

School of Transdisciplinary Science and Design

(University of Tsukuba, Malaysia)

■ Bachelor of Arts and Science

■ Educational purpose ■

The programme aims to develop individuals with data science literacy who can apply ideas and technologies from the natural sciences, humanities and social sciences to a broad range of environmental and social issues. By utilising design thinking, our students can creatively contribute to solving global issues.

■ Desired students ■

Our programme will particularly appeal to students who are:

1. Strongly interested in and motivated to study global issues and their resolutions in Malaysia and South-East Asia
2. Clearly enthusiastic about integrating knowledge from the natural sciences, humanities and social sciences to solve complex global issues
3. Keenly determined in judging information applicability based on objective data and materials, and who can logically communicate their ideas
4. Genuinely interested in Japanese language and culture, and who can respect different values and ways of thinking

Expected career paths

- Pursue a higher degree in a Japanese or Malaysian graduate school in fields such as information science, humanities and social sciences, life sciences, environmental sciences, education, sports science, or science and engineering etc.
- Work in a Japanese company in Malaysia or in a company in Japan
- Work in a government agency, organisation, etc. in Malaysia

Measures to ensure and improve the quality of education

Our School's PDCA committee continuously evaluates education and administrative activities. This committee improves and enhances education and research within the School by:

- ① Conducting self-checks and implementing quality improvement proposals concerning teaching and learning evaluation standards (Office of Management for Teaching and Learning).
- ② Conducting self-checks and implementing quality improvement proposals concerning organisational evaluation standards (Organisational Evaluation Committee).
- ③ Undertaking continuous collection of quantitative and qualitative data on quality assurance.
- ④ Responding to other educational and administrative matters

The quality improvement proposals noted in 1 and 2 follow a PDCA cycle for quality assurance and improvement within the School.

Bachelor of Arts and Science

Diploma policy

A Bachelor of Arts and Science is granted to those who are recognised as having gained the appropriate knowledge and ability (generic competences) set out in the curriculum targets stipulated for the University of Tsukuba's undergraduate degree programmes, as well as who have reached the following achievement targets and abilities in their learning outcomes based on the educational purpose for the School.

Demonstrated understanding and ability to utilise data science techniques and methods.

Demonstrated understanding and ability to integrate knowledge from the natural sciences, humanities and social sciences to solve global issues.

Demonstrated comprehension of environmental studies and its application to solve global issues.

Demonstrated ability to communicate smoothly and respectfully with a diverse range of people.

Demonstrated ability to consider diverse values through understanding of Japanese culture and traditions.

Curriculum policy

Our curriculum is based on the following policies to help students achieve the learning outcomes for their Bachelor of Arts and Science degrees:

Our programme integrates fundamental knowledge in humanities and social sciences, understanding Japanese culture and society, and natural sciences, with the basic academic principles of data science that include core applications of mathematics, programming, and statistics. The information literacy and data science foundation learned in the first year of the programme enables students to apply their knowledge to problem-solving in their upper years. This approach enables students to simultaneously develop a deep understanding of data science while gaining experience in applying data-science techniques to real-world issues.

Our class exercises in problem-based learning subjects offer opportunities for discussions and analyses of current issues and problem-solving proposals, allowing students to obtain clear learning objectives through credit attainment. These exercises provided mainly in the first to third years of our programme allow students to develop their abilities and apply them towards their chosen graduation research topics.

Our programme of required common foundation subjects, including three multidisciplinary subjects, physical education, foreign languages, information literacy, and data sciences, are designed to correspond to our university's other undergraduate programmes.

Our programme also offers subjects related to Malaysian society and language, as stipulated by Malaysian higher education policy.

Firmly based in linking data science approaches, our programme is designed to provide students with knowledge and skills in foundation subjects for their majors by integrating fundamentals of natural sciences, humanities and social sciences, as well as Japanese language and Japanese studies. Students can then apply this knowledge and skill

set to current issues analysis and solution exercises.

Students will present a visualisation of their progress on their learning outcomes in their problem-based learning and graduation research classes at the end of each academic year. Our faculty members evaluate each student's learning outcomes based on the content of such reports and presentations.

Characteristics

Our human resource development objective focuses on equipping students with basic skills in data science, and then providing opportunities for them to apply ideas and technologies from the natural sciences, humanities and social sciences to a wide range of environmental and social issues. This approach allows students to actually experience how engineering can be used to effectively contribute to solving global issues. We have incorporated many problem-based learning approaches in our curriculum which correspond to using evidence-based data science techniques to identify and extract solutions to globalisation-related issues. This emphasis on practical problem-solving develops students' abilities to realise concrete and comprehensive solutions to today's complex real-world issues.

