

Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

Affiliated to University of Mysore

Re-accredited by NAAC with 'A' Grade, College with Potential for Excellence

UG



PG



Syllabi of I and II Semester

Environmental Studies

Choice Based Credit System - 2019

Credit Pattern for Courses

L: Lecture; T: Tutorial; P: Practicals

Duration of the Course: (For I and II semesters)

Semester	Course	Title of the Paper	Instruction Hrs (L:T:P)/ Week	Credit	Duration of Exam (Hrs.)	Marks		Total Marks
						IA (C1+C2)	Final Exam (C3)	
I and II sem	AECC	Environmental Studies	2:1:0 (2+2 Hrs)	3	3	10+10	80	100

ASSESSMENT PATTERN OF ENVIRONMENTAL STUDIES PAPER

Sl No	Method Of Assessment	Marks
01	C1 (Internal Assessment)	10
02	C2 (Internal Assessment)	10
03	C3 (Theory Examination)	80
04	Total Marks	100

Ability Enhancement Compulsory Course (AECC – Environment Studies)

(50 lectures)

Unit 1: Introduction to Environmental Studies

- Multidisciplinary nature of environmental studies; Components of environment: Atmosphere, hydrosphere, lithosphere, biosphere. Scope and importance; Concept of sustainability and sustainable development.

Unit 2: Ecosystems

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession.
- Case studies of the following ecosystems:
 - a) Forest ecosystem
 - b) Grass land ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3: Natural Resources: Renewable and Non-renewable Resources

- Land resources and land use change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal Populations.
- Water: Use and over- exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter- state).
- Energy resources: Renewable and non renewable energy sources, Use of alternate energy sources, growing energy needs case studies.

Unit 4: Biodiversity and Conservation

- Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5: Environmental Pollution

- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6: Environmental Policies & Practices

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols, UNFCCC (The United Nations Framework Convention on Climate Change, CBD (Convention on Biological Diversity) and IUCN (International Union for Conservation of Nature).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7: Human Communities and the Environment

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8: Field work

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Visit to Industries for study on Occupational health and safety.
- Study of Biodiversity and protected areas.
- Study of Solid waste management/drinking/waste-water treatment plant etc.

Suggested Readings:

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. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Odum, E. P., Odum, H. T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.

10. Pepper, I. L., Gerba, C. P. & Brusseau, M. L. 2011. Environmental and Pollution Science. Academic Press.
11. Rao, M. N. & Datta, A. K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P. H., Hassenzahl, D. M. & Berg, L. R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
15. Singh, J. S., Singh, S. P. and Gupta, S. R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N. S., Gibson, L. & Raven, P. H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.
21. www.nacwc.nic.in
22. www.opcw.org

Note:

1. Tutorials Topics will be from syllabus.
2. Weekly two hours of Lectures (Two Credits) and two hours (One Credits) of Tutorials with minimum 20 to 30 Students in a batch for Tutorials.
3. The examination question paper may have the same Pattern as adopted for the other subjects and the paper has to account for 100 marks with 3hrs duration for examination.

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Question Paper Pattern

I and II Semester Environmental Studies (AECC)

Time: 3 hours

Max Marks: 80

Section A:

Explain/Define any TEN of the following:

10x2=20 Marks

Section B:

Write a note on any EIGHT of the Following

08x5=40 Marks

Section C:

Give a detailed account on any TWO of the Following

02x10=20 Marks