

Selectable chapters (**blue colour**) in the book of  
Theis, T. (2015): Sustainability: A Comprehensive Foundation.  
<https://open.umn.edu/opentextbooks/textbooks/96>

**Classroom presentation: ~ 10 minutes PowerPoint presentation, which needs to be sent by e-mail until 12:00 of the day of the presentation to the following address:**  
[szep.tibor@nye.hu](mailto:szep.tibor@nye.hu)

### **3. Introduction to Sustainability: Humanity and the Environment**

1. An Introduction to Sustainability: Humanity and the Environment
- 2.-13 What is Sustainability?
3. The IPAT Equation
4. Human Consumption Patterns and the “Rebound” Effect
- 5.-2 Challenges for Sustainability
6. Chapter Review Questions

### **4. The Evolution of Environmental Policy in the United States**

1. The Evolution of Environmental Policy in the United States – Chapter Introduction
2. The American Conservation Movement
3. Environmental Risk Management
4. Sustainability and Public Policy
- 5.-9 Public Health and Sustainability

### **5. Climate and Global Change**

- 1.-17 04.02 Climate and Global Change – Chapter Introduction
2. Climate Processes; External and Internal Controls
3. Milankovitch Cycles and the Climate of the Quaternary
- 4.-7 04.02 Modern Climate Change
5. Climate Projections

### **6. Biosphere**

- 1.-16 03.12 Biosphere – Chapter Introduction
2. Biogeochemical Cycles and the Flow of Energy in the Earth System
- 3.-24 03.12 Biodiversity, Species Loss, and Ecosystem Function
4. Soil and Sustainability

### **7. Physical Resources: Water, Pollution, and Minerals**

1. Physical Resources: Water, Pollution, and Minerals - Chapter Introduction
2. Water Cycle and Fresh Water Supply
- 3.-23 03.12 Case Study: The Aral Sea - Going, Going, Gone
- 4.-3 03.19 Water Pollution
- 5.-22 03.19 Case Study: The Love Canal Disaster
6. Mineral Resources: Formation, Mining, Environmental Impact
- 7.-18 03.19 Case Study: Gold: Worth its Weight?

### **8. Environmental and Resource Economics**

1. Environmental and Resource Economics - Chapter Introduction
2. Tragedy of the Commons
- 3.-19 Case Study: Marine Fisheries
4. Environmental Valuation
5. Evaluating Projects and Policies
6. Solutions: Property Rights, Regulations, and Incentive

## Policies

### **9. Modern Environmental Management**

1. Modern Environmental Management – Chapter Introduction
2. Systems of Waste Management
3. Case Study: Electronic Waste and Extended Producer Responsibility
- 4.-20 Government and Laws on the Environment
5. Risk Assessment Methodology for Conventional and Alternative Sustainability Options

### **10. Sustainable Energy Systems**

1. Sustainable Energy Systems - Chapter Introduction
2. Environmental Challenges in Energy, Carbon Dioxide, Air, Water and Land Use
- 3.-8 04.02 Case Study: Greenhouse Gases and Climate Change
4. Energy Sources and Carriers
  1. Electricity
    - 1.-12 04.09 Electricity
    2. Fossil Fuels (Coal and Gas)
    - 3.-5 04.09 Nuclear Energy
    - 4.-14 04.09 Renewable Energy: Solar, Wind, Hydro and Biomass
  2. Liquid Fuels
    1. Fossil Fuel (Oil)
    2. The Conversion of Biomass into Biofuels
  3. Heat
    1. Geothermal Heating and Cooling
  5. Energy Uses
    1. Electric and Plug-in Hybrids
    2. Combined Heat and Power
    6. Applications of Phase Change Materials for Sustainable Energy

### **11. Problem-Solving, Metrics, and Tools for Sustainability**

1. Problem-Solving, Metrics, and Tools for Sustainability - Chapter Introduction
2. Life Cycle Assessment
3. Derivative Life Cycle Concepts
  1. Sustainability Metrics and Rating Systems
  - 2.-10 Footprinting: Carbon, Ecological and Water
  3. Case Study: Comparing Greenhouse Gas Emissions, Ecological Footprint and Sustainability Rating of a University
  4. Food Miles
  5. Environmental Performance Indicators
  6. Case Study: UN Millennium Development Goals Indicator
  4. Sustainability and Business

### **12. Sustainability: Ethics, Culture, and History**

1. The Human Dimensions of Sustainability: History, Culture, Ethics
- 2.-15 It's Not Easy Being Green: Anti-Environmental Discourse, Behavior, and Ideology
3. The Industrialization of Nature: A Modern History (1500 to the present)
4. Sustainability Studies: A Systems Literacy Approach

5. The Vulnerability of Industrialized Resource Systems: Two Case Studies
6. Case Study: Agriculture and the Global Bee Colony Collapse
7. Case Study: Energy and the BP Oil Disaster
- 8.-4 Sustainability Ethics

### **13. Sustainable Infrastructure**

1. Sustainable Infrastructure - Chapter Introduction
2. The Sustainable City
3. Sustainability and Buildings
4. Sustainable Energy Practices: Climate Action Planning
5. Sustainable Transportation: Accessibility, Mobility, and Derived Demand
6. Sustainable Stormwater Management
7. Case Study: A Net-Zero Energy Home in Urbana, Illinois

**Further information in the next web addresses:**

<https://www.undp.org/sustainable-development-goals>

<https://www.eea.europa.eu/en/topics/at-a-glance/sustainability>

<https://www.worldwildlife.org/topics/sustainability>

<https://www.greenpeace.org.uk/challenges/sustainability/>