

# COURSE DETAIL

## ELEMENTARY PARTICLE PHYSICS

**Country**

Japan

**Host Institution**

Tohoku University

**Program(s)**

Engineering and Science

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Physics

**UCEAP Course Number**

105

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

ELEMENTARY PARTICLE PHYSICS

**UCEAP Transcript Title**

PARTICLE PHYSICS

**UCEAP Quarter Units**

3.00

**UCEAP Semester Units**

2.00

## **Course Description**

The science of particle physics is to understand our world by studying particles that constitute the universe and their interactions. This course explains the basic concept of the particle physics as well as the Standard model and its related important experiments and results.

The course covers the following topics:

- Elementary particles and their types and characteristics of interactions
- Properties of nuclei
- Elementary particle detectors and accelerators
- Collider experiments and nuclear structure
- Quark and strong interaction
- Weak interaction and symmetry breaking
- Standard model and verifications
- Neutrino oscillations

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

English

### **Host Institution Course Number**

N/A

### **Host Institution Course Title**

ELEMENTARY PARTICLE PHYSICS

### **Host Institution Course Details**

[https://www.insc.tohoku.ac.jp/english/wp-content/uploads/2024/09/SM22007\\_Elemen...](https://www.insc.tohoku.ac.jp/english/wp-content/uploads/2024/09/SM22007_Elemen...)

### **Host Institution Campus**

Tohoku University

### **Host Institution Faculty**

### **Host Institution Degree**

**Host Institution Department**

JYPE

**Course Last Reviewed**

2024-2025

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