Earth Sc 2EI3 – Final Exam 2017

Podcasts: Specific Key Concepts Tested

Module 1 - Environment and Resources

- Unit 1: Change in natural systems: timescales involved, types of changes, examples
- Unit 2: The Millennium Ecosystem Assessment, its findings, and the development goals
- Unit 3: The different perspectives on what constitutes a resource
- Unit 4: The different approaches to understanding the environment, and our relation to it
- Unit 5: Sustainable development and livelihoods

Module 2 - Ecosystems and Biodiversity

- Unit 1: High-/Low-quality energy
- Unit 2: Differences in Productivity between Ecosystems
- Unit 3: Ecological succession
- Unit 4: Keystone species and hyperabundance
- Unit 5: r- and k-strategists

Module 3 - Ecosystems and Matter Cycling

- Unit 1: What are biogeochemical cycles, how they work, their different types, and the different types of nutrients
- Unit 2: The importance of phosphorus; the major features of its biogeochemical cycle, and the associated environmental impacts
- Unit 3: The importance of nitrogen; the major features of its biogeochemical cycles
- Unit 4: The importance of carbon; the major features of its biogeochemical cycle, and the associated environmental impacts
- Unit 5: The importance of the hydrological cycle; its major features, and the associated environmental impacts

Module 4 - Environmental Planning and Management

- Unit 1: Social learning; single-loop learning; double-loop learning
- Unit 2: Ingenuity Gap
- Unit 3: What is the Ecosystem approach and its characteristics

Module 5 - Planning and Management Process

- Unit 1: The Rungs on the Ladder of Citizen Participation
- Unit 2: The issues around the communication of environmental science issues to the public
- Unit 3: Precautionary principle
- Unit 4: Public consultation, negotiation, mediation, arbitration

Module 6 - Climate Change

- Unit 1: What is climate change
- Unit 2: The different lines of evidence, of ongoing climate change
- Unit 3: Implications of climate change for ecosystems
- Unit 4: The relation between climate change, lifestyles and policy options

Module 7 - Oceans and Fisheries

- Unit 1: The link between oceanic ecosystem productivity and currents
- Unit 2: Canada's oceanic ecozones
- Unit 3: Different types and approaches to fisheries and their impacts on the oceans

Module 8 – Water

- Unit 1: Contamination of the water supply in Walkerton
- Unit 2: The Red River Flood, 1997

- Unit 3: Proposed water diversions schemes to the United States
- Unit 4: Issues and History of the James Bay Hydroelectric Project
- Unit 5: The Soft Path to water management
- Unit 6: Hydrosolidarity

Module 9 - Impacts of Agriculture

- Unit 1: The Green Revolution and approaches to Increase Yields
- Unit 2: The Effects of modern, industrial-scale Agriculture on Soils, Water, and Human Health

Module 10 – Agriculture

- Unit 1: Soil Salinization
- Unit 2: The economic geography of Agriculture in Canada
- Unit 3: Issues related to the non-selectivity of Biocides
- Unit 4: No-till/Conservation Agriculture

Module 11 – Forests

- Unit 1: The Geographic Distribution of Canada's Terrestrial Ecozones
- Unit 2: The importance of Canada's forests to its landscape and economy
- Unit 3: Intensive forestry and how it is practiced, and the parameters guiding it
- Unit 4: Differences between managed forest ecosystems and unmanaged ones
- Unit 5: Strategies and initiatives to manage forests sustainably, and trends

Module 12 - Minerals and Energy

- Unit 1: Distinction between: occurrence, transferability, energy content, reliability, storability, flexibility, price, safety, cleanliness
- Unit 2: Distinction between Flow and Stock Resources

- Unit 3: Major non-renewable resources in Canada: potash, coal, uranium and nuclear power

Module 13 - Energy

- Unit 1: Impacts and challenges in using coal and natural gas
- Unit 2: New Renewable Energy Resources: solar, wind power

Module 14 - Sustainability and Cities

- Unit 1: Patterns of urbanization at the global scale and in North America
- Unit 2: Green architecture

Module 15 - Urban Environmental Management

- Unit 1: Trends and Patterns of Urban Development
- Unit 2: How the environmental problems caused by cities can be addressed by Best Practices in Urban Development
- Unit 3: How to address sustainably in cities issues such as transportation, energy use, waste management, the urban heat island effect, and the hydrological cycle