# COURSE DETAIL

| SIGNALS AND SYSTEMS |
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| **Country**<br>China |
| **Host Institution**<br>Tsinghua University |
| **Program(s)**<br>Tsinghua University |
| **UCEAP Course Level**<br>Upper Division |
| **UCEAP Subject Area(s)**<br>Mechanical Engineering |
| **UCEAP Course Number**<br>154 |
| **UCEAP Course Suffix** |
| **UCEAP Official Title**<br>SIGNALS AND SYSTEMS |
| **UCEAP Transcript Title**<br>SIGNALS AND SYSTEMS |
| **UCEAP Quarter Units**<br>6.00 |
| **UCEAP Semester Units**<br>4.00 |

**Course Description**

This course covers the signal representation/analysis, especially how to represent the complex signals in simple format either in time or frequency domain. Based on that, it also covers how signals behave after passing through various linear, time-invariant systems. It consists of following individual yet highly related sessions including Introduction, time-domain analysis on the linear, time-invariant systems, signal representation in frequency domain (Fourier analysis & Fourier transform), Laplace Transform, Discrete time-domain signals, Z-Transform, Discrete & Fast Fourier transform, the state space analysis of the linear systems, and etc. This course focuses on the basic theory and analytical method from time-domain to transform domain, from continuous to discrete, from the description of single-input-single-output to the state variables. It will lay down a solid foundation for the further study for courses including Digital Signal Processing, Stochastic Process, Communication Circuit, Principle of Communication. The requisite courses include calculus, linear algebra, complex variable functions, principles of electric circuits.

**Language(s) of Instruction**
English

**Host Institution Course Number**
30230654

**Host Institution Course Title**
SIGNALS AND SYSTEMS

**Host Institution Course Details**

**Host Institution Campus**

**Host Institution Faculty**

**Host Institution Degree**

**Host Institution Department**

**Course Last Reviewed**
2024-2025

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