

【到達目標】

- To understand the biology and diversity of nematodes
- To understand the uses of the nematode *Caenorhabditis elegans* in modern biological research
- To understand the anatomy and life cycle of *C. elegans*
- To learn how to create new strains containing desired mutations by designing crosses between animals
- To acquire the knowledge and experience needed to begin genetic research with *C. elegans*

【授業計画と内容】

Course Schedule and Contents

- 1 Overview of the course; nematodes and the place of *C. elegans* in the tree of life. Set up for worm collection.
- 2-3 Nematode development, anatomy, and life cycle
- 4-8 Wild Worms of Kyoto: worm observation and species identification
- 5 Basic worm genetics: selfing and crossing (with microscopy observation)
- 6-9 Genetics, meiosis, and sex chromosomes
- 10 Fluorescence microscopy of worm chromosomes
- 11-12 Genome sequence of *C. elegans* and its relatives
- 13 Selected topics in nematode research and application to human health
- 14 Presentation by each student on one topic (5 minutes, 1 A4 page)
15. Feedback

【履修要件】

This is an introductory course. There are no requirements, but a basic familiarity with biology and genetics will be beneficial.

【成績評価の方法・観点】

Evaluations will be based on participation, short quizzes, and a final presentation, with contributions of 40%, 40%, and 20%, respectively, to the final grade.

【教科書】

授業中に指示する

【参考書等】

(参考書)

Fay, Starr, Spencer, Johnson 『Worm Breeding for Dummies: A guide to genetic mapping in *C. elegans*』
(PDF textbook)

【授業外学修（予習・復習）等】

Students will have to understand technical vocabulary in English. This may require studying outside of class hours.

【その他（オフィスアワー等）】

Office hours will be 1 hour once per week, schedule to be announced on the first day of class.

This class involves some genetic experiments on nematodes.

遺伝子実験：対象(ヒト以外の動物、植物、生物等)