

Reproductive and Developmental Biology

Special Subjects
Elective 2 credit

OTA RYOMA

1. Course Description

In the former part of this course, students will be lectured about fundamental principles of reproduction and development in animals. In the middle part of this course, students will read papers in turn to improve the skills of logical thinking and to learn methodologies necessary for biological studies. Finally, each student will make a presentation of a paper. In this course, students will acquire knowledge and skills related to DP1 and DP3.

2. Course Objectives

The goals of this lecture are as follows;

- 1) understanding of fundamental principles of reproduction and development in animals.
- 2) learning methodologies necessary for biological studies.
- 3) improving reading, logical thinking, and presentation skills.

3. Grading Policy

The final grade will be based on reading of papers (40 points) and presentation (60 points). A score of 60 points or more (out of 100 points) is passed. Students with attendance rates of less than 60% (less than 9 lectures) will not qualify for the evaluation.

4. Textbook and Reference

Textbook

Distribute the print if necessary.

Reference

Scott F. Gilbert 著 ギルバート発生生物学 株式会社メディカル・サイエンス・インターナショナル ISBN: 9784895928052

館鄰 著 生殖生物学入門 UP BIOLOGY 東京大学出版 ISBN: 9784130631327

5. Requirements(Assignments)

Review of cell biology, molecular biology, molecular genetics, and developmental biology will help students understand the lecture in this course. Students will need preparations for reading papers in turn and make a presentation.

6. Note

7. Schedule

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| [1] | Introduction to Reproductive and Developmental Biology |
| [2] | Overview of animal reproduction and development |
| [3] | Animal development 1: Cell differentiation and differential gene expression |
| [4] | Animal development 2: Cell specification in the embryogenesis |
| [5] | Animal development 3: Stem cells |
| [6] | Animal reproduction 1: Germline formation |
| [7] | Animal reproduction 2: Sex determination of the germline |
| [8] | Animal reproduction 3: Production of gametes and fertilization |
| [9] | Reading of a paper related to animal development 1 |
| [10] | Reading of a paper related to animal development 2 |
| [11] | Reading of a paper related to animal reproduction 1 |
| [12] | Reading of a paper related to animal reproduction 2 |
| [13] | Presentation of an original paper 1 |
| [14] | Presentation of an original paper 2 |
| [15] | Summary |