

Regulation of plant growth and development

Special Subjects
Elective 2 credit

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1. Course Description

This class will provide several current topics on plant molecular biology, including seed germination and dormancy; vegetative growth and reproductive growth; responses to environmental factors, and also review the major scientific databases. Students will learn about basic Internet tools needed to conduct biology research, including the database/web-tool for genomic information, transcriptome, and metabolome.

2. Course Objectives

This class will provide an understanding of the molecular mechanisms involved in regulation of plant growth and development, including plant evolution and structure; plant growth and development; flowering and flower development; responses to environmental factors; and provide an essential background about bioinformatics, basic techniques needed to conduct biology research.

3. Grading Policy

Progress report, Take-home Examination, Practical Test.

4. Textbook and Reference

Textbook

A Handout and resources will be provided throughout the course.

Reference

N/A

5. Requirements(Assignments)

To Be Announced.

6. Note

N/A

7. Schedule

- [1] Introduction
- [2] Biosynthesis and Signal transduction of phytohormone
- [3] Seed germination and dormancy 1; Gibberellin
- [4] Seed germination and dormancy 2; Absciscic acid
- [5] Seed germination and dormancy 3; Cross Talk
- [6] Plant growth and development 1; Root system
- [7] Plant growth and development 2; Shoot
- [8] Plant growth and development 3; Leaf
- [9] Plant growth and development 4; Flowering
- [10] Responses to environmental factors
- [11] Essential background of Bioinformatics
- [12] Bioresource
- [13] Database; NCBI, DDBJ
- [14] Database; transcriptome, metabolome
- [15] Database; Data analysis using database and web-tool