Standards Module I: ISO 14001

I. Overview

This educational content on ISO 14001 was developed under award 70NANB16H268 from the National Institute of Standards and Technology to support instructors in incorporating national and international standards in course curricula. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Institute of Standards and Technology or the U.S. Department of Commerce.

ISO 14001 is an internationally recognized standard for environmental management systems that can enable the organizations that adopt it to better manage their respective environmental risks, and leverage opportunities for continual improvement of their environmental performance.

The module includes an overview of ISO 14001, related educational content, and module assessment tools. The educational content is comprised of eight sets of teaching materials for the clauses of ISO 14001. Each set includes a slide deck with teaching notes, supplemental resources, links to online tools and materials where applicable, example discussion questions, assignments and/or exercises to provide a means for students to apply their knowledge and demonstrate their understanding of the material.

Module Learning Outcomes

1. Describe the ISO 14001 framework for environmental management. (G, UG)

2. Explain the concept, purpose and characteristics of a systematic approach to environmental management. (G, UG)

3. Explain (UG) and apply (G) the key requirements associated with ISO 14001 elements.

4. Analyze and evaluate environmental management tools and strategies in organizations, based on ISO 14001 requirements and concepts. (G)

[G- Graduate Level; UG – Undergraduate Level]
II. Module Summary: ISO 14001 Framework and Benefits

ISO 14001 specifies requirements for environmental management systems (EMS). An EMS is a systematic approach for managing an organization’s environmental interactions and meeting an organization’s environmental objectives. ISO 14001 provides a framework for an organization to meet the intended outcomes they set for their EMS, respond to changing environmental conditions, and contribute to sustainable development by:

- Preventing or mitigating adverse environmental impacts;
- Mitigating adverse effects of environmental conditions on the organization;
- Meeting their legal requirements and stakeholder expectations;
- Improving their environmental performance.

III. Educational Content

The Overview materials address clauses 1-3 in ISO 14001, and subsequent materials cover clauses 4-10 individually. Definitions provided in clause 3 are addressed in the Overview section, but are also incorporated into the educational content for the clauses in which the terms are used, as appropriate.

Educational Content Outline

— Module 1 Overview: Clauses 1-3 and an overview of clauses 4-10 in the standard
— Module 1 Clause 4: Context of the Organization
— Module 1 Clause 5: Leadership
— Module 1 Clause 6: Planning
— Module 1 Clause 7: Support
— Module 1 Clause 8: Operation
— Module 1 Clause 9: Performance Evaluation
— Module 1 Clause 10: Improvement

IV. Resources

General readings and links to resources applicable for the module are provided below.

General Readings:


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**Links:**

ISO Directives and Policies: [https://www.iso.org/directives-and-policies.html](https://www.iso.org/directives-and-policies.html)


**Supplemental Resources:**

ISO 14001 Clause 4: Context of the Organization


ISO 14001 Clause 6: Planning


ISO 14001 Clause 7: Support


Chartered Institute of Ecology and Environmental Management Competency Framework: [https://www.cieem.net/competency-framework](https://www.cieem.net/competency-framework)

EMS Operation/Implementation Guide: [https://www.nibusinessinfo.co.uk/content/operate-your-environmental-management-system-ems](https://www.nibusinessinfo.co.uk/content/operate-your-environmental-management-system-ems)

ISO 14001 Clause 8: Operation

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EMS Operation/Implementation Guide: [https://www.nibusinessinfo.co.uk/content/operate-your-environmental-management-system-ems](https://www.nibusinessinfo.co.uk/content/operate-your-environmental-management-system-ems)

ISO 14001 Clause 9: Performance Evaluation


US EPA Compliance Resources: [https://www.epa.gov/compliance#resources](https://www.epa.gov/compliance#resources)

ISO 14001 Clause 10: Improvement
