Researchers list

Graduate School of Engineering

2018

- Graduate School of Engineering
  (Master's Program)
  1. Course of Electrical and Electronic Engineering
  2. Course of Applied Science
  3. Course of Architecture and Civil Engineering
  4. Course of Mechanical Engineering
  5. Course of Biomedical Engineering

Graduate School of Engineering (master's program)

Dean,
Prof. Kunio Okimura

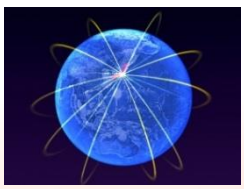
The Graduate School of Engineering was started with two courses at 1963, and has been expanded to eleven courses which cover almost all engineering fields. We can offer appropriate education to students who have various interest and intention.

Our objective is to foster students with international mind based on both humanity and specialty according to our founding spirit. We have prepared suitable curriculums to give specialized knowledge in each course, and develop students' abilities of recognizing and solving problems due to parallel training in research subjects. We also try to give our students right understanding of human's history and international issues.

We carry out some of lectures in English in order to provide opportunities for foreign students and enhance international activities of Japanese students. Our students can take their master degree entirely in English. We also promote activities of students in international society and encourage them to present their works in international conferences and journals. These experiences probably help them to play active parts in the international community.

We are looking forward to your joining of our graduate school and studying your interest together with us. Thank you for your attention to our web site.

http://www.u-tokai.ac.jp/international/graduate/engineering.html
http://www.gtec.u-tokai.ac.jp/en/



1. Course of Electrical and Electronic Engineering

Industrial production and social interactions, and indeed virtually all forms of human activity in today's modern world, are utterly dependent on electrical and electronic technology. This same technology can also play a key role in the preservation and rehabilitation of environmental degradation here on earth and in near space caused by human activity. Meanwhile, due to explosive popularization and advancement of internet and other digital networks, meanwhile, they now constitute a vital component of public infrastructure.
Recent years have seen the emergence of increasingly specialized electrical and electronic engineering courses at the graduate school level. Tokai University however has decided to revert a conventional broad-based approach in order to provide a more well-rounded education for engineers. The re-established Course of Electrical and Electronic Engineering combines previous courses in electrical and electronics systems, electro photo optics and information science and engineering to provide an engineering perspective on a range of different fields including electrics, electronic, information science, communications, photo optics, imaging, control, bioengineering and medical science. By fusing traditional academic structures with various innovative technologies, the course generates valuable new understandings in interdisciplinary research and teaching outcomes.

1.1. Electronics

Name	Research Field
Prof. Dr. Takeshi Asakawa	VLSI testing
Prof. Dr. Kunio Okimura	Electronic materials, Oxide thin films, Reactive sputtering
Prof. Dr. Kiyoteru Kobayashi	Electronic device engineering, Integrated circuit

1.2. Electromagnetic engineering

Name	Research Field
Prof. Dr. Kimitoshi Murano	Electromagnetic compatibility, Electromagnetic field and wave, Transmission line
Assoc. Prof. Dr. Hiroshi Kuwahata	Plasma application engineering, Surface modification, Water purification

1.3. Power electronics

Name	Research Field
Prof. Dr. Ryu-ichiro Ohyama	Electrostatics, Electrical discharge, Electro-hydro-dynamics
Prof. Dr. Masayuki Morimoto	Power electronics, Electric machine, Vehicle technology
Assoc. Prof. Dr. Mamiko Inamori	Signal Processing, Wireless communication, Power transfer
Jr. Assoc. Prof. Dr. Masachika Ishimaru	Power system operation & planning, Power system

1.4. Clean energy

Name	Research Field
Prof. Dr. Masao Isomura	Thin-film semiconductor, Solar cell, Plasma process
Prof. Dr. Hideki Kimura	Energy conversion
Prof. Dr. Yoshiyuki Show	Fuel-cell, Carbon nanotube, In-liquid plasma
Jr. Assoc. Prof. Dr. Tetsuya Kaneko	Solar cell, Photovoltaics, Energy conversion

1.5. Complex system, Deep leaning

Name	Research Field
Prof. Dr. Tomoko Ozeki	Machine learning, Information geometry, Statistical physics
Prof. Dr. Xuehou Tan	Computational geometry
Assoc. Prof. Dr. Hironori Makino	Applied quantum physics, Nonlinear science, Chaos and fractal
Assoc. Prof. Dr. Hiroshi Someya	Evolutionary computation, Stochastic optimization, Artificial intelligence

