**Course title: AECC environmental Studies**

**Duration: 1st & 2nd semester**

**Eligibility: Compulsory for all streams (B.A, B.Sc., B.Com, Integrated/Hons/BCA)**

**Learning objectives:**

The curriculum has been framed keeping the following objectives in consideration:

1. **Disciplinary knowledge**

Enable students to develop a comprehensive understanding of various facets of life forms, ecological processes and how humans have impacted them.

1. **Critical thinking**

Capability to identify relevant environmental issues, analyse the various underlying causes, evaluate the practices and policies, and develop framework to make informed decisions.

1. **Moral and ethical awareness/reasoning**

Develop empathy for various life forms and appreciate the various ecological linkages within the web of life.

**Learning outcomes:**

The course will empower the undergraduate students by:

1. Gaining in-depth knowledge on natural processes that sustain life and govern economy.
2. Predicting the consequences of human actions on the web of life, global economy and quality of human life.
3. Developing critical thinking for shaping strategies (scientific, social, economic and legal) for environmental protection and conservation of biodiversity, social equity and sustainable development.
4. Acquiring values and attitudes towards understanding complex environmental- economic-social challenges, and participating actively in solving current environmental problems and preventing the future ones.
5. Adopting sustainability as a practice in life, society and industry.

**Syllabus**

|  |  |
| --- | --- |
| **Chapter** | **Content** |
| Understanding Environment | 1.1. Environment: concept and importance  1.2. Components of environment: Physical, Biological and Social  1.3. Ecosystem: Concept, Structure and Function 1.3.1 Producers, Consumers and Decomposers 1.3.2 Food chain, Food web and Ecological pyramids  1.3.3 Energy flow in an Ecosystem1.4 Ecosystem services: Ecological, economic, social, aesthetic and informational |
| Natural Resources | 2.1 Land resources: global land use patterns, concept land degradation and desertification  2.2 Forest resources: Use and consequences of over-exploitation  2.3 Water resources: Use and consequences of over-utilization, concept of water harvesting and watershed management, water conflicts  2.4 Energy resources: Renewable and non-renewable energy sources, growing energy needs and alternate energy sources  Environmental |
| Biodiversity and its Conservation | 3.1 Biodiversity: definition, levels (genetic, species and ecosystem) and values.  3.2 Threats to biodiversity: habitat loss, poaching of wildlife, biological invasions  3.3 Concept of endemism and hot- spots of biodiversity  3.4 Conservation of biodiversity: In-situ and Ex-situ concepts |
| Environmental issues, policies and practices | 4.1 Causes, effects and control measures of: Air, water, Soil, Noise and solid waste pollution  4.2 Concept of natural disasters and Global environmental issues: Increase in greenhouse gases, climate change, Acid rain and stratospheric ozone layer depletion  4.3 Salient features of:  4.3.1 Water (Prevention and Control of Pollution) Act, 1974  4.3.2 Air (Prevention and Control of Pollution) Act, 1981  4.3.3 Environment Protection Act, 1986  4.4 Environmental education, Environmental Movements (Chipko Movement, Silent valley) and Environmental ethics |