

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/B.Sc (Hons.) maths**

(Semester III)

**(Under Continuous Evaluation System) (12+3 System
of Education)**

Session: 2021-22



The Heritage Institution

KANYA MAHA VIDYALAYA

JALANDHAR

(Autonomous)

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: 2021-22



The Heritage Institution

**KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)**

**Kanya Maha Vidyalaya program
Scheme and curriculum of Examinations of three year degree**

Environmental Studies (COMPULSORY PAPER)
Semester-III (session 2021-22)

<p style="text-align: center;">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.</p> <p style="text-align: center;">(semester-III)</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. Reflect upon the concept and need of environmental education.
- CO2. Define major eco-systems and their conservation.
- CO3. Understand the role of different agencies in the protection of environment.

- CO4. Develop desirable attitude, values and respect for protection of environment.

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

Session: 2021-22



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 2021-22)

BA/BA.JMC/ B.sc FD/BA.hons.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. Reflect upon the concept and need of environmental education.
- CO2. Define major eco-systems and their conservation.
- CO3. Understand the role of different agencies in the protection of environment.
- CO4. Develop desirable attitude, values and respect for protection of environment.

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: 2021-22



The Heritage Institution
KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)

**Scheme of Studies and Examination Semester-
IV (Session 2021-22)**

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
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***C- compulsory course**

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

SEMESTER -IV

COURSE OUTCOMES:

AECE-4221- Environmental Studies

- CO1. Reflect upon the concept and need of environmental education.
- CO2. Define major eco-systems and their conservation.

- CO3. Understand the role of different agencies in the protection of environment.
- CO4. Develop desirable attitude, values and respect for protection of environment.

**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 2021-22)**

Environmental studies (COMPULSORY PAPER)

Course Code: AECE-3221

(Theory)

Time: 3Hrs.

Max. Marks: 100

Theory: 60

Project Report:

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.
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

B.A / B.A. (JMC) / B.Sc. (FD) /B.A (Hons.) in English
(session 2021-22)

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
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation
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- Air (Prevention and Control of Pollution) Act, 1981
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- 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
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B.Voc (RM, MSP, Animation, TDAT, NEH, Beauty & Wellness, Artificial Intelligence and Data Science, Hospitality and Tourism)

Semester-IV (Session 2021-22)

Environmental Studies(compulsory paper)

Course Code: AECE-4221

(Theory)

Time: 3 Hrs

Credit: 4-0-0

Max. Marks: 100

Theory: 60

Project report: 20

CA: 20

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Issues involved in enforcement of environmental legislation

Public awareness

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