



SH01004: GENERAL GENETICS (DI TRUYỀN HỌC ĐẠI CƯƠNG)

Credits: 3 credits (Lecture: 3 – 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
Knowledge		
CELO1	Understanding the principles of genetics in microbes, plant, animal and human and the application of these principles in breeding, modification, biomedicine and consulting.	ELO3, ELO14
CELO2	Understanding knowledge and methods in classical and modern genetics, compare and analyze modes of heredity from microbes to human in order to explain the output of genetic crosses, or to create new varieties with desired traits or characters and for consulting genetics.	ELO3, ELO14
CELO3	Identifying, analyzing the demand and requirement of genetic resources, germplasm and varieties in biotechnology, especially in agriculture and biomedicine. Able to find solutions and methods to create new varieties meeting the requirement from practice.	ELO3, ELO14
Skills		
CELO4	Applying good genetic techniques, especially conventional breeding and analysis the data. In addition, thinking critically and creatively in solving problems with plant, animal, and human genetic research; apply the genetic perspective to production in the biotechnology industry effectively	ELO13, ELO14
Personal autonomy and responsibility		
CELO5	Acting professionally, lawfully, honestly and responsibly to genetic resources, genetic diversity. Proactively update and accumulate knowledge and experience to improve professional qualifications.	ELO13, ELO15

CONTENT

- Chapter 1: General of genetics, heart of biology
- Chapter 2: Mendelian genetics
- Chapter 3: Interaction between genes and with the environment
- Chapter 4: Chromosomal genetics and genetic linkage
- Chapter 5: The molecular basis of genetics. Genetic mutation, chromosome, genome
- Chapter 6: Microbial genetics
- Chapter 7: Qualitative and quantitative genetics, heterosis and cytoplasmic genetics
- Chapter 8: Evolutionary genetics
- Chapter 9: Human genetics and applications
- Field trip: Visiting genetic center
- Practice: Plant crossing

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.
- Group discussion and presentation: Students are required to engage in group discussion.
- 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.
- Exercise and progress tests: Students must complete the exercises, 15-minute tests, group discussion and presentation with satisfied results.
- Mid-term exam: Midterm exam is 50 minutes long with a 50-question quiz.
- Final exam: Final exam is 50 minutes long with a 50-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

1. Prof.Dr. Phan Huu Ton, 0912.359.567, phton@yahoo.com
2. Assoc.Prof. Dr.Nguyen Duc Bach, 0983.926.497, ndbach@vnu.edu.vn
3. MSc. Nguyen Quoc Trung, 0976.588.239, nqtrung@vnu.edu.vn
4. Dr. Pham Thi Dung, 0945517268, ptdung@vnu.edu.vn
5. MSc.Trinh Thi Thu Thuy, 0989.644.779, ttthuy@vnu.edu.vn

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.