1.6. Robotics, Man machine interface

Name	Research Field
Prof. Dr. Katsuhiko Inagaki	Robotics design
Prof. Dr. Takeshi Inaba	Human machine system, Control engineering
Prof. Taizo Miyaji	Autonomous and cooperative systems, Man machine interface, Safe movement support
Assoc. Prof. Dr. Kentaro Takemura	Computer vision, Human Sensing
Junior Assoc. Prof. Dr. Satoshi Muramatsu	Intelligent robotics

1.7. Optical electronics

Name	Research Field
Prof. Dr. Masaki Asobe	Optical communication, Opto-electronics, Laser sensing
Prof. Dr. Chiemi Fujikawa	Optical functional device, 3D display
Prof. Dr. Hiroshi Murotani	Optical Thin films, Optical materials, Optoelectronics

1.8. Optical engeneering

Name	Research Field
Prof. Dr. Takehisa Shibuya	Holography, Optical Sensing, Plasma physics, Optical device
Assoc. Prof. Dr. Shu Takeshita	Optical radiation measurement, Light Environmental Sciences
Jr. Assoc. Prof. Dr. Takehiro Tachizaki	Optical measurement, Near-field optics, Probe microscope

1.9. Biomedical engineering

Name	Research Field
Prof. Dr. Kagayaki Kuroda	MRI, Medical Engineering, Applied Electromagnetics
Prof. Dr. Motoharu Takao	Neuroscience, Neuroinfomatics, Experimental Psychology
Prof. Dr. Kazushige Magatani	Medical engineering, Rehabilitation engineering, Bio-signal processing
Assoc. Prof. Ph.D. Kenji Mizutani	Neuroscience, Human Machine Interface, Electrophysiology

1.10. Imaging and information engineering

Name	Research Field
Prof. Dr. Osamu Uchida	Disaster information systems, Social media, Mobile Internet
Prof. Dr. Makoto Omodani	Electronic paper, 3D display, Perceptual human interface design
Prof. Dr. Mitsuo Sone	Digital image processing
Prof. Dr. Shuichi Maeda	Imaging Materials, Electronic paper

1.11. Remote sensing

Name	Research Field
Prof. Dr. Kohei Cho	Remote sensing, Image processing, Environmental education
Prof. Dr. Mitsuhiro Toratani	Ocean color satellite remote sensing, Atmospheric correction
Prof. Dr. Takashi Nakajima	Earth environment remote sensing, Climate change study, Atmospheric science
Prof. Dr. Kiyonari Fukue	Image processing, Remote sensing, Handwriting analysis

2. Course of Applied Science

The Course of Applied Science covers a broad range of expertise along with in-depth studies in specific fields such as biochemistry, applied chemistry, nuclear engineering, and metallurgical and materials engineering. Students learn how to identify the salient issues and challenges in applied physics and chemistry and how to design appropriate strategies and solutions. The course aims to produce researchers and technicians, equipped not only with knowledge and techniques, but with advanced theoretical and practical skills complemented by a broad world view, an understanding of historical developments and an appreciation of the human dimensions. Graduates will exhibit highly innovative research capabilities, excellent communication and presentation skills and a broad-minded global outlook.

2.1. Metal materials engineering

Name	Research Field
Prof. Dr. Toru Kuzumaki	Nanomaterials Instrumentation Science, Engineering Science for Regenerative Medicine, Materials Science for Archaeology
Prof. Dr. Itaru Jimbo	Aerospace material processing
Prof. Dr. Masayuki Takashiri	Environmental materials
Prof. Dr. Wunderlich, Wilfried	Thermoelectric conversion material
Prof. Dr. Junichi Matsushita	Ceramic Science and Engineering
Prof. Dr. Yasuyuki Miyazawa	Joining Science, Brazing & Soldering, Metallurgy
Jr. Assoc. Prof. Dr. Hidetoshi Oguro	Superconductivity engineering
Jr. Assoc. Prof. Dr. Ryota Genma	Hydrogen storage Thin Film Engineering

2.2. Nuclear Engineering

Name	Research Field
Prof. Dr. Atsushi Ito	Radiation Biophysics, X-ray imaging, Medical application of radiation
Prof. Dr. Michiaki Utsumi	Plasma physics, Neutron generator
Prof. Dr. Takanori Kameyama	Nuclear reactor physics, Nuclear fuel engineering, Nuclear reactor simulator
Prof. Dr. Taka-aki Sakai	Reactor safety, Thermal-hydraulics, Sodium-cooled fast reactor engineering
Prof. Dr. Yoshihito Matsumura	Materials science for energy conversion, Thin film technology, Plasma Chemistry
Prof. Dr. Shigeo Yoshida	Radiation measurement and analysis, Radiation management, Radiation behavior analysis
Assoc. Prof. Dr. Noriko Asanuma	Nuclear fuel reprocessing, Radioactive waste treatment, Chemical separation

