



# **K.M.G. COLLEGE OF ARTS AND SCIENCE** **(AUTONOMOUS)**

Approved by the Government of Tamil Nadu  
Permanently Affiliated to Thiruvalluvar University, Vellore.  
Recognized under Section 2(f) and 12(B) of the UGC Act 1956  
Accredited by NAAC (2<sup>nd</sup> Cycle) with (CGPA of 3.24/4) 'A' Grade

## **ENVIRONMENTAL SCIENCE**

**(FOR ALL UG PROGRAMMES)**

### **SYLLABUS FOR III SEMESTER** **(CHOICE BASED CREDIT SYSTEM)**

**Under**

### **LEARNING OUTCOMES-BASED CURRICULUM** **FRAMEWORK (LOCF)**

**(Effective for the Batch of Students Admitted from 2024-2025)**

**COURSE DESCRIPTORS**

<b>Title of the Course</b>	Environmental Science	<b>Hours/Week</b>	2
<b>Course Code</b>	AUES30	<b>Credits</b>	2
<b>Category</b>	Compulsory	<b>Year &amp; Semester</b>	II & III
<b>Prerequisites</b>	Basic Science about the Environment	<b>Regulation</b>	2024

**Objectives of the course:**

- To educate people about environmental issues and challenges.
- To provide information about the ecosystem and pollutions in environment.
- To motivate people to take action to protect and improve the environment.
- To encourage the equitable and sustainable use of resources

UNITS	Contents	COs	Cognitive Levels
<b>UNIT-I</b>	<p><b>INTRODUCTION TO ENVIRONMENTAL SCIENCES:</b></p> <p>NATURAL RESOURCES: Environmental Sciences - Relevance - Significance - Public awareness - Forest resources - Water resources - Mineral resources - Food resources - conflicts over resource sharing - Exploitation - Land use pattern - Environmental impact - fertilizer - Pesticide Problems - case studies.</p>	CO1	K1, K2,
<b>UNIT-II</b>	<p><b>ECOSYSTEM, BIODIVERSITY AND ITS CONSERVATION:</b></p> <p>Ecosystem - concept - structure and function - producers, consumers and decomposers - Food chain - Food web - Ecological pyramids - Energy flow - Forest, Grassland, desert and aquatic ecosystem. Biodiversity - Definition - genetic, species and ecosystem diversity - Values and uses of biodiversity - biodiversity at global, national (India) and local levels - Hotspots, threats to biodiversity - conservation of biodiversity - Insitu &amp; Exsitu.</p>	CO1, CO2	K1, K2, K3

<b>UNIT-III</b>	<b>ENVIRONMENTAL POLLUTION AND MANAGEMENT:</b>  Environmental Pollution - Causes - Effects and control measures of Air, Water, Marine, soil, solid waste, Thermal, Nuclear pollution and Disaster Management - Floods, Earth quake, Cyclone and Landslides. Role of individuals in prevention of pollution - pollution case studies.	CO1, CO3	K1, K2, K3, K4
<b>UNIT-IV</b>	<b>SOCIAL ISSUES - HUMAN POPULATION</b>  Urban issues - Energy - water conservation - Environmental Ethics - Global warming - Resettlement and Rehabilitation issues - Environmental legislations – Environmental production Act. 1986 - Air, Water, Wildlife and forest conservation Act - Population growth and Explosion - Human rights and Value Education - Environmental Health - HIV/AIDS - Role of IT in Environment and Human Health - Women and child welfare - Public awareness - Case studies.	CO1, CO3 CO4	K3, K4
<b>UNIT-V</b>	<b>FIELD WORK</b>  Visit to a local area / local polluted site / local simple ecosystem - Report submission	CO1 CO3 CO4	K3, K4, K5

**Recommended Text Books**

1. Connell, D.W. 2005. *Basic Concepts of Environmental Chemistry (2nd edition)*. CRC Press.
2. Pani, B. 2007. *Textbook of Environmental Chemistry*. IK international Publishing House.
3. Asthana, D. K. (2006). *Text Book of Environmental Studies*. S. Chand Publishing.
4. Basu, M., Xavier, S. (2016). *Fundamentals of Environmental Studies*, Cambridge University Press, India.

**Reference Books**

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P.H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.

5. Groom, Martha J. Gary K. Meffe, and Carl Ronald carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. *Threats from India's Himalaya dams*. *Science*, 339: 36-37.
7. McCully, P.1996. *Rivers no more: the environmental effects of dams*(pp. 29-64). Zed Books.
8. McNeil, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.

