Work based on UGCS -104N	2
Skill Enhancement Course			

	SBSPHS-02N	Modern physics	4
	Ability Enhancement Course		
	AECNC OR AECMD	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECMD]	4 4
	Total Credit (4th Semester)		20
V	Skill Enhancement Course		
	SBSMM-03N	Elementary Analysis	4
	Discipline Centric Elective Course (Chose any two group from E, D and C)		
	Group-E	DCESTAT -105N	Advance Statistical Inference
		DCESTAT -106N	Basic Knowledge of Statistical Softwares
		DCESTAT-107(P)N	Practical Work based on DCESTAT -105N and DCESTAT -106N
	Group-D	DCECS -105N	Computer Network
		DCECS -106N	Operating System
		DCECS -107(P)N	Practical Work based on 106N
	Group-C	DCEMM -109N	Abstract Algebra
		DCEMM -110N	Number Theory
		DCEMM-111(P)N	Viva Voce
	Literature Survey		
	UGLS-101N	Literature Survey of Elected Subject-1	4
	Total Credit (5th Semester)		20
VI	Skill Enhancement Course		
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge	4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)		
	Group-E	DCESTAT -108N	Official Statistics
		DCESTAT -109N	Operation Research
		DCESTAT-110(P)N	Practical Work based on DCESTAT -108N and DCESTAT -109N
	Group-D	DCECS-108N	C++ and Object Oriented Programming
		DCECS -109N	Software Engineering
		DCECS -110(P)N	Practical Work based on 108N
	Group-C	DCEMM -112N	Advance Analysis
		DCEMM -113N	Function of Complex Variable
		DCEMM-114(P)N	Viva Voce
	Research Project		
	UGRP-102N	Research Project on Elected Subject-2	4
	Total Credit (6th Semester)		20

C-11: Combination (Physics, Chemistry, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGCHE-101N	Inorganic Chemistry I (Basic Inorganic Chemistry)	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGCHE-101(P)N	Practical Work based on UGCHE-101N	2
	UGEVS-101(P)N	Practical Work Based on UGEVS-101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
	Total Credit (1st Semester)		20
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGCHE-102N	Organic Chemistry I (Basic Organic Chemistry)	2
	UGEVS-102	Ecology and Biodiversity Conservation	2

	UGPHS -102(P)N		Practical Work based on UGPHS -102N	2
	UGCHE-102(P)N		Practical Work based on UGCHE-102N	2
	UGEVS-102(P)N		Practical Work Based on UGEVS-102N	2
	Skill Enhancement Course			
	SBSEVS-02N	Environmental Impact Assessment and Legislation		4
	Ability Enhancement Course			
	AECHRD	Ability Enhancement Course in Human Rights and Duties OR		4
	AECHH	Ability Enhancement Course in Health & Hygiene		4
	Total Credit (2 nd Semester)			20
III	Compulsory Core Course			
	UGPHS -103N	Electromagnetism		2
	UGCHE-103N	Physical Chemistry I (Basic Physical Chemistry)		2
	UGEVS-103	Environmental Microbiology and Biotechnology		2
	UGPHS -103(P)N	Practical Work based on UGPHS -103N		2
	UGCHE-103(P)N	Practical Work based on UGCHE-103N		2
	UGEVS-103(P)N	Practical Work Based on UGEVS-103N		2
	Skill Enhancement Course			
	SBSCHHE-01N	Organic Chemistry II (Advance Organic Chemistry)		4
	Ability Enhancement Course			
	AECEA	Ability Enhancement Course in Environment Awareness Or		4
	AECSWM	Ability Enhancement Course in Solid Waste Management		4
Total Credit (3 rd Semester)			20	
IV	Compulsory Core Course			
	UGPHS -104N	Analog and Digital Electronics		2
	UGCHE-104N	Inorganic Chemistry II (Advance Inorganic Chemistry)		2
	UGEVS-104N	Plant Physiology and Biochemistry		2
	UGPHS -104(P)N	Practical Work based on UGPHS -104N		2
	UGCHE-104(P)N	Practical Work based on UGCHE-104N		2
	UGEVS-104(P)N	Practical Work Based on UGEVS-104N		2
	Skill Enhancement Course			
	SBSPHS-02N	Modern physics		4
	Ability Enhancement Course			
	AECNC	Ability Enhancement Course in Nutrition for Community or		4
	AECDM	Ability Enhancement Course in Disaster Management		4
Total Credit (4 th Semester)			20	
V	Skill Enhancement Course			
	SBSMM-03N	Elementary Analysis		4
	Discipline Centric Elective Course (Chose any two group from A, B and E)			
	Group-A	DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105 and DCEPHS -106	2
	Group-B	DCECHE -105N	Physical Chemistry II (Advance Physical Chemistry)	2
		DCECHE -106N	Inorganic Chemistry III (Selected Topics In Inorganic Chemistry)	2
		DCECHE-107(P)N	Practical Work based on DCECHE -105 and DCECHE -106	2
	Group-E	DCEVS-105N	Environmental Pollutions	2
		DCEVS-106N	Remote Sensing, GIS and Hydrology	2
		DCEVS-107(P)N	Practical Work based on DCEVS-105N & DCEVS-106N	2
Literature Survey				
UGLS-101N	Literature Survey of Elected Subject-1		4	
Total Credit (5 th Semester)			20	
VI	Skill Enhancement Course			
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge		4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy	2
DCEPHS -109N		Solid State Physics and Advanced Electronics	2	
DCEPHS-110(P)N				

