Course Specification

Name of institution Mahidol University

Campus/faculty/department International College

Section 1 General Information

1. Course code and course title

Thai ICNS 152 นิเวศวิทยาของเอเชียตะวันออกเฉียงใต้

English ICNS 152 Southeast Asian Ecology

2. Number of credits 4 (3-2-7)

(Lecture 3 hours/week; laboratory 2 hours/week; self study 7 hours/week)

3. Curriculum and type of subject

3.1 Curriculum Offer in all International College undergraduate programs

3.2 Type of subject General Education course in Natural Science

4. Responsible faculty member Members of faculty of the Science Division, MUIC

5. Trimester / year of study

5.1 Trimester Trimesters 1-3 / first year

5.2 Number of students Maximum 30 students per class section

6. Pre-requisites None

7. Co-requisites None

8. Venue of study MUIC

Section 2 Goals and Objectives

1. Goals

After successful completion of this course, students should be able to gain knowledge and be aware of, and be concerned with human interaction(s) with the region's natural environment, and related global themes.

2. Objectives of development/revision

To revise the course in the light of contemporary understanding and current environmental issues

Section 3 Course Management

1. Course descriptions

ภาพรวมของระบบนิเวศวิทยาของภูมิภาคนี้ นำประเด็น ปัญหา และสาขาที่เลือกสรรแล้วมาศึกษาอย่างละเอียดยิ่งขึ้น

An overview of the ecological systems of the region; selected issues, problems and areas are studied in greater detail.

(The course primarily focuses on the well-being of humans and other denizens inhabiting Southeast Asia, through the provision of understanding and appreciation for biological diversity and intact ecosystems, and the close relationship between sustainable development and healthy environments. The course offers an overview of the natural and human-modified ecological systems in Southeast Asia, highlights their ecological services and contributions to sustaining livelihoods and incomes of the human populations in the region, looks at the threats and impacts to the ecosystems and the biological diversity therein, and discusses mitigation measures to address those threats and impacts.)

2. Credit hours / trimester

Lecture	Additional class	Laboratory / field trip/ internship	Self study
36 hours (3 hour x 12 weeks)	None	24 hours (2 hours x 12 weeks)	84 hours (7 hours x 12 weeks)

3. Number of hours that the lecture provides individual counseling and guidance

1 hour / week

Section 4 Development of Students' Learning Outcome

1. Expected outcome of students' skill and knowledge

Students will gain a better understanding of the ecological systems in Southeast Asia, and the threats and impacts to them.

2. Teaching methods

Lectures, classroom discussions, PowerPoint presentation, DVD presentation, e-learning animations, field trip

3. Evaluation methods

1. Morality and Ethics

1.1 Expected outcome on morality and ethics

- (1) Have personal discipline, integrity and responsibility
- (2) Have professional ethics
- (3) Be aware of and appreciate biological differences
- (4) Be aware of and appreciate cultural differences
- (5) Have academic honesty

1.2 Teaching methods

1) Lectures
2) DVD and e-learning animations
3) Discussion of issues to make students informed
4) Individual and/or group assignments and discussion
5) Field trip to a lowland rainforest ecosystem, or other natural ecosystem

1.3 Evaluation methods

1) Written examinations and assignments
2) Class attendance, class participation and behavior
3) Quality of individual and/or group assignments
4) Academic honesty behavior during the examination period and individual responsibility for work.
5) Observations of behavior and attitude during field trips

2. Knowledge

2.1 Expected outcome on knowledge development

- (1) Understanding of key principles and theories relating to the course or field of natural science

  (2) Knowledge of the process and techniques of research in order to solve problem and add up to the knowledge in the career
- (3) Ability to integrate the knowledge from natural science to other related field of study

1.2 Teaching methods

1) Lectures which involve questions and class discussion on certain topics and special lecture sessions conducted by experience practitioners from related field
2) DVD and e-learning animations

3) Project assignments and presentations
4) Field trips

1.3 Evaluation methods

1) Written examinations
2) Quality of group assignments
3) Presentation of knowledge synthesis
4) Class attendance and class participation

3. Intellectual development

3.1 Expected outcome on intellectual development

- (1) Ability to think critically, systematically and creatively
- (2) Ability to search, consolidate and evaluate ideas and evidence for problem solving
- (3) Ability to integrate knowledge and skills to appropriately solve problems in natural science

3.2 Teaching methods

1) Lecture
2) Class and Group discussion
3) DVD and e-learning animations

3.3 Evaluation methods

1) Written examinations and assignments
2) Presentation of knowledge synthesis
3) Class attendance and class participation
4) Questions raised and responses provided in relation to DVD and e-learning animations
5) Questions raised and responses provided during field trips

