

Aiming at Nurturing Human Resources Capable of Instantly Providing Industry with Strategic Skills

The PED Program was developed and inaugurated in April 2007 by the Yokohama National University Graduate School of Engineering in order to nurture business-oriented engineers and researchers capable of responding to the wide-ranging issues that face modern advanced societies, and it represents the first educational program in Japan. The focus of the program is aimed at nurturing human resources capable of providing industry with strategic skills through a curriculum that does not concentrate only on a knowledge of engineering, but also enables students to acquire the skills necessary to be active in society through such activities as presentation English and long-term internships, as well as dissertation reviews based on their proficiency as business-oriented engineers and researchers, etc. The program has already been completed by many students, and the effective results it has achieved led to it being awarded the Japanese Society for Engineering Education Award in 2013.

Hiroshi Fukutomi

The Difference between PED and TED

PED Program

Pi-type Engineering Degree

The PED program was established to provide education for business-oriented engineers and researchers capable of responding to the contemporary issues faced by a diverse range of high-level industries. It is known as the New Yokohama-Style Graduate School Education program for studying multiple specialty modules linked into a basic knowledge of engineering.

Owing to this, the students do not belong to a specific research laboratory during master's course, but instead complete course work through practical studies, presentations and induction courses (including long-term internships), and their completion reviews are based on the results (portfolios) they achieved through their studies and projects instead of their master's theses. They are required to compose their doctoral theses as usual during doctoral course, and these theses are reviewed from the point of view of them being business-oriented engineers and researchers aiming at developing high-level articles.

TED Program

T-type Engineering Degree

This program requires the students to study hard in their specific fields of specialty while belonging to research laboratories in the conventional manner, and they must compose dissertations (master's thesis, doctoral thesis). It is a program for nurturing researchers and high-level specialist engineers.

Basic knowledge of technical management (common PED subjects) and engineering, presentation English (compulsory studies in first half of course)

Module A

Lectures related to acquiring project-type training for contemporary issues in the studio (field A)

Module B

Lectures related to acquiring project-type training for contemporary issues in the studio (field B)

Basic knowledge of engineering (Common Graduate School of Engineering subjects and common specialization subjects)

Students in the Graduate School of Engineering are mainly accepted through laboratory guidance from specific research subjects

Features of the PED Program



P E E D

The PED Program website is now open.

A website for students currently involved in the PED Program and student who have completed the program is now available. Up-to-date information on the PED Program is posted on a consistent basis, so feel free to check it out.

Website Menus

- News & Information
- History of PED
- Q&A Related to the PED Program
- Introduction of Basic Subjects
- Introduction of the PED Management Office
- Opinions of Past Students
- Etc.



Website

Yokohama National University

<http://www.ynu.ac.jp>

Graduate School of Engineering

<http://gakufu.eng.ynu.ac.jp>

79-5 Tokiwadai, Hodogaya Yokohama 240-8501 Japan
Graduate School of Engineering Yokohama National University
Graduate School of Engineering Section TEL:045 -339 -3817

The PED Program website

Students currently

<http://ped-program.ynu.ac.jp>

Student who have completed

<http://ped-alumni-alumnae.ynu.ac.jp>

PED Management Office TEL:045 -339 -3809

Graduate School Education Program for Business-Oriented Engineers and Researchers

Yokohama PED Program

Pi-type Engineering Degree

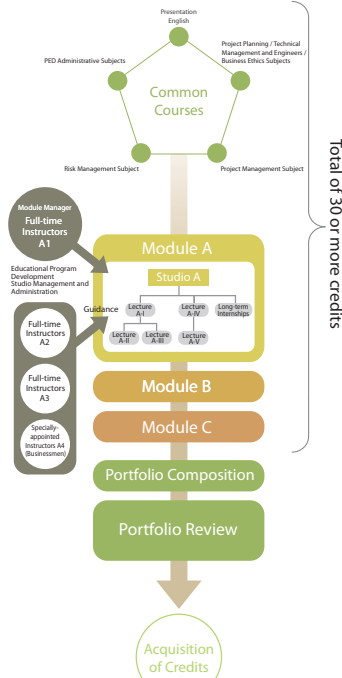
Graduate School of Engineering
Yokohama National University

