

# Regulation of plant growth and development

Special Subjects  
Elective 2 credit

ASAHINA, Masashi

## 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