

## Master of Education (M.Ed.)

**Title of the Course: S.Sc. 2(e) Education for Sustainable Development: Science  
Education and beyond  
(Semester: I,II, III & IV)**

**Credits: 4**

**MM: 100 (External: 70 Internal: 30)**

**Contact Week: 15**

### Introduction of the Course

Education for Sustainable Development (ESD) is a critical approach to learning that aims to empower individuals to take conscious action towards building a more sustainable and equitable future. By integrating environmental, social, and economic perspectives into the curriculum, ESD equips students with the knowledge, skills, and values needed to address global challenges such as climate change, biodiversity loss, social inequality and many more.

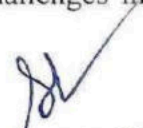
This course introduces the concept of ESD, related discourse and debate, its status in academics and related research trends. It can be offered to any M.Ed. student who wishes to enhance their critical thinking, creativity, and active participation for shaping a more sustainable world for present and future generations.

### Learning Outcome

After completion of the course, student will be able to:

1. Understand the concept, scope, evolution of Environmental Education (EE) and ESD, its interrelationship and various dimensions.
2. Understand and analyse the ideological, philosophical orientation, debates, discourses, policies and programs, and trends related to ESD.
3. Locate ESD, its approaches and the related curricular concerns in the school and higher education through existing pedagogy, practices, resources and assessment.
4. Enable the students to apply theoretical knowledge gained in the classroom to real-world field experiences through case study, visits, projects etc. for demonstrating their ability to effectively address sustainability challenges in practical settings.

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**Number of Units: 4**

**Weeks 15 = 60 hours**

**Unit 1: Introduction to Environmental Education and ESD (5 weeks = 20 hours)**

*1.1 Ideological and Philosophical Orientation of EE*

- Environmental Ethics - Anthropocentrism, Biocentrism, Ecocentrism etc.
- Approaches in EE- Scientific, Socio-Scientific, Economic, Cultural, Economic-Social etc. Meanings, nature and the need for the conservation of natural resources.
- Ex-situ conservation, In-situ conservation- IUCN Red list categories, Hot spots, Movements
- Environmental Education, Environmental Science Education, Environmental Studies, Environmental Management, Environmental Services, its orientation, Scope and its other aspects

*1.2 Evolution of EE and emergence of ESD*

Commissions and conferences- Stockholm Conference, Brundtland Commission, Nairobi Conference, Rio Summit, Kyoto Conference, Present developments.

*1.3 Key aspects/ Elements of ESD*

- Knowledge and Understanding
- Skills and Competencies
- Action
- Values

**Unit 2: Discourse & Debate**

**(3 weeks = 12 hours)**

*2.1 Perspective in EE- Science Education*

- Understanding of Ecology- Land rights, responsibilities
- Society, culture and environment:- Changes of Values- cultural, aesthetic,
- Relationship of EE with Science Education
- Conceptualising SD, ESD, & its critique, Its needs , challenges and critique in the context of Teacher Education

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- Scope of EE: Education from the environment, Education about the environment, Education for the environment.

## 2.2 Program, Policies, and Initiatives in EE at the National and International Levels

- Environmental Protection Act, Laws, Strategies
- Role of mass media and technology in developing awareness about environmental problems and their prevention; Role of NGOs Government organizations and community participation wrt Environmental Education.
- Conferences, Summits, DESD, MDGs, SDGs

## Unit 3: ESD in school and higher Education

(4 weeks = 16 hours)

### 3.1 Locating EE in School and Higher Education

- Interdisciplinary/ Multidisciplinary/ Transdisciplinary approach
- EE curriculum at various levels of school education

### 3.2 Curricular Aspects and Concerns

- Pedagogy Practices, Resources, Assessment
- Environmental Competencies

### 3.3 Role of Various Agencies and Stakeholders


- UNESCO, ECO-UNESCO, UN, Earth System Governance Project (ESGP), School strike for climate or Fridays for Future (FFF), Global Green Growth Institute (GGGI), International Union for Conservation of Nature (IUCN), United Nations Environment Programme (UNEP), European Environment Agency (EEA)

- Ministry of Environment, Forest and Climate Change of India, Center for Environment Education (CEE), World Wide Fund for Nature-India (WWF), Society for Environment and Education, National Green Corps, Nilgiri Wildlife and Environment Association, Green Movement in India, Forest Research Institute, Center for science and Environment.

