



2023 version

Become a Super-Engineer CREATE THE FUTURE.

Degree Program in Engineering Mechanics and Energy

Our faculty members are world leading researchers in a wide range of fields including aerospace, mechanical engineering, civil and architectural engineering, and energy. Our unique environment and cutting-edge facilities support extensive research and multidisciplinary education for our students.

Broaden your horizons and strengthen your capabilities with our multidisciplinary education.

Education Objective "Setting the goal to address one's purpose"
Our Master program allows students to acquire a broad knowledge of engineering and to understand problems in related fields, to be able to the heart of a problem and purpose a solution, and then communicate the solution effectively. Completing our Doctoral program enables students to accomplish these aims at a higher level, and to be able to manage research projects and take a position of leadership in society.

Our aim is to break down the conventional walls between engineering fields and teach the whole range of mechanics-based engineering technologies in a multidisciplinary fashion. Our special characteristic is the diversity of interests collected in one place and the intellectual stimulus that this offers. Your studies will not be limited by the traditional boundaries between subjects. Our environment encourages diverse ambitions and objectives. You may find classmates with interest in...

- Designing spacecraft
- Flying airplanes
- Resolving water shortage of energy
- Improving future quality in rivers and lakes
- Designing earthquake-resistant buildings
- Contributing to space exploration
- Developing systems to protect against tsunamis

General Information for International Students

You can choose Research Student, or you can take the entrance examination directly and become a regular student in our Program.

- International Student Admission Guide for Non-Degree Research Student
<https://www.tsukuba.ac.jp/en/academics/international-research-students/>
 - Graduate Admission Guide for Regular Student
<https://eng.ap-graduate.tsukuba.ac.jp/>
- See "Graduate School of Science and Technology" and "Degree Programs in Systems and Information Engineering".



Admissions Information

The latest admissions information is available on website.

- Graduate Admission Guide for Degree Programs in Systems and Information Engineering
<https://eng.ap-graduate.tsukuba.ac.jp/course/sie/>

We generally conduct:

- Special Selection Process for Recommended Applicants (July Selection)
- General Selection Process / Special Selection Process for Working Individuals (August Selection, and January to February Selection)

Our program has been selected as one of the Japanese Government (MEXT) Scholarships by university recommendations named "International Resilience Engineering Program powered by Industry-Academia Collaborated PBL".

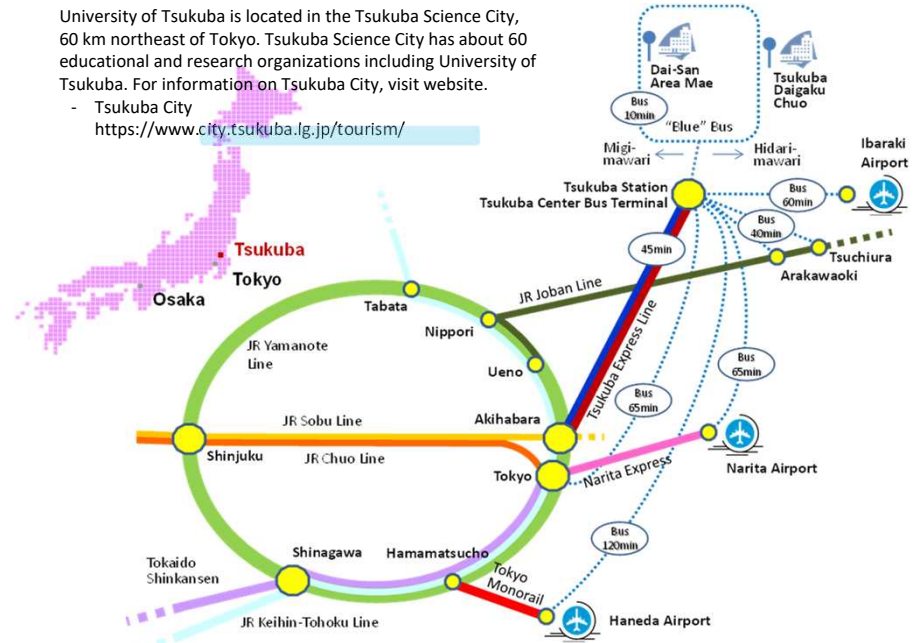
- Application Guidelines
<https://www.sie.tsukuba.ac.jp/eng/visitor/exam/inter-student/>



Location and Access

University of Tsukuba is located in the Tsukuba Science City, 60 km northeast of Tokyo. Tsukuba Science City has about 60 educational and research organizations including University of Tsukuba. For information on Tsukuba City, visit website.