4. Interpersonal relationship and responsibility

4.1 Expected outcome on interpersonal relationship and responsibility

- (1) Have ability to effectively articulate to other people who may come from diverse backgrounds

- (2) Have ability to work, and be responsible for own assigned work, duties and roles in the workgroup appropriately, including participating in helping work colleagues and solving group problems
- (3) Respect of others, sense of personal discipline, willingness to listen to a variety of points of view

4.2 Teaching methods

1) Group projects and assignments
2) Class participation
3) Field trip

4.3 Evaluation methods

1) Written examinations and assignments
2) Group presentation of knowledge synthesis
3) Class attendance and class participation
4) Observations of behavior exhibited during field trips

5. Mathematical analytical thinking, communication skills, and information technology skills

5.1 Expected outcome on Mathematical analytical thinking, communication skills, and information technology skills

(1) Can select and apply appropriate statistical and mathematical methods to research problem

(2) Development of analytical thinking and communication skills

- (3) Good use of English communication skills including speaking, listening, reading, writing and presentation skills.

5.2 Teaching methods

1) Lecture and discussion
2) Assignments and presentations

5.3 Evaluation methods

1) Written examination
2) Presentation of the knowledge synthesis
3) Class attendance and class participation

Section 5 Teaching and Evaluation Plans

1. Teaching plan:

Week	Topic	Hours	Teaching methods/ multimedia	Instructor
1	Introduction to Southeast Asia Introduction to Ecology	**3**	Lecture, e-learning animation	**Ramesh Boonratana**
2	Ecological Overview of Southeast Asia ASEAN Environmental Challenges	**3**	Lecture, e-learning animation	**Ramesh Boonratana**
3	Natural Ecosystems: Mangrove Forest, Brackish-water Forest	**3**	Lecture	**Ramesh Boonratana**
4	Natural Ecosystems: Coral Reefs Beach Vegetation, Rocky Shores,	**3**	Lecture	**Ramesh Boonratana**
5	Natural Ecosystems: Rivers and Lakes	**3**	Lecture	**Ramesh Boonratana**
6	Natural Ecosystems: Peat-swamp Forest, Freshwater-swamp Forest	**3**	Lecture	**Ramesh Boonratana**
7	Natural Ecosystems: Lowland Rainforest, Mountains, Caves	**3**	Lecture, DVD, e-learning animation	Lecture
8	Human-modified Ecosystems: Agricultural Ecosystems, Urban Ecology	**3**	Lecture, e-learning animation	**Ramesh Boonratana**
9	Global Warming and Climate Change	**3**	Lecture, e-learning animation	**Ramesh Boonratana**
10	Biodiversity Conservation	**3**	Lecture	**Ramesh Boonratana**
11	Ecosystem Services Ecosystem Protection	**3**	Lecture, Video clips	**Ramesh Boonratana**
12	Ecologically-friendly Guidelines for Developers and Planners	**3**	Lecture, Guidebook	**Ramesh Boonratana**

13	Final Exam		**Exam**	**Ramesh Boonratana**

2. Evaluation plan

Expected outcomes	Methods / activities	Week	Percentage
1.1 (1)-(2)-(3)-(4) **2.1 (1)-(2)-(3)** **3.1 (1)-(2)-(3)** **4.1 (1)-(2)-(3)** **5.1 (2)-(3)**	**Class Attendance/ Participation**	**1-12**	**5**
1.1 (1)-(2)-(3)-(4) **2.1 (1)-(2)-(3)** **3.1 (1)-(2)-(3)** **4.1 (1)-(2)-(3)** **5.1 (2)-(3)**	**Mid-Term Exam**	**6**	**40**
1.1 (1)-(2)-(3)-(4) **2.1 (1)-(2)-(3)** **3.1 (1)-(2)-(3)** **4.1 (1)-(2)-(3)** **5.1 (2)-(3)**	**Field trip / Field trip report**	**4-11**	**5/10**
1.1 (1)-(2)-(3)-(4) **2.1 (1)-(2)-(3)** **3.1 (1)-(2)-(3)** **4.1 (1)-(2)-(3)** **5.1 (2)-(3)**	**Final**	**12**	**40**

Conditions subject to change based on class situation.

Section 6 Teaching Materials and Resources

1. Texts and main documents

1.1 Brandon, K. (1996). Ecotourism and Conservation: A Review of Key Issues. Washington DC: World Bank Global Environment Division.