			Practical Work based on DCEPHS-108 and DCEPHS-109	2
	Group-B	DCECHE -108N	Organic Chemistry III (Selected Topics In Organic Chemistry)	2
		DCECHE -109N	Physical Chemistry III (Selected Topics In Physical Chemistry)	2
		DCECHE-110(P)N	Practical Work based on DCECHE -108 and DCECHE -109	2
	Group-E	DCEVS-108	Statistics and Environmental Quality Assessment	2
		DCEVS-109	Environmental geology and earth resources	2
		DCEVS-110P	Practical Work based on DCEVS-108N & DCEVS-109N	2
Research Project				
UGRP-102N	Research Project on Elected Subject-2		4	
Total Credit (6 th Semester)				20

C-12: Combination (Physics, Computer Science, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGCS-101N	Computer Fundamental & PC Software	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGCS-101(P)N	Practical Work based on UGCS -101N	2
	UGEVS-101(P)N	Practical Work Based on UGEVS-101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
Total Credit (1 st Semester)			20
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGCS-102N	C Programming	2
	UGEVS-102	Ecology and Biodiversity Conservation	2
	UGPHS -102(P)N	Practical Work based on UGPHS -102N	2
	UGCS-102(P)N	Practical Work based on UGCS -102N	2
	UGEVS-102(P)N	Practical Work based on UGEVS-102N	2
	Skill Enhancement Course		
	SBSEVS-02N	Environmental Impact Assessment and Legislation	4
	Ability Enhancement Course		
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 4
Total Credit (2 nd Semester)			20
III	Compulsory Core Course		
	UGPHS -103N	Electromagnetism	2
	UGCS-103N	Data Structures	2
	UGEVS-103	Environmental Microbiology and Biotechnology	2
	UGPHS -103(P)N	Practical Work based on UGPHS -103N	2
	UGCS-103(P)N	Practical Work based on UGCS -103N	2
	UGEVS-103(P)N	Practical Work Based on UGEVS-103N	2
	Skill Enhancement Course		
	SBSCS-01N	Discrete Mathematics	4
	Ability Enhancement Course		
	AECEA OR AECSWM	Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 4

