St Aloysius College (Autonomous)

Mangaluru

Re-accredited by NAAC "A" Grade

Course structure and syllabus of

ENVIRONMENTAL STUDIES

AECC-1/2

(Ability Enhancement Compulsory Course)

Under NEP Regulations, 2021

(2021 – 22 ONWARDS)

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Re-accredited by NAAC with 'A' Grade with CGPA 3.62/4
Recognised by UGC as "College with Potential for Excellence"
Conferred "College with "STAR STATUS" by DBT, Government of India.
Centre for Research Capacity Building under UGC-STRIDE

Date: 18-12-2021

NOTIFICATION

Sub: Syllabus of **ENVIRONMENTAL STUDIES** under NEP Regulations, 2021. (As per Mangalore University guidelines)

Ref: 1. Decision of the Academic Council meeting held on 18-12-2021 vide (2021-22)
2. Office Notification dated 21-02-2022

Pursuant to the above, the Syllabus of **ENVIRONMENTAL STUDIES** under NEP Regulations, 2021 which was approved by the Academic Council at its meeting held on 18-12-2021 is hereby notified for implementation with effect from the academic year **2021-22**.

PRINCIPAL **REGISTRAR**

ST ALOYSIUS COLLEGE MANGALORE 575 003 AUTONOMOUS

To:

1. The Chairman/Dean/HOD.
2. The Registrar Office
3. Library

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC) IN ENVIRONMENTAL STUDIES - SYLLABUS

I DEGREE B. SC / B.A. / BCA / B.COM / BBA (COMPULSORY PAPER)

ENVIRONMENTAL STUDIES

Course Objectives:

1. To make students realize the importance and their role in the protection and maintenance of a healthy environment for sustainable development.
2. To enable students to grasp the significance and issues related to ecosystems, biodiversity, natural resources and ways of managing/ protecting them.
3. To enable students to have a nuanced understanding of environmental pollution, solid waste management and climate change and to act with concern on environmental issues.
4. To make students aware of the environmental policies and movements, and the role of individuals and communities in environmental protection for educating and inspiring the young minds.

Learning Outcomes:

At the end of the course, students will –

1. Understand the importance and dimension of a healthy environment, become environmentally conscious, skilled and responsible in all their actions with a concern for sustainable development.
2. Comprehend the significance and issues related to ecosystems, natural resources and bio- diversity and become aware of the need and ways to protect/ preserve them.
3. Grasp the issues related to environmental pollution, solid waste management and climate change, become conscious and proactive in the discharge of their responsibilities towards the environment.

4. Become aware and appreciate the values and concerns of environmental movements, policies, the role of communities and act responsibly on environment-related issues.

Course Outcomes:

1. Knowledge of the environment and the role of human beings in shaping the environment.
2. Understand various components of the environment and interact.
3. Critically appreciate the environmental concerns of today.

Pedagogy: Lectures/ Interactive Sessions/ Open Educational Resources (as reference materials) /Assignments/ Seminars/ Group discussions.

Course Code: G 702 SB 1.1
No. of Teaching Hours/Week: 2
Total Contact Hours: 28

SYLLABUS

UNIT 1: Introduction **7 hours**

1.1: Environmental Studies – Importance and scope, multidisciplinary nature, Concept of sustainability and sustainable development.

1.2: Ecosystems – Concept, structure and function, Pond ecosystem, Forest ecosystem, Food chains, Food webs, Concept of ecological succession.

1.3: Bio-geographical zones of India, Levels of biological diversity- Genetic, Species and ecosystem, Biodiversity Hotspots with special reference to India, Threats to biodiversity.

1.4: Conservation of biodiversity: In-situ and Ex-situ, Endangered and endemic species – Concept, Afforestation – Social forestry, Agroforestry, Green belt.

UNIT2: Environmental pollution and its management **7 hours**

2.1: Air pollution, water pollution, Causes, effects and control measures.

2.2: Climate change, global warming, ozone layer depletion, acid rain and its impact on human communities and agriculture.

2.3: Solid waste management - biodegradable and non-biodegradable waste, Segregation of domestic waste at source.

2.4: Impact of plastic on human and animal health

UNIT 3: Natural resources and management **7 hours**

3.1: Land resources and land-use changes, Land degradation, soil erosion and desertification.

3.2: Water: Use of surface and groundwater, Water conservation - rainwater harvesting,

Watershed management – Meaning and importance.

3.3: Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources.

3.4: Disaster management – Definition and types (Natural and Man-made), Self-protection during disasters (Fire, Floods, Earthquakes, landslides).

UNIT 4: Environmental Policies and Practices **7 hours**

4.1: Environmental ethics– Role of religion and cultures.

4.2: Environment movements – Chipko, Narmada Bachao Andolan, Silent valley, Bishnois of Rajastan.

4.3: Individual and community initiatives – Salu Marada Thimmakka, Concept of Sacred Groves (Devarakadu).

