

**Course Syllabus (Academic Year 2018)**

**School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University**

1. **Course No. and Title:** KACB 331 Plant Ecology

**Credit (study hours):** 3 (2-3-5)

1. **Program Name:**  Bachelor of Science in Conservation Biology
2. **Course Module:** 🞎 Gen.Edu. course 🗹 Core course 🞎 Elective course

**Pre/co-requisite:** KACB 201 General Ecology

1. **Semester:** 🗹 1stsemester 🞎2ndsemester 🞎 3rdsemester
2. **Class Schedule & Venue:** At MUKA: R-2211 and L209, Laboratory Building
3. **Course Coordinator:** Lect. Chanpen Saralamba, Tel. 087-5090665, Email: chanpen.sar@mahidol.ac.th
4. **Course Description:**

ความสัมพันธ์ระหว่างสิ่งแวดล้อมต่อพืชและสิ่งมีชีวิตอื่น การวิเคราะห์สังคมพืช โครงสร้าง ระบบนิเวศ การอนุรักษ์ทรัพยากรธรรมชาติ การวิเคราะห์ปัญหาปัจจุบันของพืชต่อสิ่งแวดล้อม ปฏิบัติการเกี่ยวกับการศึกษาโครงสร้างและการกระจายของสังคมพืช

Relationship of plant and other organisms, plant community, analysis, structure, ecosystem, natural resource conservation, current issues in plant ecology; laboratory exercises and fields trips are included.

1. **Course Objectives / Course Learning Outcomes (CLOs)**

|  |  |  |
| --- | --- | --- |
| **No.** | **Objectives/Course Learning Outcomes (CLOs)** | **PLOs\*** |
| 8.1 | Describe the ecological process between plant and surrounding environments | 1 |
| 8.2 | Describe interactions between species and environment that determine community composition and structure | 1 |
| 8.3 | Describe how mathematical models and other ecological methods are used to explain plant life history and plant diversity. | 1 |
| 8.4 | Apply basic ecological principles to current plant conservation issues | 1,4 |
| 8.5 | Effectively analyze paper in plant ecology from the ecological literature | 1,4 |

**NOTE PLO 1:** Analyze biodiversity functions, value, status, trend, and their threats to address biodiversity problems.

PLO 4: Choose appropriate techniques, research, and possible practices for biodiversity conservation.

1. **Class Instructor List**

|  |  |  |
| --- | --- | --- |
| Lect. Chanpen Saralamba (CS)  อ.จันทร์เพ็ญ ศรลัมพ์ | Lect. Pornwiwan Pothasin (PPo)  อ. พรวิวรรณ โพธาสินธุ์ | Lect. Chetsada Paenak (CP)  อ. เจษฎา แพนาค |
|  |  |  |

**Teaching assistants (officer):**

Suphat Prasopsin (สุภัทร ประสพศิลป์)

1. **Course Outline**

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| --- | --- | --- | --- | --- | --- | --- |
| **Week** | **Date** | **Topic (Lecture)** | **Lecturer** | **Date** | **Topic (Laboratory)** | **Team** |
| 1 | 21 Aug.18 | Course orientation: Introduction to plant ecology | CS | 21 Aug.18 | Research in plant ecology: how is topic related? | CS, SP |
| 2 | 28 Aug. 18 | Plant life history and reproductive strategies | CS | 28 Aug. 18 | Plant trade-off | CS, SP |
| 3 | 4 Sep. 18 | Plant phenology | CS | 4 Sep. 18 | Phenology checking | CS, SP |
| 4 | 11 Sep. 18 | The ecology of pollination (plant/pollinator interactions) | PPo | 11 Sep. 18 | Identify pollination syndromes | PPo, SP |
| 5 | 18 Sep. 18 | Seed dispersal I: Advantages of seed dispersal/dispersal agents & plant strategies | CS | 18 Sep. 18 | Fruit Trait | CS, SP |
| 6 | 25 Sep.18 | Seed dispersal II: Dispersal process and importance in tropical forest | CS | 25 Sep.18 | Seed Trait | CS, |
| 7 | 2 Oct. 18 | Seed dormancy, soil seed bank and seed germination | CS | 2 Oct. 18 | Seed germination experiment | CS, |
| 8 | 9 Oct. 18 | Seedling establishment | CS | 9 Oct.18 | Seedling growth analysis | CS, |
| 9 | Midterm Exam (16-22 Oct. 2018) | | | | | |
| 10 | 30 Oct.18 | Plant community and how to describe | CS | 30 Oct.18 | Plant community in tropical forest | CS, |
| 11 | 6 Nov. 18 | Disturbance and succession | CS | 6 Nov. 18 | Mt. St. Helens 30th anniversary documentary | CS, |
| 12 | 13 Nov.18 | The theory of Island Biogeography | CS | 13 Nov.18 | Island Biogeography case study | CS, |
| 13 | 20 Nov. 18 | Climate variation and Biomes | CS | 20 Nov. 18 | Biome presentation | CS, |
| 14 | 27 Nov.18 | Plant diversity and climate change | CS | 27 Nov.18 | Constructing climate diagram | CS, |
| 15 | 4 Dec. 18 | Ecosystem & nutrient cycling | CS | 4 Dec. 18 | Laboratory exam | CS, |
| 16 | Final Exam (11-21 Dec. 2018) | | | | | |

1. **Course Assessment**

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| --- | --- | --- | --- | --- | --- |
| **No.** | **Methods / Activities** | **Regulations** | **CLOs** | **Week** | **Weight Distribution (%)** |
| 11.1 | Mid-term exam | 3 hours exam  (other regulations will be announced in the class later) |  | 9 | 30 |
| 11.2 | Final exam | 3 hours exam  (other regulations will be announced in the class later) |  | 16 | 30 |
| 11.3 | Laboratory Report & Assignments | Evaluate group skill (according to scoring criteria – rubric scales) |  | Every week | 20 |
| 11.4 | Laboratory exam | Evaluate individual skill (according to scoring criteria – rubric scales) |  | 15 | 10 |
| 11.5 | Class attendance, participation, and quiz | Evaluation with the responsibility to work on due date and class attendance & participation in the class |  | Every week | 10 |
|  |  |  |  | **Total** | **100** |

**\*\*\* Please sign for class attendance. If the students attend in the class less than 80%, they will be announced to disqualification for the later course assessment activities. Thus, the unexpected matters bring to an absence in the class, please contact course coordinator to fill in the application form and attached the evidence of absence.**

1. **Grading System**

🗹 Criterion-referenced evaluation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Grade** | **Score** | **Grade** | **Score** | **Grade** | **Score** | **Grade** | **Score** |
| A | ≥ 80 % | B | 70 – 74.9% | C | 60 – 64.9% | D | 50 – 54.9% |
| B+ | 75 – 79.9% | C+ | 65 – 69.9% | D+ | 55 – 59.9% | F | < 50 % |

🞎 Norm-referenced evaluation

\*If use both criterion and norm-referenced evaluation, please tick two boxes.

1. **References and resources**

Crawley, M. J. (1997). Plant ecology (2nded.). Oxford England; Cambridge, Mass.: Blackwell Science.

Fenner, M. (1992). Seeds: the ecology of regeneration in plant communities. Wallingford: C.A.B. International.

Gurevitch, J. Scheiner, S. & Fox, G. (2002). The Ecology of plant. Sinauer Associates, Inc.

Herrera, C. M., & Pellmyr, O. (2002). Plant-animal interactions : an evolutionary approach. Oxford ; Malden, MA: Blackwell Science.