



KARNATAK UNIVERSITY, DHARWAD
ACADEMIC (S&T) SECTION
ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಧಾರವಾಡ
ವಿದ್ಯಾಮಂಡಳ (ಎಸ್&ಟಿ) ವಿಭಾಗ



Tele: 0836-2215224
e-mail: academic.st@kud.ac.in
Pavate Nagar, Dharwad-580003
ಪಾವಟೆ ನಗರ, ಧಾರವಾಡ - 580003

NAAC Accredited
'A' Grade 2014

website: kud.ac.in

No. KU/Aca(S&T)/JS-131/Comp.Sub/2022-23/97

Date: 4/2/2023

ಅಧಿಸೂಚನೆ

ವಿಷಯ: ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯ NEP ಅಡಿಯಲ್ಲಿ 2 / 4ನೇ ಸೆಮಿಸ್ಟರ್ ಸ್ನಾತಕ ಪದವಿ ತರಗತಿಗಳಿಗೆ ಕಡ್ಡಾಯವಾಗಿರುವ ಪಠ್ಯಕ್ರಮಗಳ ಪ್ರಕಟಣೆ ಕುರಿತು.

ಉಲ್ಲೇಖ: 1. ಕಚೇರಿ ಪತ್ರ ಸಂ. KU/Aca(S&T)/OS-Gen/2022-23/1488, ದಿ. 21.01.2023.

2. ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಆದೇಶ ದಿನಾಂಕ 4/2/2023

ಮೇಲ್ಕಾಣಿಸಿದ ವಿಷಯ ಹಾಗೂ ಉಲ್ಲೇಖಗಳಿಗೆ ಸಂಬಂಧಿಸಿದಂತೆ, ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯ NEP ಅಡಿಯಲ್ಲಿ ಎಲ್ಲ ಸ್ನಾತಕ ಪದವಿ ತರಗತಿಗಳ 2 / 4ನೇ ಸೆಮಿಸ್ಟರ್‌ಗಳಿಗೆ ಈ ಕೆಳಗಿನ ವಿಷಯಗಳ ಪಠ್ಯಕ್ರಮವನ್ನು 2022-23ನೇ ಸಾಲಿನಿಂದ ಕಡ್ಡಾಯವಾಗಿ ಅಳವಡಿಸಿಕೊಳ್ಳಲು ಸಂಬಂಧಪಟ್ಟ ಎಲ್ಲ ಮಹಾವಿದ್ಯಾಲಯಗಳ ಪ್ರಾಚಾರ್ಯರುಗಳಿಗೆ ಈ ಮೂಲಕ ತಿಳಿಸಲಾಗಿದೆ.

- | | |
|--|----------------------------|
| 1. Environmental Studies (Revised for 3 credits) | : 2 nd Semester |
| 2. Financial Education and Investment Awareness (For 2 credits): | 4 th Semester |
| 3. India & Indian Constitution (For 3 credits) | : 4 th Semester |

ಮುಂದುವರೆದು, ಸದರ ಮಾಹಿತಿಯನ್ನು ವಿದ್ಯಾರ್ಥಿಗಳ ಗಮನಕ್ಕೆ ತರಲು ಮಹಾವಿದ್ಯಾಲಯದ ಸೂಚನಾ ಫಲಕದಲ್ಲಿ ಲಗತ್ತಿಸಬೇಕೆಂದು ಈ ಮೂಲಕ ತಿಳಿಸಲಾಗಿದೆ ಹಾಗೂ ಈ ಮೇಲಿನ NEP-2020 ಪಠ್ಯಕ್ರಮವು ಕ.ವಿ.ವಿ. ಅಂತರ್ಜಾಲ www.kud.ac.in ದಲ್ಲಿ ಬಿತ್ತರಿಸಲಾಗಿದೆ ಎಂದು ಈ ಮೂಲಕ ಸೂಚಿಸಲಾಗಿದೆ.

IC 3/2/23
ಕುಲಸಚಿವರು

ಗೆ,

ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯದ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ ಬರುವ ಎಲ್ಲ ಅಧೀನ ಹಾಗೂ ಸಂಲಗ್ನ ಮಹಾವಿದ್ಯಾಲಯಗಳ ಪ್ರಾಚಾರ್ಯರುಗಳಿಗೆ ಮಿಂಚಂಚೆ ಮೂಲಕ ಬಿತ್ತರಿಸಲಾಗುವುದು.

