# COURSE DETAIL

| ESSENTIAL CELL BIOLOGY |
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| **Country**<br>Japan |
| **Host Institution**<br>Tohoku University |
| **Program(s)**<br>Engineering and Science |
| **UCEAP Course Level**<br>Lower Division |
| **UCEAP Subject Area(s)**<br>Biological Sciences |
| **UCEAP Course Number**<br>50 |
| **UCEAP Course Suffix** |
| **UCEAP Official Title**<br>ESSENTIAL CELL BIOLOGY |
| **UCEAP Transcript Title**<br>ESSENTL CELL BIOLGY |
| **UCEAP Quarter Units**<br>3.00 |
| **UCEAP Semester Units**<br>2.00 |

**Course Description**

Cells are the structural and functional units of living organisms. Understanding the basics of cell biology is essential for studying all areas of life sciences and any related branches of natural sciences. The main objective of this course is to learn the essential principles of cell biology by learning how the living cells are made and operating from a molecular perspective: especially, how DNA, RNA and proteins cooperatively work inside the cells to allow the maintenance, replication, and responses to stimuli. This course covers the textbook *Essential Cell Biology* together with Biology B, which will be held in the spring semester.

Upon finishing this course, students will have a solid grasp of the structure of cells and how they replicate themselves, exert cellular functions and communicate with each other. More concretely, the course introduces intracellular structure and molecular dynamics inside cells, mechanisms of DNA replication, repair and recombination, gene expression and its regulation, and cellular signaling. In addition, the course also features the research topics of the instructors, all of whom are young biologists/biochemists in FRIS, so that students can get a glimpse of cutting-edge sciences.

**Language(s) of Instruction**
English

**Host Institution Course Number**
N/A

**Host Institution Course Title**
BIOLOGY A: ESSENTIAL CELL BIOLOGY

**Host Institution Course Details**
https://gkms3.bureau.tohoku.ac.jp/sa_qj/slbssbdr.do?value(risyunen)=2023&value(...

**Host Institution Campus**
Tohoku University

**Host Institution Faculty**

**Host Institution Degree**

**Host Institution Department**
Collegewide

**Course Last Reviewed**
2023-2024

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