



# SH03065: PLANT DEVELOPMENTAL BIOLOGY

## (SINH HỌC PHÁT TRIỂN THỰC VẬT)

Credits: 2 credits (Lecture: 2 – Practice: 0)

### EXPECTED LEARNING OUTCOMES

Course objectives	COURSE EXPECTED LEARNING OUTCOMES After successfully completing this course, students are able to	Expected learning outcomes of program
<b>Knowledge</b>		
CELO1	Presenting general knowledge about plant development biology; plant growth patterns.	ELO1
CELO2	Describe the cellular, genetic and molecular basis of cell line differentiation; embryogenesis; seedling growth; Shoot formation; leaf formation.	ELO1
CELO3	Presentation of the cellular, genetic and molecular bases in seed and fruit formation; root growth; vascular system development in plants.	ELO1
CELO4	Analysis of information related to methods, techniques and approaches in plant development biology research for scientific research	ELO1
<b>Skills</b>		
CELO5	Applying knowledge learned to collect, analyze and process information for research and application related to plant cell culture technology.	ELO10
<b>Personal autonomy and responsibility</b>		
CELO6	Proactively propose the implementation of scientific research problems related to the subject	ELO15

### CONTENT

Chapter 1: Overview of Plant Developmental Biology

Chapter 2 Cell lineages and positional information

Chapter 3: Embryogenesis

Chapter 4: Seedling development

Chapter 5. Shoot development

Chapter 6. Leaf development

Chapter 7. Transition to flowering and Flower development.

Chapter 8. Development of floral reproductive organs and gametophytes

Chapter 9. Pollination and apomixes

Chapter 10. Seed and fruit development

Chapter 11. Root development

Chapter 12. Vascular development

### STUDENT TASKS

- Attendance: Students are required to attend at least 2/3 of the total theory lectures of the course.
- Preparation for the lecture: Students are required to read lecture notes, text books and references before attending the class.
- Mid-term exam: Students miss a mid-term will be given a mark of zero.
- Final exam: Students must take the final exam and meet requirements.
- For online learning: Students need to install online learning software and fulfill the requirements for online learning.



### ASSESSMENT METHODS

- Attendance: According to regulations of VNUA.
- Mid-term exam: 30 minutes long with a 38 question quiz.
- Final exam: 50 minutes long with a 57 question quiz.
- For online evaluation: Students need to install software and fulfill the requirements for online evaluation.
- Grading: 10 marks
- Weighting:
  - ✓ Attendance: 10 %
  - ✓ Formative assessment: 30%
  - ✓ Final exam: 60%

### LECTURERS

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### LEARNING METHODS

- Read lecture notes, books and references before attending the class.
- Students are required to listen to lectures in class and perform other learning activities such as solving practice problems after class.
- Prepare and actively participate in discussion