**ASSUMPTION UNIVERSITY**

**THEODORE MARIA SCHOOL OF ARTS**

**DEPARTMENT OF GENERAL EDUCATION**

**COURSE OUTLINE 1/2023**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course :** | GE 1301 Environmental Science / GE 1302 Ecology and Sustainability | | |
| **Credit :** | 3 (3-0-6) | | |
| **Status :** | General Education Requirement | | |
| **Prerequisite:** | None | | |
| **Lecturers :** | Dr.. Watcharee N. | A. Sasiluk S | A.Khin Saw Mon |
|  |  |  |  |

**Course Description:**

General science, scientific approaches, understanding the interrelationships of the nature, identification and analysis of environmental problems, application and alternative solutions for preventing and solving the 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 and Participation 10%

Six Assignments and Discussion 30%

One Environmental Conservation Activity 10%

Mid-term Examination 25%

Final Examination 25%

**Total 100%**

**Course Requirements and Policies:**

**Attendance**

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

**Assignments**

All assignments must be submitted by the given deadline or special permission must be approved from instructor prior the due date.

**Environmental Conservation Activity**

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

**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. (2018). *Environmental Science: A Global Concern*. 14th ed. New York: McGraw-Hill Companies.

Cunningham, W. P. & Cunningham, M. A. (2008). *Principles of Environmental Science*: *Inquiry & Application*. 4th ed. New York: McGraw-Hill.

Enger, E. D. & Smith, B. F. (2014). *Environmental Science: A Study of Interrelationships.* 14th ed. New York: McGraw-Hill.

Miller, G. Tyler & Spool man, Scott (2018). *Environmental Science,* 16th ed., Cengage

Learning, Singapore.

Odum, Eugene & Barrett, Gary (2004). *Fundamentals of Ecology*, 5th ed., Brooks Cole.

Reference Websites:

http://wikieducator.org/ScienceMan

http://esa.un.org/unpd/wpp/index.htm

<http://climate.nasa.gov>

**Study Plan and Schedule:**

|  |  |
| --- | --- |
| **Lecture No.** | **Contents** (section number(s)) |
| 1-3 | **Humans and Sustainability**  The Environment and Sustainability  Environmental Science Concept  Principal of Sustainability (1.1)  Environmental worldviews, Ethics and Sustainability (1.3,25.1)  Self-directed Learning  Living More Sustainably |
| 4-7 | **Human Population**   * Human Population Growth (1.3, 6.1) * Factors Affecting Human Population Size (6.2) * Age Structure and Population Growth (6.3) * Problems Associated with Population Growth * Slowing Human Population Growth (6.4) * Ecological Footprint and IPAT Model (1.2) * Self-directed Learning   + World Population Growth and Sustainability |
| 8-12 | **Ecology**   * Ecosystems Components (3.2) * Energy in an Ecosystem (3.3) * Matter in an Ecosystem (3.4) * Species Interactions (5.1) * Self-directed Learning   + Human impacts on natural ecosystem |
| 13-14 | **Biodiversity**   * Biodiversity Concepts * Importance of Biodiversity (4.2) * Humans and Species Extinction (9.3) * Self-directed Learning   + Sustaining Biodiversity and Ecosystem Service |
| **………………….MID-TERM EXAMINATION…………………**  **August 08,2023, 15:00-17:00 Hrs**  **\*Check and confirm with register's office\*** | |
| 15-18 | **Energy Resources**   * Energy Resources and Net Energy (15.1) * Nonrenewable Energy (15.2-15.5) * Renewable Energy (16.3-16.7) * Transitioning to More Sustainable Energy Future (16.1-16.2, 16.9) * Self-directed Learning   + Hydrogen Based Energy |
| 19-20 | **Air Pollution**   * The Atmosphere (18.1) * Major Air Pollutants (18.2, 18.3)   + Primary air pollutants   + Secondary air pollutants   + Industrial Smog   + Photochemical Smog   + Acid deposition * Self-directed Learning   + Indoor Air Pollution * Ozone Layer Depletion (18.7) |
| 21-22 | **Climate Change**   * Climate Change (19.1) * Causes of Climate Change (19.2) * Effects of Climate Change (19.3) * Slowing Climate Change (19.4) * Self-directed Learning   + Adapting to Climate Change |
| 23-26 | **Water Resources and Pollution**   * Earth’s Water Resources (20.1) * Water Cycle (3.4) * Water Pollution, Causes and Effects (20.1) * Water Pollution Solutions (20.5) * Self-directed Learning * Using Water More Sustainably |
| 27-28 | **Solid Waste**   * Solid Waste Problems (21.1) * Solid Waste Management (21.2, - 21.4) * Self-directed Learning   + Transitioning to Low-waste Economy (21.6) |
|  |  |
| 29-30 | **Environmental Conservation Activity** |
| **……………FINAL EXAMINATION………….**  **October 09,2023, 13:00-16:00 Hrs:**  **\*Check and confirm with register's office\*** | |

**September 22, 2023: Last Day to withdraw with “W”**

**LOCATION AND CONTACT INFORMATION**

GENERAL EDUCATION (GE) office hours are Monday through Friday, 8.30 a.m. – 16.30 p.m.

Office Location: CL10

Phone: 02-7232485

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 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**

Theodore Maria School of Arts, Assumption University of Thailand envisions itself as an *outstanding international school for business language education with:*

* qualified and experienced lecturers
* applicative curriculums
* international teaching and learning environment and
* internship opportunities.

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**Mission**

For students:

* To acquire and applied business language skills
* To be competent and sound individuals equipped with entrepreneurial spirit

**Core Values**

A = Adaptability

R = Responsibility

T = Thrivability

S = Sustainability

**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 issueand 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.

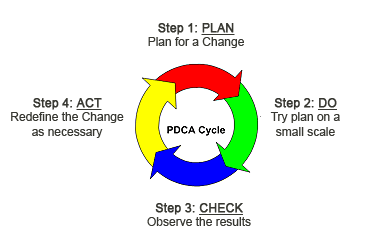


Figure 1: PDCA Cycle (http://www.swopehealth.org)

**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.