2.3. Applied Chemistry

Name	Research Field
Prof. Dr. Yasunobu Akiyama	Chemical engineering, Reaction engineering, CVD processes
Prof. Dr. Takashi Asaka	Chemical engineering, Functional composite materials, Semi-solidified nutrient evaluation
Prof. Dr. Toshiyuki Inazu	Synthetic organic chemistry, Chemical biology, Fluorous chemistry
Prof. Ph.D. Masashi Sato	Gas-Solid Reactions, Energy Related Materials, Metal Hydrides
Prof. Dr. Yu Nagase	Polymer chemistry, Functional polymer materials, Design of polymer structure
Prof. Dr. Masashi Higuchi	Inorganic synthetic chemistry, Functional inorganic materials, Ceramics
Assoc. Prof. Dr. Yosuke Okamura	Polymer chemistry, Biomaterials, Nanomaterial engineering
Assoc. Prof. Dr. Satoko Kezuka	Synthetic organic chemistry, Organometallic chemistry, Asymmetric synthesis

2.4. Applied Biochemistry

Name	Research Field
Prof. Dr. Akiko Kanamori	Cell biology, Bioinorganic chemistry, Detoxification
Prof. Dr. Osamu Kanie	Glycotechnology, Chemical engineering Analytical chemistry
Prof. Dr. Naoya Kojima	Biological chemistry, Cellular biology, Immunology
Prof. Dr. Noboru Sasagawa	Molecular biology, Biochemistry, Biotechnology
Prof. Dr. Munehiro Nakata	Pathological chemistry, Chemical biology, Natural products
Prof. Dr. Misao Matsushita	Innate immunity, Complement, Lectin pathway
Prof. Dr. Ryuta Mizutani	Brain network, Synchrotron radiation, Tomography
Assoc. Prof. Dr. Hidekazu Katayama	Bioorganic chemistry, Peptide chemistry, Crustacean endocrinology
Assoc. Prof. Dr. Yasuhiro Kuroda	Glycotechnology, Biochemistry, Glycobiology
Assoc. Prof. Dr. Yoshitaka Shimizu	Liposome engineering, Lipid biochemistry, Biomaterial chemistry
Assoc. Prof. Dr. Tetsuo Takahashi	Genetic engineering, Molecular biology, Glycobiology
Jr. Assoc. Prof. Dr. Hiroaki Mitsuhashi	Molecular genetics, Muscular dystrophy, Zebrafish
Jr. Assoc. Prof. Dr. S. Aida-Hyugaji	Computational chemistry

3. Course of Architecture and Civil Engineering

The Course of Architecture and Civil Engineering provides high-level teaching and research to equip students with the ability to identify and design solutions for issues in architecture and civil engineering while at the same time preparing them for the workforce with theoretical and practical expertise. The modern construction industry is characterized by rapid technical advancement, globalization forces and evolving market demands, so it is important to not just be fully rounded in technical skills, but exhibit social flexibility as a person with a rich human nature.

3.1. Civil Engineering

Name	Research Field
Prof. Dr. Tetsuro Kasai	Concrete technology
Prof. Dr. Yoshitaka Kajita	Urban planning, Transportation planning
Prof. Dr. Motohiro Sugiyama	Geotechnical engineering
Prof. Dr. Shigeyuki Date	Concrete technology
Prof. Dr. Atsushi Mikami	Earthquake Engineering, Structural Engineering
Prof. Dr. Yoshimichi Yamamoto	Coastal & harbor engineering
Assoc. Prof. Dr. Kazumi Terada	Coastal environmental engineering

3.2. Architecture Engineering

Name	Research Field
Prof. Dr. Toshie Iwata	Architectural Environment Engineering, Illuminating Engineering, Indoor Environmental Quality
Prof. Dr. Asae Ozawa	History of Japanese Architecture, History of Life Culture, preservation of historical buildings
Prof. Dr. Hitomi Kato	System of the City Planning, City Planning Law, Community development