	Total Credit (3 rd Semester)			20
IV	Compulsory Core Course			
	UGPHS -104N	Analog and Digital Electronics		2
	UGCS-104N	Introduction to Database Management System		2
	UGEVS-104N	Plant Physiology and Biochemistry		2
	UGPHS -104(P)N	Practical Work based on UGPHS -104N		2
	UGCS-104(P)N	Practical Work based on UGCS -104N		2
	UGEVS-104(P)N	Practical Work Based on UGEVS-104N		2
	Skill Enhancement Course			
	SBSPHS-02N	Modern physics		4
	Ability Enhancement Course			
AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]		4 4	
Total Credit (4 th Semester)			20	
V	Skill Enhancement Course			
	SBSMM-03N	Elementary Analysis		4
	Discipline Centric Elective Course (Chose any two group from A, B and E)			
	Group-A	DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2
	Group-D	DCECS -105N	Computer Network	2
		DCECS -106N	Operating System	2
		DCECS-107(P)N	Practical Work based on 106N	2
	Group-E	DCEVS-105N	Environmental Pollutions	2
		DCEVS-106N	Remote Sensing, GIS and Hydrology	2
		DCEVS-107P	Practical Work based on DCEVS-105N & DCEVS-106N	2
Literature Survey				
UGLS-101N				
Total Credit (5 th Semester)			20	
VI	Skill Enhancement Course			
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge		4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy	2
		DCEPHS -109N	Solid State Physics and Advanced Electronics	2
		DCEPHS-110(P)N	Practical Work based on DCEPHS-108 and DCEPHS-109	2
	Group-D	DCECS -108N	C++ and Object Oriented Programming	2
		DCECS -109N	Software Engineering	2
		DCECS-110(P)N	Practical Work based on 108	2
	Group-E	DCEVS-108N	Statistics and Environmental Quality Assessment	2
		DCEVS-109N	Environmental geology and earth resources	2
		DCEVS-110(P)N	Practical Work based on DCEVS-108 &DCEVS-109	2
Research Project				
UGRP-102N	Research Project on Elected Subject-2		4	
Total Credit (6 th Semester)			20	

C-13: Combination (Physics, Statistics, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGSTAT-101N	Statistical Methods	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101N	2
	UGSTAT-101(P)N	Practical Work based on UGSTAT -101N	2

			2	
	Skill Enhancement Course			
	SBSEVS-01N	Energy Resources and Green Technology	4	
	Ability Enhancement Course			
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4	
	Total Credit (1 st Semester)		20	
II	Compulsory Core Course			
	UGPHS -102N	Oscillation, waves and electrical circuits	2	
	UGSTAT-102N	Probability, Distribution and Statistical Inference	2	
	UGEVS-102	Ecology and Biodiversity Conservation	2	
	UGPHS -102(P)N	Practical Work based on UGPHS -102N	2	
	UGSTAT-102(P)N	Practical Work based on UGSTAT -102N	2	
	Skill Enhancement Course			
	SBSEVS-02N	Environmental Impact Assessment and Legislation	4	
	Ability Enhancement Course			
	AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties OR Ability Enhancement Course in Health & Hygiene	4 4	
		Total Credit (2 nd Semester)		20
III	Compulsory Core Course			
	UGPHS -103N	Electromagnetism	2	
	UGSTAT-103N	Sampling Theory and Design of Experiments	2	
	UGEVS-103	Environmental Microbiology and Biotechnology	2	
	UGPHS -103(P)N	Practical Work based on UGPHS -103N	2	
	UGSTAT-103(P)N	Practical Work based on UGSTAT -103N	2	
	UGEVS-103(P)N	Practical Work Based on UGEVS-103N	2	
	Skill Enhancement Course			
	SBSCS-01N	Discrete Mathematics	4	
	Ability Enhancement Course			
	AECEA OR AECSWM	Ability Enhancement Course in Environment Awareness Or Ability Enhancement Course in Solid Waste Management	4 4	
		Total Credit (3 rd Semester)		20
IV	Compulsory Core Course			
	UGPHS -104N	Analog and Digital Electronics	2	
	UGSTAT-104N	Applied Statistics	2	
	UGEVS-104N	Plant Physiology and Biochemistry	2	
	UGPHS -104(P)N	Practical Work based on UGPHS -104N	2	
	UGSTAT-104(P)N	Practical Work based on UGSTAT -104N	2	
	UGEVS-104(P)N	Practical Work Based on UGEVS-104N	2	
	Skill Enhancement Course			
	SBSPHS-02N	Modern physics	4	
	Ability Enhancement Course			
	AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]	4 4	
		Total Credit (4 th Semester)		20
V	Skill Enhancement Course			
	SBSMM-03N	Elementary Analysis	4	
	Discipline Centric Elective Course (Chose any two group from A, B and E)			
	Group-A	DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2
	Group-D	DCESTAT -105N	Advance Statistical Inference	2
		DCESTAT-106N	Basic Knowledge of Statistical Softwares	2
DCESTAT-107(P)N		Practical Work based on DCESTAT -105N and DCESTAT -106N	2	