- Tsukuba City
<https://www.city.tsukuba.lg.jp/tourism/>



Contact Information

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<https://www.eme.tsukuba.ac.jp/>



Space Exploration Engineering

(Group leader: Prof. Makihito Nishioka)

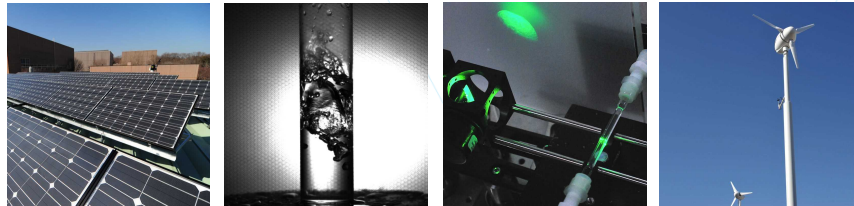
Our research group studies the engineering theory and technology necessary for expanding the frontiers of space. Utilizing theories of combustion mechanism, improvement in performance of new materials, use of plasma, and physical phenomena at extremely low temperatures, we conduct applied research in advanced engineering technologies such as the development of next-generation aircraft and rocket engines, small-scale satellites, atmospheric re-entry craft, thermal control devices, planetary exploration rovers, experiments on board the ISS, and so on. This work is done with the collaboration of neighboring research institutes, such as JAXA and AIST. Our wide-ranging interests are always energetically seeking new interdisciplinary research fields such as preserving the Earth's environment, medical technology in space, and space art.



Primary energy sources including fossil fuels such as coal, petroleum and natural gas, as well as nuclear power and natural energy are used to operate the electrical devices, automobiles and suchlike that we depend on, and the form of the energy is changed until it eventually becomes heat. The energy-conversion technology which transforms one sort of energy into another is vitally important for effectively utilizing limited energy resources to establish a sustainable society. Our research group studies and develops environment-friendly energy-conversion technologies and networks.

Energy and Environmentology

(Group leader: Prof. Hideaki Monji)



Message from the Program Leader

DREAMS AWAIT YOUR CHALLENGE.

To potential students in Engineering Mechanics and Energy

Prof. Hideaki Monji, Program Leader of Engineering Mechanics and Energy

Our Degree Program provides interdisciplinary education and research covering a wide range of engineering and scientific fields. Our program of study helps students acquire a comprehensive picture of our highly specialized society from scientific and technological perspectives, and helps them find optimal solutions towards a sustainable world. Moreover, our faculty members offer state-of-the-art research topics such as ones shown in this brochure, and students can develop in-depth expertise through their research project. Please visit our website for more details, and contact our faculty members related to your areas of interest if you are considering joining us. We look forward to seeing you on our lush green campus located in the midst of Tsukuba Science City.

Disaster Control

(Group leader: Prof. Daigoro Isoke)

The threats of earthquakes, tsunamis, fires, heavy rain and suchlike pose grave dangers to our lives and cause great damage. In addition to these sudden occurrences, serious damage may also be caused by the deterioration of materials, and long-term environmental disturbances. This group conducts research to develop advanced engineering technology to control disasters, and disaster-prevention systems, by understanding the effects of these disturbances on the ground, lifelines, buildings and bridges and by studying the causes of damage in detail.

Our research group studies durability evaluation technology and advanced simulation technology for structures and materials in mechanical engineering fields. We develop solutions on micro and macro scales using experimental, theoretical and numerical simulation methods. We have research programs on (1) high-temperature durability evaluation technology for polymer-type carbon-fiber reinforcement materials and homogenization analysis for thermal problems; (2) the destruction mechanism for bonded joints at leading edges and non-destructive evaluation methods using electromagnetism ; (3) durability measurement and analysis methods for steel and elastomer materials in high-temperature power plants.

Multi-Scale Solid Materials Engineering

(Group leader: Assoc. Prof. Akihiro Matsuda)