3.3. Architecture Engineering (Cont.)

Name	Research Field
Prof. Dr. Itaru Takahashi	Architectural Environment Engineering, Application of Energy and Entropy into Building Physics, Utilization of Resources such as biomass and water circulating
Prof. Dr. Yuji Tsubota	HVAC System Engineering, Thermal Storage System , Architectural Environment Engineering
Prof. Dr. Shigehiro Moro-oka	Structural Mechanics, Seismic Design, Shell Structures
Prof. Dr. Toshihiro Yamazaki	Architectural Planning, Environmental Behavior, Environmental Psychology
Prof. Dr. Kenji Yamamoto	Structural Mechanics, Computational Mechanics, Spatial Structure
Prof. Dr. Hideki Yoshimatsu	Architectural Design, Urban Design, Space Notation
Prof. Dr. Ken Watanabe	Concrete Technology, Reinforced Concrete Structure, Fracture Mechanics
Prof. Dr. Kenji Watanabe	History and Theory of Modern Architecture, Documentation and Conservation of Modern Architecture, Methodology of Design Survey
Assoc. Prof. Dr. Yoshihiko Ito	History of Western Architecture, Medieval Architecture in Iberia, History of Urbanism
Assoc. Prof. Dr. Akito Sogame	Space Architecture, Deployable Structure, Architectural Planning
Assoc. Prof. Dr. Junta Nakano	Architectural Environmental Engineering, HVAC System Engineering, Environmental Psychology
Assoc. Prof. Dr. Takeshi Yokoi	Architectural finishing material, Reasonable construction cost and labor, Childcare house
Prof. Dr. Hirofumi Sugimoto	Wooden Architectural Design, Urban Design, Community Development
Assist. Prof. Dr. Keisuke Nomura	Architectural Design, Urban Design, Architectural Model Design
Assist. Prof. Naoto Noguchi	Architectural Design, Urban Design

4. Course of Mechanical Engineering

The primary aim of the Course of Mechanical Engineering is to produce engineers and researchers with the innovation and adaptability needed to pursue research and development in a wide range of fields. Students will gain a broad sense of the role of engineering through a combination of theoretical study and practical research in fields such as thermal and flud engineering, materials and process engineering, mechanical and control engineering, and aeronautical engineering. Students will also acquire information process analysis (IPA) and experimental measurement skills, furthermore, the ability to communicate information to the world, accompanied by international perspective and rich human nature.

4.1. Aeronautics and Astronautics

Name	Research Field
Prof. Dr. Yoshinobu Inada	Flight dynamics, Unmanned air vehicle (UAV), Biomechanics
Prof. Dr. Hiroaki Kakuta	Space Engineering
Prof. Dr. Yutaka Tonegawa	Earth and Planetary Sciences, Aeronautical Sciences
Prof. Dr. Ichiro Nakagawa	Aerospace chemical propulsion, Hybrid rocket, Space engineering
Prof. Dr. Hideyuki Horisawa	Rocket propulsion, Plasma source, Electric propulsion
Prof. Dr. Toshiharu Mizukaki	High-speed aerodynamics, Shock waves, Applied optics
Prof. Dr. Wataru Miyake	Space plasma physics, Charged particle detector, Space weather
Prof. Ph.D. Kyoichi Nakashino	Finite element analysis, Gossamer space structures, Membrane structures
Assoc. Prof. Dr. Makoto Tanaka	Space Measurement Engineering
Assoc. Prof. Dr. Kota Fukuda	Aerodynamics, CFD, Vortex Dynamics
Assoc. Prof. Dr. Takakazu Morita	Solid rocket, Hybrid rocket, Oscillatory combustion
Jr. Assoc. Prof. Dr. Tomoyuki Ikeda	Electric Propulsion, Hall thruster, Satellite engineering
Jr. Assoc. Prof. Dr. Daiju Numata	Experimental Fluid Dynamics (EFD), Flow measurement technology, Aerodynamics

4.2. Mechanical and Control Engineering

Name	Research Field
Prof. Dr. Hirohiko Ogino	Automotive Engineering, Control Engineering, Vehicle Safety
Prof. Ph.D. Atsushi Okuyama	Control engineering
Prof. Dr. Masayuki Ochiai	Tribology, Machine element, Design engineering
Prof. Dr. Koichi Koganezawa	Robotics, Multibody dynamics, Prosthetic leg and hand
Prof. Dr. Yoshihiro Kai	Robotics, Mechatronics, Control engineering
Prof. Dr. Masakazu Suzuki	Control Engineering, Robotics
Prof. Dr. Tatsuya Morishita	Acoustics, Passive Noise Control, Active Noise Control
Prof. Ph.D. Yoshio Yamamoto	Sensor-based navigation and control of mobile robots and UAV, communication issues of humanoid robots
Assoc. Prof. Dr. Yasuhisa Hattori	Tribology
Assist. Prof. Dr. Hideaki Kato	Mechatronics, Bioinstrumentation, Psychology Engineering
Assist. Prof. Dr. Yuta Sunami	Tribology, Web Handling, Biomimetics
Prof. Dr. Hiromu Hashimoto	Tribology, Web handling, Biomimetics
Prof. Dr. Tatsuo Narabayashi	Vibration engineering, collision problem of elastic body, coefficient of restitution of bar and beam