Master's Course PED Program

| Department | Master's Course Module |
|--|---|
| Materials Science and Engineering | Advanced Functional Materials, Advanced Materials System, Applied Biological and Environmental Materials, Applied Advanced Functional Materials, Applied Biological and Environmental Materials, Design Studio in Advanced Process Engineering, Analysis Studio in Biotechnology and Life Sciences, Design Studio in Energy Creation, New Generation Chemical Process Engineering Studio, Synthesis Studio in Biotechnologies and Life Sciences, Design Studio for Energy Creation |
| Systems Integration | Design of Processing Systems, Manufacturing of Processing Systems, Design of Thermal and Fluid Systems, Manufacturing of Thermal and Fluid Systems, Design of Integrated Systems, Manufacturing of Integrated Systems, Ocean Space Systems, R&D in Ocean Space Engineering Practice, High-Reliability Calculation Functional Material Engineering, Material Engineering for Marine Structure Evaluations and Control |
| Physics, Electrical and Computer Engineering | Integrated Circuit Design, Open Source Engineering Control, Nanoelectronics, Computation Techniques of Light Waves, Computation Techniques of Radio Waves, Information and Communication Technology, Electric Energy Supply, Advanced Electronics and Materials, Integrated Electronics, Electrical and Computer Engineering for Future Medical Care and Welfare, Environment Adaptive Smart Systems, Wireless Communication Systems, Advanced Photonics, Highly Information Network Systems, Physics under Extreme Conditions, Condensed Matter Physics, Simulation Physics, Quantum Physics |

※ Details on holding the lecture modules may differ depending on the academic year.

Curriculum Flow



What is a Module?

An educational unit systematically comprising of studio subjects, studio-related lectures and internships.

What is a Studio?

An educational system for providing advanced project-type practice, presentation practice and induction courses to small groups of people.

The Master of Engineering

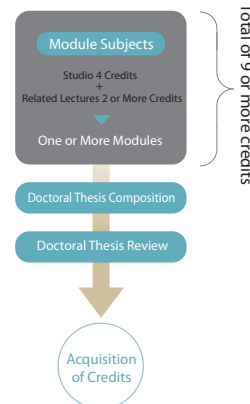
Doctoral Course PED Program

| Department | Second Half of the Doctoral Course (Doctoral Course) Module |
|--|---|
| Materials Science and Engineering | Green Chemistry and Related Materials, Materials for Clean Energy, Photonic Devices and Related Materials, Engineering in Biology, Medicine and Bioanalytical Chemistry, Computational Chemistry, Innovative Chemical Process Engineering, Advanced Energy Creation, Electronics JSSO Engineering |
| Systems Integration | Advanced Material Design, Design of Advanced Process Systems, Design of Thermal and Fluid Systems, Design of Advanced Integrated Systems, Design of Large-scale Systems |
| Physics, Electrical and Computer Engineering | System Design, System Devices, Energy and Control, Medical Engineering and Informatics, Physics and Chemistry of Matter: Electronic Properties and Mathematical Physics, Photonic Devices and Related Materials, Electronics JSSO Engineering |

※ Details on holding the lecture modules may differ depending on the academic year.

The Doctor of Engineering

Curriculum Flow



- Guidance on composing dissertations provided in the studio so students can devote even more time to their specialty.
- The lectures are held on Saturdays and Sundays, making it an educational program that enables even working students to complete the course within a short period of time.
- Dissertations will be credit reviewed from the viewpoint of business people active in society.

The PED Program welcomes working people.
Why not give an advanced graduate school education a try?