ಪ್ರತಿ ಮಾಹಿತಿಗಾಗಿ:

1. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ), ಕ.ವಿ.ವಿ. ಧಾರವಾಡ ಇವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ.
2. ಡೀನರು, ವಾಣಿಜ್ಯಶಾಸ್ತ್ರ ನಿಖಾಯ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
3. ನೋಡಲ್ ಅಧಿಕಾರಿಗಳು, ಯು.ಯು.ಸಿ.ಎಂ.ಎಸ್. ಘಟಕ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
4. ನೋಡಲ್ ಅಧಿಕಾರಿಗಳು, NEP ಘಟಕ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
5. ಡಾ. ಕಿರಣಕುಮಾರ ಬನ್ನಿಗೋಳ, ವಿಶ್ವವಿದ್ಯಾಲಯದ ಸಂಯೋಜಕರು ಹಾಗೂ ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ಸ್ನಾತಕೋತ್ತರ ವಾಣಿಜ್ಯಶಾಸ್ತ್ರ ಅಧ್ಯಯನ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.

ಸಾದರಸೂರ್ವಕವಾಗಿ ಪ್ರತಿ:

1. ಕುಲಪತಿಗಳ ಆಪ್ತಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
2. ಕುಲಸಚಿವರ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
3. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ) ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
4. ನಿರ್ದೇಶಕರು, ಐ.ಟಿ. ಶಾಖೆ, ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
5. ಸಿಸ್ಟಮ್ ವಿಶ್ಲೇಷಕರು (System Analyst), ಗಣಕಯಂತ್ರ ಶಾಖೆ, ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
6. ಅಧೀಕ್ಷಕರು, ಪರೀಕ್ಷಾ ಗೌಪ್ಯ/ ಸ್ನಾತಕೋತ್ತರ / ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ / ಸಾಮಾನ್ಯ ಆಡಳಿತ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
7. ಅಧೀಕ್ಷಕರು, ಸಿ.ಡಿ.ಸಿ. (ಸಂಯೋಜನೆ) ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ .

KARNATAK UNIVERSITY
SYLLABUS OF ENVIRONMENTAL STUDIES (Revised)
ABILITY ENHANCEMENT COMPULSORY COURSE (AECC) under NEP-2020
EFFECTIVE FROM 2022-2023

Total Contact Hours: 42	Course Credits: 3
No. of Teaching Hours/week: 3	Duration of ESA/Exam: 2 Hours
Formative assessment Marks: 40	Semester end assessment Marks: 60

Course Outcome (CO):

After completion of course, students will be able to:

- CO 1. Define environmental studies and ecology with basic principles.
 CO 2. To examine the natural resources and their types and utility.
 CO 3. To outline the diversity and explain the conservation and its significations.
 CO 4. To identify the environmental issues, types of pollutions and their impact.

Content of ENVIRONMENTAL STUDIES – AECC		42 Hours
Unit 1	<p>Chapter 1: Introduction to Environmental Studies:</p> <ul style="list-style-type: none"> • Multidisciplinary nature of environmental studies. • Scope and importance; Concept of sustainability and sustainable development. 	2
	<p>Chapter 2: Ecosystems</p> <ul style="list-style-type: none"> • What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, foodwebs and ecological succession. Case studies of the following ecosystems: <ol style="list-style-type: none"> a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) 	5
	<p>Chapter 3: Natural Resources: Renewable and Non-Renewable Resources</p> <ul style="list-style-type: none"> • 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. 	7

Unit 2	<p>Chapter 4: Biodiversity and Conservation</p> <ul style="list-style-type: none"> • Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hotspots. • India as a mega-biodiversity nation; Endangered and endemic species of India. 	7
	<ul style="list-style-type: none"> • 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. 	
	<p>Chapter 5: Environmental Pollution</p> <ul style="list-style-type: none"> • 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. 	7
Unit 3	<p>Chapter 6: Environmental Policies and Practices</p> <ul style="list-style-type: none"> • 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
	<p>Chapter 7: Human Communities and the Environment</p> <ul style="list-style-type: none"> • 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 cities). 	5
	<p>Chapter 8: Field work (Any two)</p> <ul style="list-style-type: none"> • 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, lake and river. 	2

