

# **FACULTY OF LIFE SCIENCES**

## **SYLLABUS**

**of**

**Environmental Studies (COMPULSORY PAPER)**

**for**

**B.Sc. (Medical) / B.Sc. (Non Medical) / B.Sc. (Computer Science) / B.Com. /  
BBA/ B.Sc. (Home Science) / BCA/B.Sc(IT)/ B.Sc. (BT)/ B.Com (Hons.)/ BSc  
Economics/BSc (hons.) Physics**

**(Semester III)**

**(Under Continuous Evaluation System)**

**(12+3 System of Education)**

**Session: 2022-23**



**The Heritage Institution**

**KANYA MAHA VIDYALAYA**

**JALANDHAR**

**(Autonomous)**

**Kanya Maha Vidyalaya**  
**Scheme and curriculum of Examinations of three year degree**  
**program**  
**Environmental Studies (COMPULSORY PAPER)**  
**Semester-III (session 2022-23)**

<p style="text-align: center;"><b>B.Sc. (Medical) / B.Sc. (Non Medical) / B.Sc. (Computer Science) / B.Com. / BBA/ B.Sc. (Home Science) / BCA/B.Sc(IT)/ B.Sc. (BT)/ B.Sc (Hons.) Physics/ B.Com (Hons.)/ BSc Economics.</b></p> <p style="text-align: center;"><b>(semester-III)</b></p>							
Course Code	Course Title	Course Type	Marks				Examination time (in Hours)
			Total	Theory	Field work	CA	
AECE-3221	Environmental studies (compulsory)	AECC	100	60	20	20	3

**\*AECC- Ability enhancement compulsory course**

**B.Sc. (Medical) / B.Sc. (Non Medical) / B.Sc. (Computer Science) / B.Com. / BBA/ B.Sc. (Home Science) / BCA/B.Sc(IT)/ B.Sc. (BT)/ B.Sc (Hons.) Physics/ B.Com (Hons.)/BSc. Economics**

**Semester- III**

**COURSE OUTCOMES:**

**AECE-3221- Environmental Studies**

- **CO1) Understand the concept and need of environmental education.**
- **CO2) Understand the role of an individual in conservation of natural resources.**
- **CO3) Learn about role of major Eco system and their conservation.**
- **CO4) Develop desirable attitude,value and respect for protection of Biodiversity.**
- **CO5) Learn about the control measure of pollution and solid waste management.**
- **CO6) Understand the role of different agencies in the protection of environment.**
- **CO7)Knowledge regarding welfare programmes and Human rights.**
- **CO8) Knowledge about the applied value of environmental studies.**

**SYLLABUS**  
**of**  
**Environmental Studies (COMPULSORY PAPER)**  
**For**  
**BA/BA.JMC/ B.Sc FD/BA. hons. English**  
**(Semester IV)**

**Session: 2022-23**



**The Heritage Institution**  
**KANYA MAHA VIDYALAYA**  
**JALANDHAR**  
**(Autonomous)**

**Scheme and curriculum of Examinations of three year degree  
program**

**Environmental Studies (COMPULSORY PAPER)**

**Semester-IV (session 2022-23)**

BA/BA.JMC/ B.sc FD/BA hon's.English Semester-IV							
Course Code	Course Title	Course Type	Marks				Examination time (in Hours)
			Total	Ext.		CA	
				Theory	Field work		
AECE- 4221	Environmental studies	AECC	100	60	20	20	3

**\*AECC- Ability enhancement compulsory course**

**BA /BA.JMC/ /B.sc FD/BA.hons. English**  
**Semester- IV**

**COURSE OUTCOMES:**

**AECE-4221- Environmental Studies**

- CO1) Understand the concept and need of environmental education.**
- CO2) Understand the role of an individual in conservation of natural resources.**
- CO3) Learn about role of major Eco system and their conservation.**
- CO4) Develop desirable attitude,value and respect for protection of Biodiversity.**
- CO5) Learn about the control measure of pollution and solid waste management.**
- CO6) Understand the role of different agencies in the protection of environment.**
- CO7)Knowledge regarding welfare programmes and Human rights.**
- CO8) Knowledge about the applied value of environmental studies.**

# **FACULTY OF LIFE SCIENCES**

## **SYLLABUS**

**of**

**Environmental Studies (COMPULSORY PAPER)**

**for**

**B. Voc (Retail Mgt)/B.Voc (MSP)/ B.Voc (Photography&journalism)**

**B.Voc (Animation)/B.Voc (TDAT)/B.Voc. (NEH)/B.Voc beauty & wellness  
B.Voc (Artificial intelligence and data science),B.Voc( Hospitality and tourism)**

