

# COURSE DETAIL

## MOLECULAR BIOLOGY

**Country**

Japan

**Host Institution**

Waseda University

**Program(s)**

Waseda University

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Biological Sciences Biochemistry

**UCEAP Course Number**

102

**UCEAP Course Suffix****UCEAP Official Title**

MOLECULAR BIOLOGY

**UCEAP Transcript Title**

MOLECULAR BIOLOGY

**UCEAP Quarter Units**

3.00

**UCEAP Semester Units**

2.00

## Course Description

This course covers the molecules that constitute living organisms and their control mechanisms, as well as biotechnologies and the principles of aging and disease. Students are expected to acquire the abilities to understand and explore biological systems at the molecular and cellular level.

Course topics include:

- Cells: The Fundamental Units of Life and Chemical Components of Cells
- Protein structure and function
- DNA and Chromosomes
- DNA Replications and Repair
- From DNA to Protein: How Cells Read the Genome
- Analyzing the Structure and Function of Genes
- How Cells Obtain Energy from Food and Energy Generation in Mitochondria and Chloroplasts
- Cell Signaling
- Cytoskeleton
- The Cell-Division Cycle
- Cell Communities: Tissues, Stem Cells, and Cancer

## Language(s) of Instruction

English

## Host Institution Course Number

LE302 / BIOX221L

## Host Institution Course Title

MOLECULAR BIOLOGY

## Host Institution Campus

SILS

## Host Institution Faculty

## Host Institution Degree

## **Host Institution Department**

SILS - Life, Environment

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