

# COURSE DETAIL

## MARINE BIOTECHNOLOGY

**Country**

Japan

**Host Institution**

Tohoku University

**Program(s)**

Engineering and Science

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Biological Sciences

**UCEAP Course Number**

103

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

MARINE BIOTECHNOLOGY

**UCEAP Transcript Title**

MARINE BIOTECH

**UCEAP Quarter Units**

3.00

**UCEAP Semester Units**

2.00

## **Course Description**

This course examines developmental biology of fish, molecular engineering in fish, and bioinformatics using computer and web sites. The course covers fundamental issues of genetic engineering and genomics in fish, and bioinformatics necessary for future researches in the fields of marine biotechnology. Topics during the class include: embryonic development in fish; forward genetics (Mutant library, Positional cloning); reverse genetics (Knockout fish, TALEN, CRISPR/Cas9); other basic techniques essential for fish biotechnology; fish genomes; practical training using computer (BLAST search, Multiple alignment, Phylogenetic tree, PubMed, Ensembl), larval and metamorphic development; transgenic fish.

## **Language(s) of Instruction**

English

## **Host Institution Course Number**

ABS-APS346E

## **Host Institution Course Title**

MARINE BIOTECHNOLOGY

## **Host Institution Course Details**

### **Host Institution Campus**

Tohoku University

### **Host Institution Faculty**

### **Host Institution Degree**

### **Host Institution Department**

Agriculture

## **Course Last Reviewed**

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