## Unit 4: Research Trends in ESD

(3 weeks = 12 hours)

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#### 4.1 Understanding ESD as an Area of Research

- Understanding the kind of research conducted in Environmental education in the last two decades.

#### 4.2 ESD Research Trends

- Reviewing and finding the trend of research conducted in the area of EE in the last 5 years

#### Practicum/ Suggested Projects / Assignments (Any Two)

1. Identify and visit institutions/ organisations working in the field related to the environment. eg. CEE, WWF, TERI, etc. and make a report on their role and contribution.
2. Identify a place/organisation that calls itself sustainable. Collect information and make a report. (visit if possible)
3. Survey a school/s in your area and describe the steps to be taken to enhance the environment/ environmental awareness in school and community
4. Conduct a survey or Case study about an expert/ organisation that contributed and played a paramount role in the field of environment and its aspects.

**Note:** On the basis of the above, the teacher may design his/her own relevant projects/ assignments.

#### Essential/ Recommended Readings

- Decade of Education for Sustainable Development, 2005-2014. Retrieved from <http://www.desd.org/> (2017). Green School Practices on ESD: A case study; NCERT; New Delhi.
- Dull, P. & Verma, G. (2017). Environmental education in teacher education and challenges. International Journal of Academic Research and Development ISSN: 2455-4197. Volume 2; Issue 5; September 2017; Page No. 84-87
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- Govindaswamy, V. (ND). Importance of environmental education for sustainable development. Retrived from [http://wgbis.ces.iisc.ernet.in/biodiversity/sahyadri\\_ews/newsletter/issue22/art.htm](http://wgbis.ces.iisc.ernet.in/biodiversity/sahyadri_ews/newsletter/issue22/art.htm)
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- Kopnina, H, (2014). Revisiting Education for Sustainable Development (ESD): Examining Anthropocentric Bias Through the Transition of Environmental Education to ESD. Retrieved from [https://www.researchgate.net/publication/230532577\\_Revisiting\\_Education\\_f\\_or\\_Sustainable\\_Development\\_ESD\\_Examining\\_Anthropocentric\\_Bias\\_Through\\_the\\_Transition\\_of\\_Environmental\\_Education\\_to\\_ESD](https://www.researchgate.net/publication/230532577_Revisiting_Education_f_or_Sustainable_Development_ESD_Examining_Anthropocentric_Bias_Through_the_Transition_of_Environmental_Education_to_ESD)
- Kumar, A. (2015). Sustainable Development- Role of Teachers to Protect the Environment. Indian Journal of Educational Studies: An Interdisciplinary Journal. Vol.2, No.1, ISSN No. 2349-6908.
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- UNESCO.(2018). Issues and trends in education for sustainable development. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000261954>

### **Teaching Learning Resources (Digital and others):**

1. Tomorrow
2. The 4th Revolution: Energy autonomy
3. Before the flood
4. Cowspiracy: The Sustainability Secret
5. The Ivory Game
6. Minimalism
7. No impact man

### **Teaching Learning Process**

The course will be taught through interactive pedagogic methods such as classroom discussion, debates, film discussions, critical media analysis, collaborative learning tasks which enhance reading comprehension of core writings in the area and innovative projects. Reflective expression and learning will be encouraged.

### **Assessment Method**

The assessment will be both formative and summative in nature. Under formative assessment student participation, individual and group tasks, project, assignments will be given whereas summative assessment will be done through end-semester examination.

**Key Words:** Science, Environment, Education