	Group-E	DCEVS-105N DCEVS-106N DCEVS-107(P)N	Environmental Pollutions Remote Sensing, GIS and Hydrology Practical Work based on DCEVS-105N & DCEVS-106N	2 2 2	
	Literature Survey				
	UGLS-101N	Literature Survey of Elected Subject-1		4	
	Total Credit (5 th Semester)			20	
VI	Skill Enhancement Course				
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge		4	
	Discipline Centric Elective Course (Chose any two group as per Sem. V)				
	Group-A	DCEPHS -108N DCEPHS -109N DCEPHS-110(P)N	Quantum mechanics and spectroscopy Solid State Physics and Advanced Electronics Practical Work based on DCEPHS-108N and DCEPHS-109N	2 2 2	
		Group-D	DCESTAT -108N DCESTAT -109N DCESTAT-110(P)N	Official Statistics Operation Research Practical Work based on DCESTAT -108N and DCESTAT -109N	2 2 2
			Group-E	DCEVS-108 DCEVS-109 DCEVS-110P	Statistics and Environmental Quality Assessment Environmental geology and earth resources Practical Work based on DCEVS-108N & DCEVS-109N
	Research Project				
	UGRP-102N	Research Project on Elected Subject-2		4	
	Total Credit (6 th Semester)			20	

C-14: Combination (Physics, Mathematics, Environmental Science)

Semester	Course Code	Title of course	Credits
I	Compulsory Core Course		
	UGPHS -101N	Vector, Mechanics and General Physics	2
	UGMM-101N	Differential Calculus	2
	UGEVS-101N	Fundaments of Environmental Sciences	2
	UGPHS -101(P)N	Practical Work based on UGPHS -101	2
	UGMM-102N	Analytical Geometry	2
	UGEVS-101(P)N	Practical Work Based on UGEVS-101N	2
	Skill Enhancement Course		
	SBSEVS-01N	Energy Resources and Green Technology	4
	Ability Enhancement Course		
	AECEG OR AECHD	Ability Enhancement Course in English OR Ability Enhancement Course in Hindi	4 OR 4
	Total Credit (1 st Semester)		
II	Compulsory Core Course		
	UGPHS -102N	Oscillation, waves and electrical circuits	2
	UGMM-103N	Integral Calculus	2
	UGEVS-102N	Ecology and Biodiversity Conservation	2
	UGPHS -102(P)N	Practical Work based on UGPHS -102	2
	UGMM-104N	Differential Equation	2
	UGEVS-102(P)N	Practical Work Based on UGEVS-102N	2
	Skill Enhancement Course		
	SBSEVS-02N	Environmental Impact Assessment and Legislation	4
	Ability Enhancement Course		
	AECHRD	Ability Enhancement Course in Human Rights and Duties OR	4