**Website and e-learning source**

[www.nacwc.nic.in](http://www.nacwc.nic.in)

[www.opcw.org](http://www.opcw.org)

**Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of the course the students should be able to

COs	CO Description	Cognitive Level
CO1	Understand the Environment and natural resources.	K1, K2,
CO2	Explain the ecosystems, biodiversity and their conservation.	K1, K2, K3
CO3	Identify the causes and effects of environmental pollution.	K1, K2, K3,K4
CO4	Measure the social impacts of human population	K3,K4
CO5	Made a report about the environmental issues.	K3,K4,K5

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	3	1	1	-	-	-	-	-	1	3	-	1
CO2	3	3	2	1	-	-	-	-	-	2	3	-	1
CO3	3	3	3	2	2	-	-	2	-	3	3	-	2
CO4	3	3	3	3	3	-	-	3	-	2	3	-	2
CO5	3	3	3	3	3	-	-	3	-	3	3	2	2



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## **VALUE EDUCATION**

**(FOR ALL UG PROGRAMMES)**

## **SYLLABUS FOR V SEMESTER** **(CHOICE BASED CREDIT SYSTEM)**

**Under**

## **LEARNING OUTCOMES-BASED CURRICULUM** **FRAMEWORK (LOCF)**

**(Effective for the Batch of Students Admitted from 2024-2025)**

## COURSE DESCRIPTORS

<b>Title of the Course</b>	VALUE EDUCATION	<b>Total Hours</b>	02
<b>Course Code</b>	AUVE50	<b>Credits</b>	02
<b>Category</b>	Compulsory	<b>Year &amp; Semester</b>	III & V
<b>Prerequisites</b>	-	<b>Regulation</b>	2024

**Objectives of the course:****This course aims to provide knowledge on**

- Human values are socially accepted norms to evaluate a person in society.
- Values structure and responsibilities of family.
- Ethical values in society as well as in their Profession.
- Social values Faith, service and secularism in society.
- Cultural values Effect of international affairs.

UNITS	Contents	COs	Cognitive Levels
<b>UNIT-I</b>	<b>Value Education</b> Value Education - Definition - its purpose and significance in the present world - Value system. Concept of Human Values - self introspection - Self-esteem. Meaning and Philosophy of Life. Duties and responsibilities.	CO1	K1, K2, K3
<b>UNIT-II</b>	<b>Family values</b> Family values – truth, commitment, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity and inclusiveness. Structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.	CO2	K1, K2, K3
<b>UNIT-III</b>	<b>Ethical values</b> Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Personality development - punctuality – Time, task and resource management - Leadership qualities - Problem solving and decision making skills - Interpersonal and Intra personal relationship – Team work – Positive and creative thinking.	CO3	K1, K2, K3

<b>UNIT-IV</b>	<p><b>Social values and Evils</b></p> <p>Social values - Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities. <b>Social Evils</b> – Corruption, Cybercrime, Terrorism – Alcoholism, Drug addiction – Dowry – Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.</p>	CO4	K1, K2 K3, K4
<b>UNIT-V</b>	<p>Effect of international affairs on values of life / Issue of Globalization - Modern warfare - Terrorism. Environmental issues - mutual respect of different cultures, religions and their beliefs. The role of culture and civilization – Holistic living – balancing the outer and inner – Body. The binding of man and nature – Environment conservation and enrichment.</p>	CO5	K1, K2

**Recommended Text Books**

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995)
2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.
3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.
4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)
5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.
6. M. M. M. Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

**Reference Books**

1. M.G. Chitakra: Education and Human Values, A.P.H. Publishing Corporation, New Delhi, 2003.
2. Chakravarthy, S.K: Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi, 1999.
3. Satchidananda, M.K: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991.
4. Das, M.S. & Gupta, V.K.: Social Values among Young adults: A changing Scenario, M.D. Publications, New Delhi, 1995.
5. Bandiste, D.D.: Humanist Values: A Source Book, B.R. Publishing Corporation, Delhi, 1999.
6. Ruhela, S.P.: Human Values and education, Sterling Publications, New Delhi, 1986.
7. Kaul, G.N.: Values and Education in Independent Indian, Associated Publishers, Mumbai, 1975.
8. NCERT, Education in Values, New Delhi, 1992.
9. Swami Budhananda (1983) How to Build Character A Primer: Rmakrishna Mission, New Delhi.
10. Awakening Indians to India, Chinmayananda Mission, 2003.

**Website and e-learning source**

1. [www.rkmissiondhe/.org/education.html/](http://www.rkmissiondhe/.org/education.html/)
2. [www.clallam;.org/lifestyle/education.html/](http://www.clallam;.org/lifestyle/education.html/)
3. [www.sun.com/./edu/progrmws/star.html/](http://www.sun.com/./edu/progrmws/star.html/)
4. [www.infoscouts.com](http://www.infoscouts.com)
5. [www.secretofsuccess.com](http://www.secretofsuccess.com)
6. [www.1millionpapers.com](http://www.1millionpapers.com)
7. <http://militaryfinance.umuc.edu/education/edu-network.html/>

**Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of the course the students should be able to

COs	CO Description	Cognitive Level
CO1	Explain about purpose and significance of values in life.	K1, K2, K3
CO2	Analyze the values and threats of family life for better social life.	K1, K2, K3
CO3	Describe the Ethical values of Profession and personal relationship.	K1, K2, K3
CO4	Predict the solutions for the Social Evils to a peaceful life.	K1, K2, K3, K4
CO5	Understand the Effect war and terrorism on international affairs.	K1, K2

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
<b>CO1</b>	-	3	2	2	3	-	-	-	3	1	1	-	3
<b>CO2</b>	2	3	3	3	3	-	3	2	3	3	1	1	3
<b>CO3</b>	3	3	3	3	3	2	3	3	3	2	-	-	3
<b>CO4</b>	1	3	3	3	3	-	3	2	3	3	1	1	3
<b>CO5</b>	-	3	2	2	2	-	1	2	2	1	-	-	1