Govt. College for Women,
Parade Ground, Jammu
Autonomous College under University of Jammu

Syllabus of department of Environmental Sciences for B.A./B.Sc /B.Com./BBA/BCA (CBCS)

(Effective from academic year 2020,2021,2022,2023)

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Preamble

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The endeavour of any university programme is to prepare its students to be upright and productive citizens. Accordingly, GCW Parade Ground Jammu is moulding its undergraduate programmes to a Learning Outcome-based Curriculum Framework (LOCF).

The LOCF approach is envisioned to provide a focussed, outcome-based syllabus at the undergraduate level with an agenda to structure the teaching-learning experiences in a more student-centric manner. The LOCF approach has been adopted to strengthen students' experiences as they engage themselves in the programme of their choice. The undergraduate Programmes will prepare the students for both, academia and employability.

Each programme vividly elaborates its nature and promises the outcomes that are to be accomplished by studying the courses. The programmes also state the attributes that it aims to inculcate at the point of graduation. These attributes encompass values related to wellbeing, emotional stability, critical thinking, social justice and skills for employability. In short, each programme prepares students for sustainability and lifelong learning.

The new curriculum in Environmental Sciences offers a rigorous basis for much of the advanced thinking in the Environmental Sciences discipline. The programme is consistent with national standards in the Environmental Sciences discipline. It offers training that is comparable to that of an undergraduate student at the national level.

G C W Parade, Jammu hopes that the LOCF approach in programme of Environmental Sciences will help students in making an informed decision regarding the goals that they wish to pursue in further education and life for a sustainable world.

1. Course Structure

1.1 Alignment with CBCS

The Environmental Sciences programme is aligned with Choice Based Credit System (CBCS) adopted by G C W Parade, Jammu..

1.2 Types of Courses

The following types of courses are offered under CBCS:

Ability Enhancement Compulsory Course(AECC) : Every student has to study compulsory module course in Environmental Sciences in Sem I and II
Skill Enhancement Course (SEC). A student is to take one such course in Semester III,IV,V,VI,

1.3 Number of Courses and Credits

Ability Enhancement Compulsory course,Module Course: 2 (2 credits each)
Skill Enhancement Courses (SEC): 4 (4 credits each)

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Learning Outcome-based Approach
The course will empower the undergraduate students by:
i.Gaining an in-depth knowledge on natural processes that sustain life and govern economy
ii.Predicting the consequences of human actions on the web of life and quality of human life
iii.Developing critical thinking for shaping strategies (scientific,social,economic and legal) for environmental protection and conservation of biodiversity,social equity and sustainable development
iv.Acquiring values and attitudes towards understanding complex environmental-economic-social challenges and participating actively in solving current environmental problems and preventing the future ones
v.Adopting sustainability as a practice in life,society and industry.

The curriculum allows students to choose elective courses from a set of courses with contemporary relevance,

Upon completion of this programme, a student will have the necessary skills to understand and analyse in a logical manner all major environmental phenomenon.

Qualification Description
Graduates will evolve into ecologically informed and socially responsible citizens who are empowered to protect to protect the natural resources while ensuring sustainable lifestyle and developmental model

Teaching Learning Process

Teaching and learning in this programme involves classroom lectures ,tutorials, field visit and ICT lectures.

COURSE OFFERED (ENVIRONMENTAL SCIENCES).

SEMESTER	CORE COURSE	AECC	SKILL

I	X	Environmental Sciences-I	X
II	X	Environmental Sciences-II	X
III	X	X	Solid Waste Management
IV	X	X	Environmental Impact Assessment
V	X	X	Green Technology
VI	X	X	Pollution Abatement Technologies

SCHEME FOR INTERNAL ASSESSMENT AND EXTERNAL EXAMINATION(AECC) SemI and II

Examination(Theory)	**Syllabus to be covered in the examination**	**Time allotted**	**% Weightage (Marks)**
Internal Assessment Test	Up to 50% (after days)	1hour	20 % (10marks
External End Semester University Examination	Up to 100 % (after days)	3hour	80% (40marks)
Total			50

Scheme for Internal assessment Test Internal assessment test of 10 marks to be based on questions from syllabus / field visit.

Scheme for End Semester Examination External assessment of 40 marks will consist of two sections A and B.Section A will consist of six short answer type questions of two marks each.There will be two questions from each unit and candidate has to answer any five questions out of six. Section B consists of three long answer type question of 10 marks each, one from each unit with internal choice.

SCHEME FOR INTERNAL ASSESSMENT AND EXTERNAL EXAMINATION(SEC) Sem III , IV, V,VI

Examination(Theory)	**Syllabus to be covered in the examination**	**Time allotted**	**% Weightage (Marks)**

Internal Assessment Test	Up to 50% (after days)	1hour	20 % (10marks
External End Semester University Examination	Up to 100 % (after days)	3hour	80% (80marks)
Total			100

Scheme for Internal assessment Test: Assessment test of 20 marks based on the syllabus.

Scheme for End Semester Examination: Paper will consist of THREE Sections 'A' , 'B' , 'C'.

Section 'A' will consist of 5 short answer questions of 3 marks each, representing all units i.e. at least ONE from each unit. All questions would be compulsory. Candidate has to restrict the answers in 70 to 80 words.

Section 'B' will consist of 5 short answer questions of 7
marks each, representing all units i.e. at least ONE from each unit. All questions would be compulsory. Candidate has to restrict the answers in 250 to 300 words.

Section 'C' will consist of 4 long answer type questions of 15 marks each out of which candidate has to attempt any TWO. Candidate has to restrict the answer in 500 to 600 words.

