

NOTIFICATION

Sub: Introduction of new Compulsory Core Paper "Ability Enhancement Compulsory Courses" (AECC- Environmental Studies) in lieu of Environmental and Public Health

- Ref: 1. UGC D.O letter No. F.1-2/2017 (CPP-II) dt: 19/06/2017, received from the Secretary University Grants Commission.
- 2. Resolution of the Ordinary Meeting of the Academic Council held on 26/09/2017.
- 3. Notification No. Aca-II/Civic Sense/2012/13, dt: 05/01/2013.

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Pursuant to the resolution of the Ordinary meeting of the Academic Council held on 26/09/2017 and as per directions received from the UGC, the Vice-Chancellor is pleased to notify new Compulsory Core Paper "Ability Enhancement Compulsory Courses" (AECC- Environmental Studies) in lieu of Environmental and Public Health - (Fundamental core paper introduced from the academic year 2014-15). The new Syllabus of Compulsory core paper - "Ability Enhancement Compulsory Courses" (AECC- Environmental Studies) in lieu of Environmental and Public Health is to be introduced from the academic year 2018-19 onwards for all Undergraduate courses under the Faculties of Arts, Science, Commerce and Hotel Management Stream. The Syllabus and Scheme of Examination is annexed herewith.

BY ORDER

*[Signature]*  
REGISTRAR  
12/11/2018

Note:

- 1. Eligible Post Graduate Lecturers from any one of the Bio-Sciences Departments, i.e., Geology, Botany, Zoology, Geography, Economics and Environmental Studies.
- 2. The Paper setters are preferably from the above said subjects except Geography.
- 3. The colleges who do not have the above departments/subjects may get guest lectures from the above category.

To:

- 1. All the Deans of the Faculties of Arts, Science and Commerce, BUB.
- 2. All the Principals of affiliated colleges of Bangalore University offering UG Courses.

Copies to:

- 1. The Chairpersons of Board of Studies, UG, BUB.
- 2. The Director, PMEB, Bangalore University, Bangalore.
- 3. The Registrar (Evaluation), Bangalore University, Bangalore.
- 4. The Deputy Registrar, Examination Branch, Bangalore University, Bangalore.
- 5. The Director, Prasaranga, Bangalore University, Bangalore -with a request to publish the same in the next Bangalore University Gazette.
- 6. The System Analyst, BUB- with a request to upload this notification along with Syllabus in the official website of Bangalore University.
- 7. The Concerned Superintendents of Academic Section- III and I, Examination Branch, BUB.
- 8. The P.S to Vice-Chancellor/Registrar/Registrar (Evaluation) and P.A to F.O, BUB.



UNIVERSITY GRANTS COMMISSION

Ability Enhancement Compulsory Course (AECC – Environment Studies)

Unit 1 : Introduction to environmental studies

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

(2 lectures)

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) Grassland ecosystem
  - c) Desert ecosystem
  - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

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.

(8 lectures)

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.

(8 lectures)

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.

(8 lectures)

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 and Convention on Biological Diversity (CBD).

- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context. (7 lectures)

### 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).

(6 lectures)

### 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.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

(Equal to 5 lectures)

### 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: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.