1.2 CBD. (2000) Sustaining Life on Earth: How the Convention on Biological Diversity promotes nature and human well-being. Quebec: CBD.

1.3 Ceballos-Lascuarain, H. (1996). Tourism, Ecotourism, and Protected Areas: The State of Nature-based Tourism Around the World and Guidelines for its Development. Gland: IUCN.

1.4 Dudley, N. (Ed.) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN.

1.5 Fennell, D.A. (1999) Ecotourism: an Introduction. London: Routledge.

1.6 Lee, D. (1980) The sinking ark: environmental problems in Malaysia and Southeast Asia. Kuala Lumpur: Heinemann.

1.7 Mackenzie, A., A.S. Ball, and S.R. Virdee. (1998). Instant Notes in Ecology. Singapore: Springer-Verlag.

1.8 MacKinnon, J., C. Rees and M. Uriarte. (2004) Guidebook of Biodiversity Principles for Developers and Planners. Los Banos: ARCBC.

1.9 MacKinnon, J., K. MacKinnon, G. Child and J. Thorsell. (Comp.) (1986). Managing Protected Areas in the Tropics. Gland: IUCN.

1.10 Murdoch, W.W. (Ed.). (1975). Environment: Resources, Pollution and Society. Sunderland: Sinauer Associates.

1.11 Osborne, P.L. (2000) Tropical Ecosystems and Ecological Concepts. Cambridge: Cambridge University Press.

1.12 Page, S.J. and Dowling, R.K. (2002). Ecotourism. New York: Prentice Hall.

1.13 Putz, F.E., K.H. Redford, J.G. Robinson, R. Fimbel, G.M. Blate. Biodiversity Conservation in the Context of Tropical Forest Management. Washington DC: World Bank Global Environment Division.

1.14 Richards, P.W. (1996) The Tropical Rain Forests. 2nd ed. Cambridge: Cambridge University Press.

1.15 Richter, M. (2008). Tropical Mountain Forests: Distribution and General Features. In S.R. Gradstein, J. Homeier and D. Gansert (Eds). The Tropical Mountain Forest – Patterns and Processes in a Biodiversity Hotspot. Biodiversity and Ecology Series (2008) 2: 7-24

1.16 Sims, Jr. H.W. (1983) Ecology: Selected Readings. 3rd ed. Dubuque: Kendall/Hunt.

1.17 Smith, R.L. and T.M. Smith. (1998). Elements of Ecology. 4th ed. San Francisco: Benjamin/Cummings Science Publishing.

1.18 Sodhi, N.S. and B.W. Brook. (2006) Southeast Asian Biodiversity in Crisis. New York: Cambridge University Press.

1.19 Sutherland, W.J. (2000) The Conservation Handbook: Research, Management and Policy. Cambridge: Blackwell Science.

1.20 Tobias, D. and Mendelsohn, R. (1991) Valuing ecotourism in a tropical rain forest. Ambio 20: 91-93.

1.21 UNDP. (2006) Malaysia's Peat Swamp Forests: Conservation and Sustainable Use. Kuala Lumpur: UNDP.

1.22 WCMC. (1992) Global Biodiversity: Status of the Earth's Living Resources. London: Chapman & Hall.

1.23 Weaver, D. (2001) Ecotourism. Milton: John Wiley & Sons.

1.24 Whitmore, T.C. (1998) An Introduction to Tropical Rain Forests. 2nd ed. Oxford: Oxford University Press.

1.25 Whitten, A.J., S.J. Damanik, J. Anwar, and N. Hisyam. (1987) The Ecology of Sumatra. 2nd ed. Yogyakarta: Gadjah Mada University Press.

1.26 Wright, R.T. (2008) Environmental Science: Toward a Sustainable Future. 10th ed. New Jersey: Pearson Prentice Hall.

1.27 WWF. (1990) The importance of biological diversity. Gland: WWF

2. Documents and important information

3. Documents and recommended information

Section 7 Evaluation and Improvement of Course Management

1. Strategies for effective course evaluation by students

1.1 Student evaluations of content covered

1.2 Student suggestions for improvements to the course

2. Evaluation strategies in teaching methods

2.1 Student evaluations of content covered

2.2 Student suggestions for improvements to the course

3. Improvement of teaching methods

3.1 Workshop for all Divisional faculty

4. Evaluation of students' learning outcome

4.1 Examinations

5. Review and improvement for better outcome

5.1 Review of all Divisional examination papers by the Divisional Standards Committee