4.4: Environment Protection Act, The Wildlife Protection Act, 1972, National Environmental Policy, 2006 – Provisions and importance, Swachh Bharat Mission– Objectives, International agreements – Montreal and Kyoto protocols.

Suggested Reading:

1. Agarwal, K.C. (2001) *Environmental Biology*, Bikaner, Nidhi Pub.
2. Basker, Sushmitha & Bhasker, R. (2007) *Environmental Studies for Undergraduate Courses*, New Delhi, Unicorn Books.
3. Bharucha, Erach, (2013) *Textbook of Environmental Science*. Orient Black Swan.

4. Bhatt, K. N. (2010) *Population Environment and Health – emerging issues*, Jaipur, Rawat.

5. Carson, R. (2002) *Silent Spring*. Houghton Mifflin Harcourt.

6. Coenraads, Robert (2010) *Natural disasters and how we cope* Millennium House.

7. Hebbar, Aravinda, (2003) *Parisara Vijnana*,Udupi, Lathangi Prakashana.

8. Gadgil, M., & Guha, R. (1993). *This Fissured Land: An Ecological History of India*, Univ. of California Press.

9. Gleeson, B. and Low, N. (eds.) (1999). *Global Ethics and Environment*, London,Routledge.

10. Glejck, P. H. (1993). *Water in Crisis*. Pacific Institute for Studies in Dev.,Environment & Security. Stockholm Env. Institute,OUP.

11. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. (2006). *Principles of Conservation Biology*. Sunderland: Sinauer Associates.

12. McCully, P. (1996). *Rivers no more: the environmental effects of dams* (pp. 29-64) Zed Books.

13. McNeill, John R. (2000). *Something New Under the Sun: An EnvironmentalHistory* of *the Twentieth Century*.

14. Nandini, N. (2019). *A textbook on Environmental Studies (*AECC). Sapna BookHouse, Bengaluru.

15. Grumbine, R. Edward, and Pandit, M.K. (2013). *Threats from India's Himalayadams. Science*, 339: 36-37.

16. Odum, E. P. (1983) *Basic Ecology*, Saunders.

17. Odum, E.P., Odum, H.T. & Andrews, J. (1971). *Fundamentals of Ecology*, Philadelphia: Saunders.

18. Pandey, G.N. (1997) *Environmental Management.*Vikas Publishing House.

19. Roy, Pashupati Kumar and Kumar, Arvind (2008) *Environmental Resource Management*. Daya Pub.

20. Pepper, I.L, Gerba, C.P. & Brusseau, M.L. (2011). *Environmental and Pollution*

Science.

Academic Press.

21. Rao, M.N. & Datta, A.K. (1987). *Waste Water Treatment.* Oxford and IBH Pub.

22. Raven P.H., Hassenzahl, D.M. & Berg, L.R. (2012). *Environment*. 8th edition. John Wiley & Sons.

23. Rosencranz, A., Divan, S., & Noble, M. L. (2001). *Environmental law and policy in India*. Tripathi 1992.

24. Sengupta, R. (2003). *Ecology and economics: An approach to sustainabledevelopment* OUP.

25. Sharma, P.D. (2011) *Ecology and Environment,* Rastogi Publications.

26. Singh, Harimohan (2010) *Waste Water Treatment Technology*, Alfa Publications, New Delhi,

27. Singh, Janamjit (2006) *Biodiversity - planning for sustainable development,* New Delhi, Deep and Deep Pub.

28. Singh, R.B. and Mal, Suraj (2009) *Environmental change and bio-diversity*. Jaipur, Rawat,

29. Singh, J.S., Singh, S.P. and Gupta, S.R. (2014). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.

30. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). (2013). *Conservation Biology: Voicesfrom the Tropics.* John Wiley & Sons.

31. Thapar, V. (1998) *Land of the Tiger: A Natural History of the Indian Subcontinent*, Warren, C. E. (1971). Biology and Water Pollution Control. WB Saunders.

32. Wilson, E. O. (2006). *The Creation: An appeal to save life on earth.* New York: Norton.

33. World Commission on Environment and Development. (1987). *Our CommonFuture.* Oxford University Press.

Proposed Question Paper Pattern

Environmental Studies - Internal Assessment (IA)

Course Code: G 702 SB 1.1

Max. Marks: 15 **Time: 1Hr**

I	**Answer any ONE of the following questions:**	**1X5=05**
II	**Answer any ONE of the following questions:**	**1X10=10**

Assignment – 05Marks

Attendance – 05 Marks

Proposed Question Paper Pattern

Environmental Studies (Theory) - End Semester Exam

Course Code: G 702 SB 1.1

Course Credits: 2

Max. Marks: 35 **Time: 2hrs**

I	**Answer any TEN of the following questions:**	**2X10=20**
II	**Answer any ONE of the following questions:**	**5X1=05**
III	**Answer any ONE of the following questions:**	**10X1=10**

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