**(Semester IV)**

**(Under Credit Based Continuous Evaluation Grading System)**

**Session: 2022-23**



**The Heritage Institution**

**KANYA MAHA VIDYALAYA**

# JALANDHAR

## (Autonomous)

### Scheme of Studies and Examination Semester- IV (Session 2022-23) Environmental Studies (COMPULSORY PAPER)

B.Voc (RM, MSP, Animation, TDAT, NEH, Beauty & Wellness,Artificial intelligence and data science,hospitality and tourism) (SEMESTER-IV)									
Course Code	Course Title	Course Type	Hours/ week	Credits L-T-P	Marks				Examination time (in Hours)
					Total	Ext.		CA	
						Theory	Field work		
AECE-4221	Environmental studies	C	4	4-0-0	100	60	20	20	3

**\*C- compulsory course**



**B.Voc (RM, MSP, Animation, TDAT, NEH, Beauty & Wellness, Artificial intelligence and data science, hospitality and tourism)**

**SEMESTER -IV**

**COURSE OUTCOMES:**

**AECE-4221- Environmental Studies**

**CO1) Understand the concept and need of environmental education.**

**CO2) Understand the role of an individual in conservation of natural resources.**

**CO3) Learn about role of major Eco system and their conservation.**

**CO4) Develop desirable attitude,value and respect for protection of Biodiversity.**

**CO5) Learn about the control measure of pollution and solid waste management.**

**CO6) Understand the role of different agencies in the protection of environment.**

**CO7)Knowledge regarding welfare programmes and Human rights.**

**CO8) Knowledge about the applied value of environmental studies.**

**B.Sc. (Medical) / B.Sc. (Non Medical) / B.Sc. (Computer Science) / B.Com. / BBA/ B.Sc.  
(HomeScience) / BCA/B.Sc(IT)/ B.Sc. (BT)/ B.Sc (Hons.) Physics/ B.Com (Hons.)/Bsc. Economics  
Semester-III  
(session 2022-23)**

**Environmental studies (COMPULSORY PAPER)**

**Course Code: AECE-3221  
(Theory)**

**Time: 3Hrs.**

**Max. Marks: 100**

**Theory: 60**

**Project Report: 20**

**CA: 20**

**Instructions for the Paper Setter:**

The question paper should carry 60 marks.

The structure of the question paper being:

**Part-A**, Short answer pattern – 20 marks

Attempt any five questions out of seven. Each question carries 4 marks. Answer to each question should not exceed 2 pages

**Part-B**, Essay type with inbuilt choice – 40 marks

Attempt any five questions out of eight. Each question carries 8 marks. Answer to each question should not exceed 5 pages.

**Unit 1**

## **The multidisciplinary nature of environmental studies**

Definition, scope and importance, Need for public awareness

### **Unit 2**

#### **Natural Resources: Renewable and non-renewable resources:**

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, conflicts over water, dams-benefits and problems.
- (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, 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 of alternate energy sources, case studies.
- (f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
  - Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.

### **Unit 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)

## **Unit 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 option values
- 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 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 industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

## **Unit 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 and holocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products

- 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
- Public awareness

## **Unit 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
- Case Studies

## **Unit 8**

### **Field Work**

- Visit to a local area to document environmental assets river/forest/grassland/hill/mountain
- Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc

### **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.
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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

**B.A / B.A. (JMC) / B.Sc. (FD) /B.A (Hons.) in English**  
(session 2022-23)  
**Environmental Studies (COMPULSORY PAPER)**  
**Course Code: AECE-4221**  
(Theory)

**Time: 3 Hrs**

**Max. Marks: 100**  
**Theory: 60**  
**Project report: 20**  
**CA: 20**

**Instructions for the Paper Setter**

The question paper should carry 60 marks.

The structure of the question paper being:

**Part-A**, Short answer pattern – 20 marks

Attempt any five questions out of seven. Each question carries 4 marks. Answer to each question should not exceed 2 pages

**Part-B**, Essay type with inbuilt choice – 40 marks

Attempt any five questions out of eight. Each question carries 8 marks. Answer to each question should not exceed 5 pages.

**Unit 1**

**The multidisciplinary nature of environmental studies**

Definition, scope and importance, Need for public awareness

## **Unit 2**

### **Natural Resources: Renewable and non-renewable resources:**

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, conflicts over water, dams-benefits and problems.
- (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, 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 of alternate energy sources, case studies.
- (f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
  - Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.

## **Unit 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)

## **Unit 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 option values
- 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 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 industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

## **Unit 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
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Issues involved in enforcement of environmental legislation

Public awareness

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- Role of Information Technology in Environment and Human Health
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## **Unit 8**

### **Field Work**

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**Semester-IV (Session 2022-23)**

**Environmental Studies( compulsory paper)**

**Course Code: AECE-4221**

**(Theory)**

**Time: 3 Hrs**

**Credit: 4-0-0**

**Max. Marks: 100**

**Theory: 60**

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**CA: 20**

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Issues involved in enforcement of environmental legislation

Public awareness

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