ASSUMPTION UNIVERSITY
THEODORE MARIA SCHOOL OF ARTS
DEPARTMENT OF GENERAL EDUCATION
COURSE OUTLINE 2/2026

Course : GE 1302 Ecology and Sustainability
Credit : 3 (3-0-6)
Status : General Education Requirement
Prerequisite: None
Lecturers : A. Sasiluk S. A. Watcharee N.*, Ph.D

Course Description:
General science, scientific approaches, understanding the interrelationships of nature, identification and analysis of environmental problems, application and alternative solutions for preventing and solving environmental problems.

Course Objectives:
By the end of the course, students should be able to:

- understand the interrelationship of human beings, science, technology, and the environment
- be aware of environmental problems
- analyze the causes and effects of environmental problems
- apply the fundamentals of environmental science to realize the importance of local and/ or regional environmental problems through conservation activity

Teaching-Learning Activities:

1. Discussions
2. Lectures
3. Presentations
4. Self-directed Learning
5. Environmental Conservation Activity

Course Components and Mark Allocation:

Attendance	10%
Class Participation	5%
Five Assignments	30%
One Environmental Conservation Activity	25%
Final Examination	30%
Total	**100%**

Course Requirements and Policies:

Attendance

At least 80% class attendance is mandatory as listed on the course calendar. Absence of more than 6 classes will not allow you to take the final exam. (Students who are 15 minutes late will have their names recorded as late for that class. Three late arrivals will be recorded as 1 absence.)

Class Participation

Actively contributes to class discussions during lectures and recitations. A perfect score will be graded.

Assignments

All assignments should be submitted by the given deadline.

Environmental Conservation Activity

The environmental conservation activity (ECA) should be submitted by the allocated timeline. The proposal and typewritten report will be submitted by the given deadline, or special permission must be obtained from the instructor before the due date. Being Late or missing the Environmental Conservation Activity will affect the student’s grade.

Important note

For more information on the Environmental Conservation Activity, please study the ECA's outline. If there is any trouble keeping up with assignments and/or other aspects of the course, students could proactively inform the instructor as early as possible.

*** Course coordinator**

Evaluation:

The grading system is as follows:

Grade	Mark
A	80-100 %
A^-	78-79 %
B^+	73-77 %
B	70-72 %
B^-	68-69 %
C^+	63-67 %
C	60-62 %
C^-	58-59 %
D	50-57 %
W	< 50 %

References

Textbook:

Miller, G. Tyler & Spool man, Scott (2021). *Living in the Environment*, 20th ed., Cengage Learning, Singapore.

Additional Reading Books:

Cunningham, W. P. & Cunningham, M. A. (2020). *Environmental Science: A Global Concern*. 15th ed. New York: McGraw-Hill Companies.

Cunningham, W. P. & Cunningham, M. A. (2025). *Principles of Environmental Science*: *Inquiry & Application*. 10th ed. New York: McGraw-Hill.

Emily, P.H. (2023). *Introduction to Environmental Sciences and Sustainability*, 2nd ed., Florida: University of West Florida Pressbook.

Parul, R. (2022). *Managing Climate Change and Sustainability through Behavioral Transformation.* Palgrave Macmillan, Singapore.

Reference Coursera:

Archer, D. *Global Warming I: The Science and Modeling of Climate Change* (MOOC). Coursera. https://www.coursera.org/learn/global-warming

Friedland, A. *Environmental Science* (MOOC). Coursera. https://www.coursera.org/learn/environmental-science

Moore, M. *Environmental Economics* (MOOC). Coursera. https://www.coursera.org/learn/environmental-economics

Study Plan and Schedule:

Lecture No.	Contents
1-3	**Humans and Sustainability** • The Environment and Sustainability • Environmental Science Concept • Principles of Sustainability (1.1) • Environmental Worldviews, and Ethics (1.3,25.1) • Self-directed Learning o Sustainable Practice for University Students
4-7	**Human Population** • Human Population Growth (1.3, 6.1) • Factors Affecting Human Population Growth (6.2) • Problems Associated with Population Growth • Ecological Footprint and IPAT Model (1.2) • Self-directed Learning o World Population Growth and Sustainability