4.3. Material Engineering

Name	Research Field
Prof. Dr. Satoru Iwamori	Materials science and engineering, Thin film engineering, Chemical sensors
Prof. Dr. Masao Kouzaki	Material surface engineering

4.4. Material Engineering (Cont.)

Name	Research Field
Prof. Ph.D. Kazuyoshi Tsuchiya	Bio-MEMS, micro sensor, micro actuator, thin film process, smart material
Prof. Dr. Kazunari Yoshida	Metal forming, wire drawing, new material
Assoc. Prof. Dr. Masashi Yoshinaga	Solid State Ionics, Solid Oxide Fuel Cells, Lithium Iion Batteries
Prof. Dr. Masafumi Chiba	Inorganic materials, surface science, Solid State Physics
Assoc. Prof. Dr. Takahiro Ohta	Metal Forming, Shot Peening, Joining
Assist. Prof. Dr. Takahiro Uchida Helmut	Material science, Vacuum engineering, Surface analysis, Stress analysis

4.5. Thermal and Hydraulic Engineering

Name	Research Field
Prof. Dr. Akihiko Azetsu	Internal combustion engine, Laser diagnostics, Combustion engineering
Prof. Dr. Hiroo Okanaga	Fluid dynamics, Hydraulic engineering, Sports fluid engineering
Prof. Dr. Toshiyuki Sakamoto	Management Science, Energy Transfer Engineering, Automotive Engineering
Prof. Dr. Yoko Takakura	Fluid Mechanics, CFD, High-order Shock-capturing Methods
Prof. Dr. Zhili Chen	Gasoline Engine, Diesel Engine, Fuel Cell
Assoc. Prof. Dr. Hiroshi Kimura	μTAS, BioMEMS, Cell/Tissue Engineering
Assoc. Prof. Dr. Shinya Hasegawa	Nonequilibrium Thermodynamics, Thermoacoustic Phenomena, Energy Conversion
Assoc. Prof. Dr. Shun Takahashi	CFD, Computational Science, Multiphase Flow
Assoc. Prof. Dr. Gouji Yamada	Hypersonic flow, Aerodynamics, Plasma diagnostics
Jr. Assoc. Prof. Dr. Naoya Fukushima	Thermal and Fluids Engineering, Turbulence and Combustion, Optimal Control and Design

5. Course of Biomedical Engineering

Biomedical engineering is a relatively new field that combines the academic disciplines of medicine and engineering. Biomedical engineering is further subdivided into two areas: medical engineering, where engineering principles such as logic, technology, machinery and systems are applied to medical science to promote life science research and developments in medical technology, and bioengineering, which seeks to map the complex and intricate mechanisms and functions of living organisms onto industrial products and systems.The modern health care sector is characterized by rapid advancements in technology, particularly with respect to engineering, but at the same time is faced with a myriad of challenges such as shrinking budgets, declining birthrates, the aging population, the pressures of globalization, and new questions around bioethics. Meanwhile, the sector is also moving towards a stronger focus on supporting individual responsibility for personal health, such as prevention strategies, hygiene, and welfare. Biomedical engineering is considered a potential solution to many of these challenges.The Course of Biomedical Engineering provides a comprehensive overview of the field of biomedical engineering and advanced research into associated applications, educating professionals and researchers equipped with highly specialized skills. In addition to expertise and technique, students will acquire a broad-based perspective and comprehensive decision-making skills required to assume leadership roles in the health care sector.

Name	Research Field
Prof. Dr. Akira Mochizuki	Biomaterial, Biocompatibility, Surface Chemistry
Prof. Dr. Yoshiyuki Kageyama	Biometry , Welfare engineering, Simulation engineering
Prof. Dr. Tetsuro Horikoshi	Neurobiology, neuron, sensory system, behavior
Prof. Dr. Taro Takahara	Magnetic resonance imaging systems, Clinical engineering
Prof. Dr. Hisao Kikugawa	Biomechanics, Mechanical engineering, Strength of materials
Prof. Dr. Kiyoyuki Yamazaki	Biomedical engineering, Human factors engineering
Assoc. Prof. Dr. Norihito Etoh	Biometric, Biomedical Engineering, Epidemiology
Prof. Hiroshi Ohshima	Extra-Corporeal circulation, Clinical engineering, Medical safety control
Jr. Assoc. Prof. Dr. Tomohiko Utsuki	Physiological-state control, Biological modeling, Medical information system