FACULTY OF LIFE SCIENCES

SYLLABUS

of

Environmental Studies
For
Semester-III

Bachelor of Science (Medical) / Bachelor of Science (Non -Medical) / Bachelor of Science (Computer Science) / Bachelor of Commerce / Bachelor of Business Administration / Bachelor of Science (Home Science) / Bachelor of Computer Applications /Bachelor of Science (Information Technology) / Bachelor of Science (Biotechnology)/ Master of Commerce (Five Year Integrated Programme) / Bachelor of Science (Economics)/ Master of Science (Mathematics) (Five Year Integrated Programme)/Bachelor of Business(Airlines and Airport Management)/Bachelor of Science(Medical Laboratory Technology)/Master of Science(Physics) FYIP(Five Year Integrated Programme)

Session: 2025-26

Kanya Maha Vidyalaya, Jalandhar (Autonomous)
The Heritage Institution

SCHEME

Course Code: VACE–3221

Course Title: Environmental Studies

Bachelor of Science (Medical) / Bachelor of Science (Non -Medical) / Bachelor of Science (Computer Science) / Bachelor of Commerce / Bachelor of Business Administration / Bachelor of Science (Home Science) /Bachelor of Science (Biotechnology)/ Master of Commerce (Five Year Integrated Programme) / Bachelor of Science (Economics)/ Master of Science (Mathematics) (Five Year Integrated Programme)/Bachelor of Business(Airlines and Airport Management)/Bachelor of Science(Medical Laboratory Technology)/Master of Science(Physics) FYIP(Five Year Integrated Programme) (SEMESTER-III)

Course Code	Course Title	Course Type	Hours/ Week	Credit L-T-P	Marks			Examination time (Hours)
					Total	Theory	CA	
VACE-3221	Environmental Studies (Compulsory)	VAC	2-0-0	2-0-0	50	35	15	3

***VAC-Value Added Course**

Course Code: VACE-3221
Course Title: Environmental Studies

COURSE OUTCOMES:

After passing this course, students will be able to:

- CO1. Understand the concept and need of environmental education and role of an individual in conservation of natural resources.
- CO2. Learn about role of major Eco system and their conservation and Develop desirable attitude, value and respect for protection of Biodiversity.
- CO3. Learn about the control measure of pollution and solid waste management and climate change and global warming.
- CO4. Knowledge regarding welfare programmes and Human rights and understand the role of different agencies in the protection of environment

Course Code: VACE-3221
Course Title: Environmental Studies
(Theory)

Time: 3 Hrs. **Max. Marks: 50**
Credit: 2-0-0 **Theory: 35**
CA: 15

Instructions for the Paper Setter:
Eight questions of equal marks (7 marks) are to be set, two in each out of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Unit I

1. **The multidisciplinary nature of environmental studies**
   - Definition, scope and importance, Need for public awareness

2. **Natural resources and associated problems.**

(a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction,mining, dams and their effects on forests and tribal people.

(b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflictsover water, dams-benefits and problems.

(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineralresources, case studies.

(d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use ofalternate energy sources, case studies.

(f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion anddesertification.

- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles.

Unit II

3. **Ecosystems**

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

4. Biodiversity and its conservation

- Introduction – Definition: genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and optionvalues
- Biodiversity at global, national and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
- Endangered and endemic species of India
- Conservation of biodiversity: *In-situ* and *Ex-situ* conservation of biodiversity

Unit III

5. Environmental Pollution

- Definition, causes, effects and control measures of Air pollution, Water pollution, Soil pollution , Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
- Solid waste management: Causes, effects and control measures of urban and industrialwastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

6. Social Issues and the Environment

- From unsustainable to sustainable development
- Urban problems and related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.

- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents andholocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products
- Public awareness

Unit IV

7. Human Population and the Environment

- Population growth, variation among nations
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights
- Value Education
- HIV / AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and Human Health

8. Introduction to Environmental Laws, Environmental Audit and Impact Assessment

- Constitutional provisions- Article 48A
- Article 51A(g) and other derived environmental rights
- Environmental Protection Act, 1986
- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and control of Pollution) Act, 1974
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Environmental risk assessment Pollution control and management
- Waste Management- Concept of 3R (Reduce, Recycle and Reuse)
- Ecolabeling /Ecomark scheme

References:

1. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
2. Down to Earth, Centre for Science and Environment, New Delhi.
3. Heywood, V.H. & Waston, R.T. 1995. Global Biodiversity Assessment, Cambridge House, Delhi.
4. Joseph, K. & Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
5. Kaushik, A. & Kaushik, C.P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
6. Rajagopalan, R. 2011. Environmental Studies from Crisis to Cure. Oxford University Press, New Delhi.
7. Sharma, J. P., Sharma. N.K. & Yadav, N.S. 2005. Comprehensive Environmental Studies, Laxmi Publications, New Delhi.
8. Sharma, P. D. 2009. Ecology and Environment, Rastogi Publications, Meerut.
9. State of India's Environment 2018 by Centre for Sciences and Environment, New Delhi
10. Subramanian, V. 2002. A Text Book in Environmental Sciences, Narosa Publishing House, New Delhi.

FACULTY OF LIFE SCIENCES

SYLLABUS

of

Environmental Studies

For

(Semester IV)

Bachelor of Computer Applications/ Bachelor of Science (Information Technology)/Bachelor of Vocation (Retail Management)/Bachelor of Vocation (Animation)/Bachelor of Vocation (Nutrition and Dietetics)/ Bachelor of Vocation (Beauty and Wellness)/ Bachelor of Vocation (Artificial Intelligence and Data Science)/ Bachelor of Vocation (Hospitality and Tourism)/Bachelor of Science (Fashion Designing)/Bachelor of Arts/Bachelor of Arts (Journalism and Mass Communication)/ Master of Arts (English)
FYIP (Five Year Integrated Programme)

Session: 2025-26

Kanya Maha Vidyalaya, Jalandhar (Autonomous)
The Heritage Institution

SCHEME

Course Code: VACE–4221

Course Title: Environmental Studies

Bachelor of Computer Applications/ Bachelor of Science (Information Technology)/Bachelor of Vocation (Retail Management)/Bachelor of Vocation (Animation)/Bachelor of Vocation (Nutrition and Dietetics)/ Bachelor of Vocation (Beauty and Wellness)/ Bachelor of Vocation (Artificial Intelligence and Data Science)/ Bachelor of Vocation (Hospitality and Tourism)/Bachelor of Science (Fashion Designing)/Bachelor of Arts/Bachelor of Arts (Journalism and Mass Communication)/ Master of Arts (English) **FYIP (Five Year Integrated Programme)** **(SEMESTER-IV)**								
Course Code	**Course Title**	**Course Type**	**Hours/ Week**	**Credit L-T-P**	**Marks**			**Examination time (Hours)**
					Total	**Theory**	**CA**	
VACE-4221	Environmental Studies (Compulsory)	VAC	2-0-0	2-0-0	50	35	15	3

***VAC-Value Added Course**

Course Code: VACE-4221
Course Title: Environmental Studies

COURSE OUTCOMES:

After passing this course, students will be able to:

- CO1. Understand the concept and need of environmental education and role of an individual in conservation of natural resources.
- CO2. Learn about role of major Eco system and their conservation and Develop desirable attitude, value and respect for protection of Biodiversity.
- CO3. Learn about the control measure of pollution and solid waste management and climate change and global warming.
- CO4. Knowledge regarding welfare programmes and Human rights and understand the role of different agencies in the protection of environment

Course Code: VACE-4221
Course Title: Environmental Studies
(Theory)

Time: 3 Hrs. **Max. Marks: 50**
Credit: 2-0-0 **Theory: 35**
CA: 15

Instructions for the Paper Setter:
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i. Environmental risk assessment Pollution control and management
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k. Ecolabeling /Ecomark scheme

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