

Introduction to Computer Science and Engineering
コンピュータ理工学のすすめ
Advanced ICT global program

Semester of the lectures

Officially, the courses will be opened in AY2017 Q1 and Q2
However, half of lectures will be moved up to AY2016 Q3 and Q4 for the needs/request of students enrolled in the Advanced ICT global program.

対象学年 Course for; freshman

Credits 2.0

Coordinator: Prof. S. Tei on behalf of President Oka

Instructor: Prof. Oka, Prof. Miyazaki, Prof. S. Tei, and other professors and experts

Recommended track N/A

Prerequisites N/A

Course outline

In this course, it mainly provides the freshman the story from various points of views by professors and experts in various fields, to understand the contents and the disciplines of computer science and engineering (CSE for short) and the significance to learn CSE. Specially, it helps the students to design their future plan, when the computers have been universally used in society, or society is expecting anything on the computers, and the requirement and needs to CSE from various fields. Unlike many of the other subjects, in this course, we invite a variety of experts, specifically, the president and deans, the responsibility Professor of each fields of UoA, and external experts and venture companies.

Moreover, this course discusses the basic concepts, introduces to basic courses/subjects for CSE, and overview some advanced research fields in CSE. It also provides students the opportunities of visiting local venture companies using ICT and knowledge of computer science and Engineering, making presentation based on their understanding on CSE, and discussing with each other on the topics to enhance their understanding of CSE.

Objectives and attainment goals

By attending the talk of experts in many areas of computer science and engineering, the students can have guidelines for the career decision of the students. More specifically, it provides an important reference for selection of field, the determination of the affiliation laboratory and research themes, direction of graduate research, and determination of job-hunting. In addition, students can understand the position of each course in the studying or future learning plan, understand the purpose of learning, and improve the learning motivation.

At the end of the course the student should be able to understand the basic concepts and basic courses for CSE, and know some advanced research fields in CSE. In addition, students should have experience of visiting local venture companies using ICT and knowledge of CSE, making presentation based on their understanding on CSE, and

discussing with each other on the topics to enhance their understanding of CSE. Moreover, the students can have broad views and familiar with the methods for learning computer science and engineering

Class schedule

Quarter 3

- 1) Nov. 1 Introduction to the course, some basic concepts (Prof. S. Tei)
[Lecture1.pdf](#) [Lecture1AfterLecture.pdf](#)
 - 2) Nov. 8 Orientation for oversee students enrolled in Advanced ICT program Scholarship, life plan, and study plan
(Dr. Zhou supported by Prof. Kansen, Mr. Watanabe)
[Lecture2.pdf](#) [Orientation.pdf](#)
 - 3) Nov. 15 Basic concepts and courses of computer science and engineering (1) Prof. S. Tei
Structure of Univ. of Aizu curriculum & strongly recommended courses
Essence and examples of Computer Architecture, OS, Computer Networks
- * 11月22日 no classes
- 4) Nov. 29 Presentation by students on “My understanding on Computer Science and Engineering (Prof. Tei, Prof. Junbo Wang)

Quarter 4

- 5) Dec. Visiting local venture company 1 (coordinator Prof. Kansen)
- 6) Dec. Visiting local venture company 2 (coordinator Prof. Kansen)
- 7) Jan. Visiting local venture company 3 (coordinator Prof. Kansen)
- 8) Jan. Report & presentation on the visiting of ventures (Prof. Tei & Kansen)

2017 Spring, Q1 and Q2

- 9) Introduction to the divisions, curriculums, fields, and graduation thesis ,
- 10) Basic concepts and courses of computer science and engineering (2)
Essence and examples of Algorithms, Computer Languages, Compiler, Database
- 11) Advanced and strategic researches on UoA (1)
Introduction to Deep Learning and Robotics
- 12) Advanced and strategic researches on UoA (2)
Cloud computing on the Big Data, healthcare and bio-engineering
- 13) Advanced and strategic researches on UoA (3)
Introduction to High-performance computing & Security, & VR, CG,
- 14) Introduction to the graduate school (Prof. S. Tei)
- 15) Debates & discussion (including Japanese students) & report
On “ What Should We Learn and How to Learn ”

Textbook(s)

Instead of textbooks handout will be available

Grading method/criteria

- Attendance & performance of Answer questions/quiz
- Presentation 30%
- Middle Report (venture visit) 30%
- Debates and report 30%

Note for course registration

This course is for first year student with 2 credits. 3rd year students at encouraged to attend to know the CSE and University of Aizu researches fields. All students including Japanese students are welcome to attend the course, to have more knowledge and study using English as a medium of instruction.

Reference (course website, literature, etc.)