Working students can complete the course without putting themselves under pressure

PED program provides graduate school education services that boast high levels of practical workability in Yokohama where knowledge-integrated industries gather. Company employees who already have a master's degree and have accumulated research in results are able to acquire their doctoral degree within a minimum of one year. A preferential treatment system is also in effect to support the high-level careers of working engineers, etc., who wish to accept new challenges.

Implemented with the Cooperation of Companies and Organizations

Basic Subjects

Presentation English

Aims of the Course

This course has been designed to provide studies into the practical use of presentation English, an indispensable element for business-oriented engineers and researchers in an ever-changing international society that includes Japan, as well as practical skills and techniques in light of the current and future conditions prevalent in Japan. In further detail, it aims to improve business communication skills and presentation abilities in British and American English at the intermediate to advanced levels.

Course Contents

Each class consists of 20 students. English proficiency is basically developed through interactive communications between all members, including question and answer sessions.

HILTI JAPAN

Effective Business Planning in Global Company -Business Planning that requires team leaders-

Although it goes without saying that a management team to represent the administrators for efficiently managing the manpower, commodities, money, information and other resources required for running a company is a foregone conclusion, what we really need at the moment are departments that manage middle management to acquire the skills for establishing and getting the best out of efficient business plans at the sectional level. Through the duration of this course, the students will not only concentrate on their career paths as engineers, but also attend interactive lectures and workshops on the process of establishing business plans in a global manufacturing company based in Europe who are targeting specialist managers and administrators, as well as gain hands-on experience of basic establishment processes for creating actual business plans.



Project Management I, II

Course Overview

- The definition of project management, and the requirements of project managers and project management to which they have been assigned.
- Introduction of actual development projects (aerospace development, LNG manufacture and other plant construction.)
- Hands-on experience of project work using LEGO robot.
- Understanding and practicing with tools for establishing project planning.
- Project management methods required.
- Engineering management techniques.



Attractive Program

Instructor Introduction

Joined Sumitomo Corporation in 1967 after graduating in law from Keio University. Positions up until now include vice branch manager of Sumitomo Corporation's London branch in the United Kingdom (1983), branch manager of Sumitomo Corporation's Houston branch in the United States of America (1992), and the CEO of Sumitomo Ocean Development & Engineering Co., Ltd. (2002).

In addition to New York, Chicago, London and Houston, etc., he has been stationed or accumulated work experience in as many as forty countries worldwide, including Australia, Indonesia, India, Malaysia, Thailand, Singapore and China, and is well versed in the fields of business administration, risk management and communications involved in negotiations, etc.



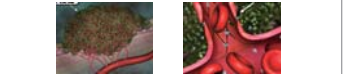
Yoshitaka Ando
Instructor in charge of Presentation English



Research Planning Bio-Industry Studio

Course Overview

This course is carried out with the cooperation of Japan Bio-Industry Association. It consists of lectures given by researchers and administrators from leading companies in the bio-industry. Studio training through internships with companies that specifically match up with the needs of students in both master's and doctoral degrees.



Professional Ethics in EU & US

Course Overview

Ethics, law and morals are different elements. There are risks inherent with standing on the leading edge of global business without fully understanding the structure of law, ethics and morals that is prevalent in international companies exposed up until now by Japan's educational culture and mass media. This course is comprised of the following three parts below.

- The "path to thinking" and the standard skills required to explain results to others.
- The moment when law raises on the industrial stage.
- Regulations and standards prevalent in the nuclear power industry.

Professional Engineering I, II

Course Targets

- Understanding professional engineers in the field of technology, and learning about the way to be.
- Learning about the safety points that concern engineers more than anything else, and raising an awareness of all basic points pertaining to engineering.
- Learning about proprietary rights, including those of engineers who wish to move ahead and start up their own companies, etc.
- Learning about the current situation regarding global warming, an awareness of which is instilled in all engineers, and considering the technological steps that need to be taken in the future in all fields in order to counter it.
- Learning about the role of engineering and engineers through examining past history, and raising an awareness of the technological issues that are likely to be faced in the future.

