

Welcome Message to New Students

Congratulations and welcome to the University of Tsukuba community! We also extend our sincere congratulations to your parents, families, and friends.

A university is a place that respects academic freedom, creates knowledge based on searching for the truth, and at the same time fosters the development of the people who will inherit this legacy. Rather than just a place for studying, a university is a place for engaging in research. While studying is about acquiring knowledge and skills along with disciplining ourselves to succeed in this endeavor, research is thinking deeply about things, investigating them in detail, and shedding light on facts and the truth by applying various methods. Thus, as the word suggests, research is the act of enhanced searching, and requires various skills in investigation. Studying, of course, is an important part of it.

For those who are entering graduate school, more emphasis is placed on “knowledge creation”. There will be many times you will find that there are no answers to the questions that are being asked. Not only that, there will also be many times when you will have to begin your task by asking lots of questions on your own. Your motivation will depend on your own desire and passion to learn and know, and maintaining that desire and passion throughout. In addition, you must relentlessly pursue the cycle of gathering knowledge and information, constructing logical, rational hypotheses, conducting onsite investigations and experiments, and verifying and critiquing the results as necessary. You get to hone your academic skills to focus on the areas of learning you intend to pursue based on the experience you have gained up until now - and to establish your position in society to enable you to achieve at a high level the vision of the future which you form in the course of your learning. With that in mind, you must study as much as you can about the world today, think deeply about its future and, in that context, recognize the importance of your activities at this university and determine the purpose of your own efforts and education.

We live in a turbulent global society. While we maintain the same concept of boundaries between countries, regions, and individual communities that has been there at the time of their establishment, in our world today we inevitably have to engage in activities that span those boundaries. Currently, the new coronavirus pandemic is spreading at remarkable speed. Its transmission rate is hundreds of times faster than when Columbus brought with him new infectious diseases from Europe into the New World. This virus has had an immediate impact on share prices throughout the world, and the global economy is in decline. Rumors spreading via social network sites are also causing people to panic.

In today's society where digital transformation is advancing fast, it has become extremely easy to exchange information anywhere in the world, no matter how remote the location is or how far apart people are. Behind these rapid advances in digital science, goods and systems that once featured prominently in daily life are beginning to disappear, such as the early flip phone. The same thing is likely to happen to people's occupations. In Japan, the new society marked by digital transformation is referred to as Society 5.0. Indeed, we have come a long way since Society 1.0, the hunter-gatherer stage when people's survival was at the mercy of nature and chance, while Society 2.0 was agrarian. Society 3.0 was driven by the industrial revolution, made possible by an energy revolution, while Society 4.0 is an information-based society. Society 5.0 is a society where we will pursue a wide range of activities and work to find solutions to social issues through the close integration of cyber space and physical space. During your studies here at university, you will prepare yourself to work and live in such a society in search of happiness for mankind and the earth.

Therefore, you should be able to prepare yourselves for that task. In a globalized society, research in order to solve problems is taking place in an open environment. In addition to collaboration in academic fields, collaboration across organizations and countries is necessary. The most noteworthy strengths in education and research at our university are its "interdisciplinarity" and "internationalism," which form the very foundation for building the essential capabilities in human resources required by society today.

Today, various buzz words such as "the age of innovation" are being bandied about in our society. I feel that in the majority of cases this expression is used to mean the creation of new technology. Originally, the word "innovation" meant creating new value from new ideas and linking these to social change. In an era where digital transformation will progress far beyond our expectations, I would like you to be strongly aware that the most vital human resources in the future will be people with the ability to identify and execute the work that truly needs to be done. To implement new science and technology in society, or to make novel recommendations for people and society, people who specialize in the natural sciences must have a sound understanding of history, geography and culture, and they must engage in logical reasoning based on critical thinking. On the other hand, those who specialize in the humanities and social science must be thoroughly familiar with advances in new sciences and technologies. People involved in social innovation that leads to social change must sharpen their skills and knowledge on a daily basis to broaden their perspectives.

All of you will acquire the capability to do this. This is because one of the attributes of our university is its advanced "interdisciplinarity." The University of Tsukuba is not only a research

university that offers a wide array of academic disciplines unmatched by any university in Japan but also a truly comprehensive university in which diverse fields collaborate. We define interdisciplinarity not simply as collaboration across different academic fields, but as collaboration across different fields *to create new fields of study*, and in that context we pursue education and research. During your study here, the university pledges to be your partner in your quest to acquire a high level of expertise through classes backed by leading-edge research and through training in laboratories or seminars. Moreover, in addition to knowledge in specialized fields, you also will also come into contact with knowledge across a broad range of fields in addition to your own field of study. You will also have firsthand experience in what it is like to collaborate in various academic fields and to pioneer new fields. This experience should put you in good stead for pursuing cross-disciplinary collaboration essential for driving social innovation.

Another notable attribute of our university is its "internationalism." The University of Tsukuba is recognized as one of the most international universities in Japan as it has a very high ratio of international students with 2,679 foreign students from 120 countries and regions as of December 2019. In addition, due to the university's location at Tsukuba Science City, you are bound to encounter many foreign researchers. During your time here, you will acquire a new "earth view" that will enable you to understand the ways of thinking and life of people coming from various places on earth, to share information and ideas with them, and to cooperate with them. In this way, you will get to acquire true "internationalism."