Reference

1. Bharucha, E. (2015). *Textbook of Environmental Studies*.
2. Carson, R. (2002). *Silent Spring*. Houghton Mifflin Harcourt.
3. Climate Change: Science and Politics. (2021). *Centre Science and Environment*, New Delhi.
4. Gadgil, M., & Guha, R. (1993). *This Fissured Land: An Ecological History of India*. Univ. of California Press.
5. Gleeson, B. and Low, N. (eds.) (1999). *Global Ethics and Environment*, London, Routledge.
6. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. (2006). *Principles of Conservation Biology*. Sunderland: Sinauer Associates.
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. Nandini, N., Sunitha N., & Sucharita Tandon. (2019). *A text book on Environmental Studies (AECC)*. Sapna Book House, Bengaluru.
10. Odum, E.P., Odum, H.T. & Andrews, J. (1971). *Fundamentals of Ecology*. Philadelphia: Saunders.
11. Pepper, I.L, Gerba, C.P. & Brusseau, M.L. (2011). *Environmental and Pollution Science*. Academic Press.
12. Rajit Sengupta and Kiran Pandey. (2021). *State of India's Environment 2021: In Figures*. Centre Science and Environment.
13. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. (2012). *Environment*. 8th Edition. John Wiley & Sons.
14. Rosencranz, A., Divan, S., & Noble, M. L. (2001). *Environmental law and policy in India*.
15. Sengupta, R. (2003). *Ecology and economics: An approach to sustainable development*. OUP.
16. Singh, J.S., Singh, S.P. and Gupta, S.R. (2014). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
17. Sodhi, N.S., Gibson, L. & Raven, P.H. (Eds). (2013). *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
18. Wilson, E. O. (2006). *The Creation: An appeal to save life on Earth*. New York: Norton.
19. World Commission on Environment and Development. (1987). *Our Common Future*. Oxford University Press.

Details of Formative assessment (IA) for AECC theory: 40% weightage for total marks

Type of Assessment	Weightage	Duration	Commencement
Written test-1	10%(10 Marks)	1 hr	8th Week
Written test-2	10%(10 Marks)	1 hr	12th Week
Seminar	10%(10 Marks)	10 minutes	--
Case study / Assignment / Field work / Projectwork/ Activity	10%(10 Marks)	-----	--
Total	40%(40 marks) of the maximum marks allotted for the paper		

Pattern of Semester end examination:

Semester end exam for 60 marks with MCQ type for 60 questions. Each question carries 1 mark.

Duration of exam: 2 hours

Note to the teachers:

This module consists of 3 units, covering 42 hours of classroom based and field work intended to create awareness, enhance knowledge, develop skills and attitudes necessary to understand the Environment in its totality and enables students to participate proactively for the cause of the environment.

1. Environmental Studies (AECC) is made compulsory core module syllabus framed by UGC for all the Indian Universities/Colleges as per the directions given by the Honorable Supreme Court, which believed that, conservation of environment should be a national way of life and to be included into the education process. As suggested by NEP-2020 State Level Environmental Science Subject Expert Committee, Chairpersons of Board of Studies, Board of Examiners and subject experts it is proposed to implement **mandatorily**.
2. **Qualifications to teach Environmental Studies (AECC):** A candidate with minimum qualifications of M.Sc. in Environmental Science subject is eligible to teach Environmental Studies (AECC) at the under graduate level at all Universities, Deemed to be Universities, Autonomous Institutions, Government, Aided and Private Colleges. Preference be given to candidates with UGC-NET/K-SET/Ph.D. in Environmental Science.

However, when such candidates are not available, teachers of the subjects listed below are to be preferred to teach **ENVIRONMENTAL STUDIES – AECC** paper in the following order:

a. Biological Sciences:

Botany/Zoology/Microbiology/Biotechnology/Life Sciences

b. Chemical Sciences and Earth Sciences:

Chemistry/Geology/Earth Sciences

The teachers **NOT ELIGIBLE** to teach Environmental Studies (AECC) paper are - Humanities (Economics, Geography, History, Sociology, Political Science, Rural Development, Philosophy and others), Commerce, Management, English & others languages, Communication, Performing Arts, Fine Arts, Social work, Women Studies, Psychology, Home Science, Fashion Technology, Travel & Tourism and other similar subjects