科目名　Course Title	
遺伝学1(Genetics I)	
学科・専攻　Department/Program	受講年次　Grade
G30 Biology	2nd
授業形態　Class style	必修・選択の別　Compulsory or Elective
講義	* See "Remarks"
時間割コード　Registration code	開講期・曜日・時限　Semester,Day & Period
0682070	Fall semester Thu：2
単位数　Credit	科目区分　Course type
2	

担当教員　Instructor	VASSILEVA Maria(VASSILEVA Maria)
所属研究室　Laboratory	E202
連絡先　Contact	mnvassileva@bio.nagoya-u.ac.jp
居室　Room	E202

講義の目的とねらい　Course purpose

Aim: This course aims to develop students foundation in Genetics, and is the beginning of a series of courses on Genetics.
Objectives: By the end of this course, students should be equipped with knowledge concerning the mechanisms of processes related to how genetic information is inherited rigidly and flexibly from generation to generation.
Students are expected to become confident at using appropriate scientific terminology, be able to understand and explain the studied genetics concepts, and be able to analytically manipulate this information.

履修要件　Prerequisite

Strongly recommended to have completed Fundamentals of Biology 1

履修取り下げの方法について　How to Apply for Course Withdrawal

<「履修取り下げ届」提出の要・不要 Necessity/Unnecessity to submit "Course Withdrawal Request Form">
Necessary
<条件等 Conditions>
Students need to submit a Course Withdrawal Request Form when they have no intention of finishing the course. Submitting Course Withdrawal Request form is required to receive an Absent grade. This can be done by sending an e-mail to the course instructor.

成績評価　Grading

Evaluation is based on class participation, assignments and written examinations. A minimum score of 60/100 in every category is necessary to receive a passing grade.

不可（F）と欠席（W）の基準　Criteria for "Absent(W)" &"Fail" grades

Absent – based on submission of Course Withdrawal Request Form.
Fail – based on a total accumulated score of less than 60%.

関連する科目　Related courses

Genetics II, Genetics III

教室　Class room

Check the Course Timetable.
A 407 (in Fall 2020 this course may be conducted entirely online, information about the actual course format will be provided on NUCT course space)

到達目標　Goal

At the end of this course students will be able to clearly understand and explain in appropriate scientific terms DNA and chromosome structure, as well as the detailed mechanisms of DNA replication, DNA repair and DNA recombination.

授業内容　Content

1. DNA and RNA structure
Students will learn about detailed polynucleotide structure ad its relation to genetic processes.
2. Chromosomes, chromatin, and the nucleosome
Students will learn how DNA is structurally organized in the cell and how this structure is dynamically maintained and altered throughout cells' life.
3. Replication of DNA
Students will learn the detailed mechanism of DNA replication, in both eukaryotic and prokaryotic cells.
4. Mutability and repair of DNA
Students will learn what causes changes in DNA and the cellular mechanisms for DNA repair.
5. Genetic recombination
Students will learn in depth about the different types of DNA recombination mechanisms, including examples of these mechanisms in eukaryotic and prokaryotic cells.

Instructions for out-of-class study: This course require students to prepare for each class in advance by reading the assigned material and summarizing it before class.

教科書　Textbook

Molecular Biology of the Gene, Watson, James D. et al., Pearson Education.

参考書　Recommended reading

Essentials of Genetics, William S. Klug et al., Benjamin Cummings.
Molecular Biology of the Cell, B. Alberts et al., Taylor and Francis.

連絡方法　Contact method

The course instructor accepts question out of class hours by e-mail.

その他　Remarks

*See Course List and Graduation Requirements for your program for your enrollment year.
Please note that the class time will focus on discussion of the material, so it is essential that students come prepared.