8-10	**Ecology** • Ecosystems Components (3.2) • Energy in an Ecosystem (3.3) • Matter in an Ecosystem (3.4) • Species Interactions (5.1) • Self-directed Learning o Human Impacts on a Natural Ecosystem
11-12	**Biodiversity** • Biodiversity Concepts • Importance of Biodiversity (4.2) • Endangered Species and Extinction (9.3) • Self-directed Learning o Sustaining Biodiversity and Ecosystem Service
13-14	**Energy Resources** • Energy Resources (15.1) • Nonrenewable Energy (15.2-15.5) • Renewable Energy (16.3-16.7) • Self-directed Learning o Sustainable Energy Transition
15-17	**Environmental Conservation Activity (ECA)** • ECA's Proposal Discussion
18-20	**Air Pollution** • The Atmosphere (18.1) • Major Air Pollutants (18.2, 18.3) o Primary air pollutants o Secondary air pollutants • Secondary Air Pollution o Photochemical Smog/ Acid deposition • Ozone Layer Depletion (18.7) • Self-directed Learning o Adapting to Ozone Layer Depletion
21-22	**Climate Change** • Climate Change (19.1) o Global Warming o Global Warming Management • Self-directed Learning o Adapting to Climate Change
23-25	**Water Resources and Pollution** • Earth's Water Resources (20.1) • Water Pollution (20.1, 20.5) • Self-directed Learning o Using Water More Sustainably
26-27	**Solid Waste** • Solid Waste Problems (21.1) • Solid Waste Management (21.2, - 21.4) • Self-directed Learning o Transitioning to Zero-waste Living
28-30	**Environmental Conservation Activity (ECA)** • ECA's Report Presentation
……FINAL EXAMINATION……. **Date: March 9, 2027 Time: 13:00-16:00 Hrs.** ***Check and confirm with registrar's office***	

February 19, 2027: Last Day to withdraw with "W"

LOCATION AND CONTACT INFORMATION

General Education Department
Office Hours: Monday – Friday, 8.30 a.m. – 4.30 p.m.
Office Location: CL10
Phone: 02-7832222 Ext.2485
Email Address: general_education@au.ed

Au VISION 2000

Assumption University of Thailand envisions itself as:

- an international community of scholars,
- enlivened by Christian inspiration,
- engaged in the pursuit of Truth and Knowledge,
- serving human society, especially through the creative use of interdisciplinary approaches and cyber technology.

ENVISIONING Au GRADUATES

Assumption University of Thailand envisions its graduates as:

- healthy and open-minded persons, characterized by personal integrity, an independent mind, and positive thinking,
- professionally competent, willing to exercise responsible leadership for economic progress in a just society,
- able to communicate effectively with people from other nations and to participate in globalization.

AU MISSION

Assumption University, an International Catholic University, is committed to be the light that leads learners and its stakeholders from all parts of the world towards wisdom, Truth, and Christian values and to discover "Treasure Within" themselves. Via effective teaching and research pedagogies of international standards as well as community engagement, the University aims to form individuals to be intellectually competent, morally sound, and spiritually enriching, accountable, righteous, and service-minded citizens; excelling in serving communities comprising of diverse cultures.

Au UNIQUENESS

"An International Catholic University"

Au IDENTITY

- Ethics
- English Proficiency
- Entrepreneurial Spirit

THEODORE MARIA SCHOOL OF ARTS
(www.arts.au.edu)
VISION AND MISSION

Vision

An international community of business communicators in Thailand

Mission

Theodore Maria School of Arts will ensure that: the School will…
1. Enhance business language skills
2. Promote cultural awareness
3. Foster academic networking
4. Encourage ethical standards and practices

TAGLINE

เติมเต็มศิลป์ภาษา พัฒนาศาสตร์ธุรกิจ

Language Education, Business Inspiration

ARTS ORGANIZATIONAL CULTURE: More than faculty, we are family

- Open communication
- Mentoring system
- Dedication
- Caring
- Teamwork
- Commitment
- Resource sharing

Core Values

A = Adaptability
R = Responsibility
T = Togetherness
S = Sustainability

Core Competencies

Employability
Multiculturalism
Internationalization

Quality Assurance Process

Students should understand and apply the Quality Assurance Process in their study. The Plan-Do-Check-Act Cycle (PDCA) provides an easy but effective approach for problem solving and managing change, ensuring that ideas are appropriately tested before the full implementation. It can be used in all sorts of situations and can be clarified as follows:

Plan: Define the current problem, process, and issue and establish objectives and processes required to deliver the desired results.
Do: Implement the plans and new processes developed.
Check: Monitor and evaluate the implemented process by testing the results against the predetermined objectives.
Act: Apply actions necessary for improvement if the results require changes.

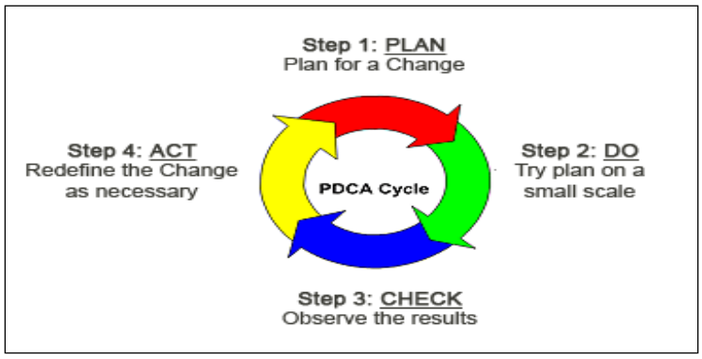


Figure 1: PDCA Cycle (http://www.swopehealth.org)

Plagiarism

Plagiarism is a serious academic offence, a serious breach of ethical conduct and is unacceptable student behavior. Students who plagiarize copying words or ideas without acknowledging the original writer of the words or ideas, will face disciplinary action. This will range from receiving an “F” in the subject to university suspension.