Government College for Women Parade Ground, Jammu

Syllabus of department of Environmental Sciences for B.A./B.Sc /B.Com./BBA/BCA (CBCS)

Revised Syllabus

Semester Ist

Title : Environmental Studies

COURSE NO. -UESTS-101. **CREDITS-2**

MAX. MARKS -50. **TIME-2HRS**

External Examination : 40

Internal Assessment : 10

Course Objective

The aim of this course is to give an in-depth knowledge about various earth processes ,various types of pollution and legal aspect of various environmental issues

Course Learning Outcomes

At the end of the course a student will be able to understand

i.About earth processes,environment and ecology

ii.Environmental pollution and its control and management

iii.various environmental laws,treaties and ethics

Unit 1 Introduction to Earth ,Environment and Ecology

1.1 Environment: Concept and Components (Atmosphere,Lithosphere and Hydrosphere)

1.2 Environmental Studies:Scope and Multidisciplinary Nature

1.3 Ecosystem: Structure ,function and types(Brief concept of Terrestrial and Aquatic ecosystem)

1.4 Food chain, Food web and Ecological pyramids

1.5 Ecological succession : Definition, types,process, Hydrosere,Xerosere

Unit 2: Environmental pollution

2.1 Definition ,causes, effects and control measures of air,water and noise pollution

2.2 Global warming and ozone layer depletion

2.3 Acid rain : Causes ,effects and control measures

2.4 Earth processes (With special emphasis on weathering)and their role in environmental pollution

2.5 Solid waste and electronic waste management

Unit 3: Environmental Treaties, Laws and Ethics

3.1 Environmental treaties: Montreal protocol ,Kyoto Protocol and Convention on Biodiversity

3.2 Environmental laws of India

a.Water(Prevention and control of pollution) act,1974
b.Air (Prevention and control of pollution) act,1981
c.Environment Protection, act1986

3.3 National Green Tribunal
3.4 Environmental ethics
3.5 Concept of Sustainability and sustainable development

Field / practical work:
All the students are required to undertake the following practical work
1. Record the types of pollution of any visited area/your area
2.To identify the sources of air pollution in your area/any visited area
3.To identify the sources of water pollution in your area/any visited area
4.To identify the sources of noise pollution in your area/any visited area
5.To identify the sources of solid waste pollution in your area/any visited area
6.To assess the solid waste generation per day in your house
7.To assess the solid waste generated per day per person in your house

Note for paper setting:
Scheme for Internal assessment Test: Internal assessment test of a10 marks to be based on questions from syllabus / field visit.
Scheme for End Semester Examination: External assessment of 40 marks will consist of two sections A and B.Section A will consist of six short answer type questions of two marks each.There will be two questions from each unit and candidate has to answer any five questions out of six. Section B consists of three long answer type question of 10 marks each, one from each unit with internal choice.

Teaching Learning Process
Lectures , tutorials , Field visit, ICT enabled lectures

Assessment Methods
Internal assessment and final examination as per CBCS rules

Semester 2nd
Title :Environmental Studies

COURSE NO. -UESTS-201. **CREDITS-2**
MAX. MARKS -50. **TIME-2HRS**

External Examination : 40
Internal Assessment : 10

Course Objective

The aim of this course is to give the students first hand knowledge about biodiversity and its conservation,various natural resources and their management,disaster management and certain aspects of human health and environment

Course Learning Outcomes

At the end of the course a student will be able to understand

i.Biodiversity,its crucial role in human welfare and its conservation
ii.Various natural resources and their management
iii.Various kinds of disasters ,human disease and human health

Unit 1: Biodiversity and its conservation

1.1 Biodiversity: Definition, levels of biodiversity(Genetic ,species and ecosystem),values of biodiversity
1.2 India as a mega diversity Nation, Biogeographic zones of India.
1.3 IUCN classification of threatened species, Hotspots of biodiversity.
1.4 Threats to Biodiversity: Habitat loss, poaching of wildlife, Man-Wildlife conflict
1.5 Conservation of biodiversity :in-situ and ex-situ conservation

Unit 2 :Natural resources and their conservation

2.1 Forest resources:Causes and Consequences of deforestation ,Conservation of forests.
2.2 Water Resources:Uses and consequences of overutilization of water ,concept of rainwater harvesting
2.3 Energy resources:Renewable and non-renewable energy resources, Growing energy needs and Alternate energy sources
2.4 Land resources :soil erosion desertification, impacts of modern agriculture on environment
2.5 Case studies: National solar mission, water conflicts

Unit 3: Disaster management,Human communities, Environmental health and activism

3.1 Introduction to natural disasters,disaster management and disaster management cycle
3.2 Common Diseases:Air borne diseases(Tuberculosis, influenza), food-borne diseases(Cholera, Hepatitis) Vector borne diseases (malaria, Dengue), Viral diseases(N Covid 19)
3.3 Drug addiction: causes ,symptoms ,prevention and rehabilitation
3.4 Role of Information Technology in environment and human health.
3.5 Environmental movements: Chipko Movement,Narmada Bachao Andolan, Silent Valley Movement ,Swacch Bharat Mission

Field / practical work:

All the students are required to undertake the following practical work

1. Record the biodiversity of any visited area/your area

2. To identify the natural resources of your area/any visited area

3. To identify the sources of energy used in your area/any visited area

4. Visit to Health Center for recording of common water ,air,food-borne diseases of your area

Note for paper setting:

Scheme for Internal assessment Test:. Internal assessment test of 10 marks to be based on questions from syllabus / field visit.

Scheme for End Semester Examination: External assessment will consist of two sections A and B.Section A will consist of six short answer type questions of two marks each. There will be two questions from each unit and candidate has to answer any five questions out of six. Section B consists of three long answer type question of 10 marks each,one from each unit with internal choice.