	AECHH	Ability Enhancement Course in Health & Hygiene		4
	Total Credit (2 nd Semester)			20
III	Compulsory Core Course			
	UGPHS -103N	Electromagnetism		2
	UGMM-105N	Mechanics-I (Statics and Dynamics)		2
	UGEVS-103N	Environmental Microbiology and Biotechnology		2
	UGPHS -103(P)N	Practical Work based on UGPHS -103		2
	UGMM-106N	Mechanics-II (Dynamics and Hydrodynamics)		2
	UGEVS-103(P)N	Practical Work Based on UGEVS-103N		2
	Skill Enhancement Course			
	SBSCS-01N	Discrete Mathematics		4
	Ability Enhancement Course			
	AECEA	Ability Enhancement Course in Environment Awareness Or		4
AECSWM	Ability Enhancement Course in Solid Waste Management		4	
	Total Credit (3 rd Semester)			20
IV	Compulsory Core Course			
	UGPHS -104N	Analog and Digital Electronics		2
	UGMM-107N	Linear Algebra		2
	UGEVS-104N	Plant Physiology and Biochemistry		2
	UGPHS -104(P)N	Practical Work based on UGPHS -104		2
	UGMM-108N	Calculus of function of several variable and Vector Calculus		2
	UGEVS-104(P)N	Practical Work Based on UGEVS-104N		2
	Skill Enhancement Course			
	SBSPHS-02N	Modern physics		4
	Ability Enhancement Course			
	AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]		4 4
	Total Credit (4 th Semester)			20
V	Skill Enhancement Course			
	SBSMM-03N	Elementary Analysis		4
	Discipline Centric Elective Course (Chose any two group from A, E and C)			
	Group-A	DCEPHS -105N	Optics	2
		DCEPHS -106N	Thermal Physics	2
		DCEPHS-107(P)N	Practical Work based on DCEPHS -105N and DCEPHS -106N	2
	Group-E	DCEMM -109N	Abstract Algebra	2
		DCEMM -110N	Number Theory	2
		DCEMM-111(P)N	Viva Voce	2
	Group-C	DCEVS-105N	Environmental Pollutions	2
		DCEVS-106N	Remote Sensing, GIS and Hydrology	2
DCEVS-107(P)N		Practical Work based on DCEVS-105N & DCEVS-106N	2	
Literature Survey				
UGLS-101N	Literature Survey of Elected Subject-1		4	
	Total Credit (5 th Semester)			20
VI	Skill Enhancement Course			
	SBSSTAT-04N	Numerical Methods & Basic Computer Knowledge		4
	Discipline Centric Elective Course (Chose any two group as per Sem. V)			
	Group-A	DCEPHS -108N	Quantum mechanics and spectroscopy	2
		DCEPHS -109N	Solid State Physics and Advanced Electronics	2
		DCEPHS-110(P)N	Practical Work based on DCEPHS-108N and DCEPHS-1098	2
	Group-D	DCEMM -112N	Advance Analysis	2
		DCEMM -113N	Function of Complex Variable	2
		DCEMM-114(P)N	Viva Voce	2
	Group-C	DCEVS-108N	Statistics and Environmental Quality Assessment	2
		DCEVS-109N	Environmental geology and earth resources	2
DCEVS-110(P)N		Practical Work based on DCEVS-108N & DCEVS-109N	2	
Research Project				
UGRP-102N	Research Project on Elected Subject-2		4	
	Total Credit (6 th Semester)			20

1.	APPENDIX-I	Detailed Programme Structure & Syllabus
2.	APPENDIX-II	Guidelines for Research Project (UGRP-102N) is available at link: http://14.139.237.190/upload_pdf/01_02_2023_Guidelines_fo_Project_Lit_Survey_Dissertation.pdf
3.	APPENDIX-III	Guidelines for Preparing report on Literature Survey is available at link: http://14.139.237.190/upload_pdf/01_02_2023_Common_Guidelines_for_Literature_Review.pdf
4.	APPENDIX-IV	Internship Policy: Guidelines and Procedures (With Effect From Academic Year 2023-24) is available at link: http://14.139.237.190/upload_pdf/01_02_2023_Guidelines_for_Internship.pdf