The fundamental spirit relating to this "internationalism" of our university dates back to the origin of the university itself, and has been refined over the course of its history. The university's roots go back to the Normal School which was the first institution of higher education in Japan established by the Meiji government in 1872. This Normal School underwent a number of transformations over time, becoming the Tokyo Higher Normal School and later the Tokyo University of Education, until in 1973 it opened its doors as the University of Tsukuba.

The university's view of internationalism is symbolized by the work of Kano Jigoro, who served as principal of the Tokyo Higher Normal School for 23 years. Mr. Kano is renowned as the founder of modern judo and was the first person in Asia to serve as a member of the International Olympic Committee. In Japan he promoted the importance of the Olympic Games, and although his plan never came to fruition during his lifetime, he was the first person to invite the Olympics to Japan. That spirit has been passed down to us today, and Japan is proud to host the Summer Olympic and Paralympic Games for the second time (although they have been postponed for now due to the COVID-19 pandemic).

More importantly, Mr. Kano was an outstanding educator and he left behind a rich legacy during his tenure including the acceptance of a large number of international students said to be in the thousands. This legacy will be your inheritance. Internationalization has evolved from an era of rivalry to a new phase of friendly competition and collaboration. In the prevailing inward-looking, isolationist atmosphere of Europe and the United States, which had previously been at the forefront of globalization, populism is gaining ground. Mutually respecting and acknowledging others with an understanding of our differences will lead to enduring ties that cultivate strong friendships and produce outstanding collaborative work. Healthy competition and collaboration are capabilities for building the future. All of you who study at this university will get to acquire these capabilities.

Earlier, I mentioned that a university is a place for creating knowledge and this is achieved through various types of research - such as fundamental research for exploring the truth, applied research based on fundamental research, and developmental research that requires application in society. However, it is important to note that your research at university will be based on new discoveries that you make and inventions that you create. In basic research, you will attempt to generalize and formulate into principles new discoveries of your own. Applied research, on the other hand, is the process of creating new solutions based on your new discoveries and principles, and if your solution is successful, it will simultaneously confirm the validity of your discovery. In developmental research, you will undertake research to respond to certain requirements with an understanding of needs, and you may encounter a number of practical difficulties. To overcome those difficulties, you may need to go back to the basic and applied sciences.

In your pursuits, please keep in mind that efforts to advance science and technology must be fair and equitable, and they must be supported by evidence and proof.

The famous trial of Galileo is often described in the context of a conflict between science and religion. In a similar manner, the sun-centered theory advocated by Copernicus in the 15th century, which was diametrically opposed to the earth-centered theory of Ptolemy, was believed to be at odds with Christianity because it denied the almightiness of God and the Pope's authority as head of the church. However, much of the recent research on this trial reveals that Galileo's early supporters were Jesuit scholars. So why did Galileo's theory not create a great sensation at the time it was announced despite being widely believed to be correct about half a century later? Could it be because scientific evidence and proof were not enough? Although Galileo, for example, observed the movement of Jupiter's four moons with a telescope and presented evidence that the earth was moving, he failed to answer the question as to why birds flying in the sky were not left behind as the earth rotated. This was left to Newton to explain about a century later.

Newton formulated the law of inertia and discovered the law of universal gravitation bringing to completion Galileo's ground motion theory.

As we pursue science and technology, it is also important for us to think and act from a broad perspective. The aim of the UN agenda as embodied in the SDGs is world peace, and this agenda pledges to "leave no one behind."

Earlier I mentioned that the true meaning of innovation is social change. In that regard, we must also acknowledge that a vast number of people who should be the main beneficiaries of innovation are still being left behind. The word "inclusion" is frequently used today. In the 1980s, the concept of inclusion attracted attention in the context of education for children with disabilities in the United States, and in Japan it has been used to mean inclusive education for children with disabilities in mainstream classes. However, popular use of the word inclusion began in France where the term "social exclusion" was used to describe the socioeconomic disparity encompassing a broad range of people including the unemployed and disabled.

In today's society, achieving inclusion is not easy. Even if innovations in science and technology create new devices they are useless without energy to power them, and many cannot be effectively utilized without a certain level of education. The concept of inclusion, which originated in the field of education, is now being used more widely to include organizational management and social activities. Diversity at present is used in the context of utilizing the resources of a wide range of people, but inclusion means acknowledging the ideas, experience, and abilities of these respective people and making effective use of these accordingly. In the future, we can only assume that inclusion will result in the creation of a richly diverse variety of innovations.

Therefore, to achieve inclusion, we must mobilize knowledge and ingenuity in all fields. In addition to new science and technology, we must carefully consider and innovate social structures such as organizations, systems, markets and finance. In addition, the understanding of those who will take on the challenge of inclusive innovation is also important. Members of a university community must fulfill the mission of a university, which is the creation and passing on of knowledge with a clear vision of the future. This is because the results achieved are directly linked with the creation of new values for society and the sustainability of society.

Last but not least, when you have completed and graduated from your studies, you will be expected to play a role in society as trailblazers of a new era. Therefore, all of you must start thinking deeply about what you are to do at a time when it is no longer possible to envision the

future as a simple extension of the past, and take action accordingly. You must all have a purpose to pursue beyond your own personal happiness. Our faculty members and staff take pride in the uniqueness of our university and our sense of mission, and we sincerely look forward to supporting you on your journey. I wish to encourage you in all your endeavors to acquire broad academic knowledge and sound skills before you finally venture out in the world to become leaders in society who will pave the way to the future for humankind and our planet.

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