

Course Outline

Part I

Programme Title : Doctor of Education (Science Education)
Course Title : Education for Environmental Sustainability
Course Code : SCG7023
Department : Department of Science and Environmental Studies
Credit Points : 3
Contact Hours : 39
Pre-requisite(s) : Nil (*If applicable*)
Medium of Instruction : English
Level : 7

Part II

1. Synopsis

This course aims at providing participants with an in-depth knowledge of the nature of environmental sustainability issues from educational, social, scientific, technological, and practical perspectives. Essential strategies and concepts to address and manage the environmental problems caused by various types of pollution, and necessary techniques and education processes for environmental sustainability in practical applications will be fully discussed.

2. Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students should be able to:

- CILO₁ develop an in-depth knowledge of the nature of environmental sustainability issues from educational, social, scientific, technological and practical perspectives
- CILO₂ propose and evaluate the appropriate and effective methods for environmental sustainability
- CILO₃ develop strategies and educational programmes on approaching environmental sustainability

3. Content, CILOs and Teaching & Learning Activities

Course Content	CILOs	Suggested Teaching &
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		Learning Activities
Nature of environmental sustainability issues <ul style="list-style-type: none"> • Multiple perspectives of environmental issues • Concept of environmental studies and control • Local and global practices of environmental sustainability • Sustaining environmental quality by the development of science and technology • Impact and implications of current trends for sustainable development • Issue-based inquiry in teaching of environmental sustainability 	<i>CILO_{1,2}</i>	Lecture, case study, video analysis, and group discussion
Strategies and educational activities of environmental sustainability <ul style="list-style-type: none"> • Necessary skills to investigate and comprehend environmental sustainability issues • Lab-based inquiry in the teaching of environmental sustainability issues • Planning, implementation and promotion of environmental sustainability in schools • Strategies and methods to develop understanding and the abilities of argumentation, value clarification and decision making, including discussion-oriented, problem-solving, value-related and action-based activities, and the use of media 	<i>CILO₃</i>	Lecture, case study, video analysis, group discussion, field visit workshop, and lab session

4. Assessment

Assessment Tasks	Weighting (%)	CILO
(a) Reflective reports on the recent literature relevant to selected topics in environmental sustainability.	30	<i>CILO_{1,2,3}</i>
(b) An essay on a critical review of the literature in one specific content area in environmental sustainability. It should include a discussion on the application to professional practices for the design of learning objectives and teaching strategies. (about 4000 words)	70	<i>CILO_{1,2,3}</i>

5. Required Text(s)

Nil

6. Recommended Readings

- Barrow, C. J. (2006). *Environmental Management for Sustainable Development* (2nd ed.). London: Routledge.
- Botkin, D.B., and Keller, E.A. (2012). *Environmental Science* (8th ed.). NY: John Wiley.
- Cloud, J. (2010). Educating for a sustainable future. In H. H. Jacobs (Ed.), *Curriculum 21: Essential education for a changing world* (pp. 10-79). Alexandria, VA: ASCD.
- Klein, J. T., and Schneider, C. G. (2010). *Creating interdisciplinary campus cultures: A model for strength and sustainability*. San Francisco, Calif.: Jossey-Bass.
- Lee, J. C. K., and Williams, M. (Eds.). (2009). *Schooling for sustainable development in Chinese communities: Experience with younger children*. S.I.: Springer.
- Miller, G. T., and Spoolman, S. E. (2009). *Sustaining the Earth: An integrated approach* (9th ed.). Belmont, Calif.: Brooks/Cole.
- Nikolopoulou, A., Abraham, T., and Mirbagheri, F. (2010). *Education for sustainable development: Challenges, strategies, and practices in a globalizing world*. New Delhi: Sage.
- Reid, A., and Scott, W. (2009). *Researching Education and the Environment: retrospect and prospect*. London: Routledge.
- Scott, W. (2011). Sustainable schools and the exercising of responsible citizenship: a review essay. *Environmental Education Research*, 17(3), 409-423.
- Smyth, J. C. (2006). Environment and education: A view of a changing scene. *Environmental Education Research*, 12(3,4), 247-264.
- The University of Hong Kong and City University of Hong Kong (2010). *Carbon Audit Toolkit for Small and Medium Enterprises in Hong Kong*. The University of Hong Kong.
- Wright, R. T., and Boorse, D. F. (2011). *Environmental Science: Towards a Sustainable Future* (11th ed.). Upper Saddle River, N.J.: Pearson.

7. Related Web Resources

- Agriculture, Fisheries and Conservation Department: <http://www.afcd.gov.hk>
- Environmental Protection Department: <http://www.epd.gov.hk/>
- Electrical and Mechanical Services Department: <http://www.emsd.gov.hk/>
- Planning Department: <http://www.pland.gov.hk/>
- United Nations – Division for Sustainable Development
<http://www.un.org/esa/dsd/index.shtml>
- United States Environmental Protection Agency: <http://www.epa.gov>
- UNESCO – Education for Sustainable Development
<http://www.unesco.org/en/esd/>

8. Related Journals

Applied Environmental Education and Communication
Bioresource Technology
Chemosphere
Environment, Development and Sustainability
Environmental Education Research
Environmental International
Environmental Pollution
Environmental Science and Technology
International Journal of Sustainability in Higher Education
Journal of Environmental Education
Journal of Environmental Management
Journal of Sustainability Education
Journal of Sustainable Development
Resource Conservation and Recycling
Science of the Total Environment
Water, Air, and Soil Pollution
Water Environment Research
Water Research
Water Science and Technology
Waste Management
Waste Management and Research

9. Others

Nil