Application information for the April 2021 Admission
Development of WISE Program (World-leading Innovative & Smart Education) Program
to foster AI(Artificial Intelligence) Professionals for Marine Industries
【Master's Course】(Secondary recruitment)

Development of WISE Program (World-leading Innovative & Smart Education) Program to foster AI(Artificial Intelligence) Professionals for Marine Industries ("the Program") recruits students who will be enrolled in the first year of a master's course at any graduate school of TUMSAT in April 2021.

1. Overview of the Program
In modern society, the marine industry workforce is expected to decrease. Development of WISE Program (World-leading Innovative & Smart Education) Program to foster AI(Artificial Intelligence) Professionals for Marine Industries develops researchers who will lead diverse fields in domestic and international research communities as well as in other countries. As such, we build innovative systems, create diverse values, and re-establish the international presence of Japan in the global marine industry. The Program is established as an educational program for a five-year integrated graduate school course where all activities, including coursework, thesis writing, and evaluation of the written thesis, help students earn a degree in an organic and synergic manner.

We are soliciting proposals from students who understand the Program's vision and would like to participate in the Program.

Diploma policy
1) Characteristics of personnel in the Program
Innovators, advanced professional engineers, and marine policymakers with technical literacy in big data analysis and machine learning capable of evaluating AI performance accurately and leading the social implementation of AI based on expertise and extensive field experience learned at TUMSAT.
2) Skills and qualities to be learned by students
In addition to the diploma policy of each graduate school, the Program's students acquire the following skills and qualities:
・ Knowledge and skills in the data science fields, including big data analysis and machine learning, to perform social implementation of AI
・ Clear understanding of issues in their own areas of expertise that may be resolved with data science (big data and machine learning) and the ability to plan, propose, and implement technologies to solve such issues
・ Ability to develop, verify, and analyze the results of research projects that scientifically evaluate efficacy and validity of application cases of big data and machine learning towards social implementation of AI
・ Competent decision-making and communication skills to disseminate

results of big data analysis and machine learning with the public (for students in the fields of resource assessment and management)
- ・ Accurately interpret results of big data analysis and machine learning in a scientific manner and make full use of the results (for students in the field of marine observation)

2. Degree

Students who complete the Program earn Master of Marine Science or Master of Engineering. They also receive a certificate of degree with a note stating that they have completed the Development of WISE Program (World-leading Innovative & Smart Education) Program to foster AI(Artificial Intelligence) Professionals for Marine Industries.

3. Curriculum and requirements for completion of the Program

In addition to completing the coursework of the Graduate School to which the student belongs, all students who study in the Program must take subjects that are offered by the Program and earn credits as shown below. Students must pass Qualifying Examination ("QE") [1]  and the Program's completion review provided by Quality Assurance Unit（"QAU"）.

Each student will be individually notified of the timing of the QE.

*1　QE is conducted during the latter half of the second year of the master's course.

*2　About the Program completion review

The Program completion review will be conducted by QAU during the third year of the doctoral course.

Program students will be notified of the requirements for completion of the doctoral course.

Master's course

| | Classification | | Subject title | Required credits |
|---|---|---|---|---|
| Required | " WISE Program"Common subjects ※1 | | | |
| | AI (machine learning) | | Artificial Intelligence and Machine Learning (2) | 5 |
| | | | Deep Learning (2) | |
| | | | Exercise in Machine Learning (1) | |
| | Big data | | Data Science (2) | 5 |
| | | | Data Engineering (2) | |
| | | | Exercise in Data Science (1) | |
| | Collaboration with different fields | | Marine AI Workshop I | 1 |
| Elective | "WISE Program" in each major Designated subject ※2 | | " WISE Program" designated subjects in each major | 4 |
| Required | Lecture subjects, practice subjects, experiment subjects and training subjects of specialization | | | 4 |
| | Special seminar of specialization | | | 4 |
| | Research of specialization | | | 8 |
| Total | | | | 31 |

* 1 Each subject will be established as a Graduate School Common Subjects.

* 2 Each subject is designated in each major.

4. Eligibility

Any student who 1) will be enrolled in the first year of a master's course at any graduate school of TUMSAT in April 2021, 2) intends to continue studying at TUMSAT upon completion of the master's course, and 3) has a vision and objective that meets the Program's education and research policy.

However, a part of the capacity (about 5 people) will be accepted even for workers who wish to transfer to the Program.

* To apply, each applicant must obtain approval from his or her supervising instructor including the research details under the Program and the date of the entrance interview screening.

5. Number of students

About 5 people

6.  Application method
    Please submit 1-3 documents within the next deadline.

    [Application deadline] May 10, 2021
       As a general rule, application documents should be submitted by email.

    [Address for the submission] [marine-ai_office@o.kaiyodai.ac.jp](mailto:marine-ai_office@o.kaiyodai.ac.jp)
    1)   Certificate of academic results in the undergraduate course
    2)   Application form of the Program
    3)   Research plan (The dedicated form is attached to this document. The plan must include the motivation for applying to the Program and a statement about the applicant's interests in AI or big data).
    *   No examination fee is required to apply to the Program.
    *   If the applicant studied at any School (undergraduate course) of TUMSAT, a certificate of academic results is not required. Instead, the applicant must include the student number given at the School in the application.
    *   Prior to submitting an application and research plan, the applicant must obtain approval of the main academic advisor.

7.   Selection criteria
    (1) First selection: document screening
        Screening will be conducted based on academic results in the undergraduate course, motivation for the application, and research plan in a comprehensive manner.
        * Please note that the submitted documents may not be changed and will not be returned.
    (2) Second selection: interview screening
        The interview screening includes a presentation regarding the contents of the submitted research plan (5 minutes) and a subsequent question and answer session (total 15 minutes). The sessions evaluate applicants in a comprehensive manner based on their academic abilities, research skills, and understanding about and motivation for the Program.

8. Application and selection schedule
    i) Announcement of the result of the first (document) screening:
        May 13, 2021
    ii) Date of the second (interview) screening:
        May 18, 2021 and May 19, 2021
    * Interviews will be conducted online using Cisco Webex.

9. Announcement of successful students
    Successful students will be announced on the Program website
        ([https://www.g2.kaiyodai.ac.jp/marine-ai/](https://www.g2.kaiyodai.ac.jp/marine-ai/)) on May 26, 2021.

Successful applicants will be also notified individually.

10. Procedures for participating in the Program
The Program's administration personnel will notify successful applicants of the procedures to participate in the Program.
No additional fee is needed for entry or study in the Program.

11. Supports for students
Students who participate in the Program may receive support for travel expenses for overseas training opportunities offered by the Program. Expenses for implementing the Program may also be supported. Please consult with the Academic Affairs Division in charge of the WISE Program for the details of available supports. In addition to the above supports, the Marine AI Consortium, which is an industry-academia-government collaboration, provides different support opportunities, including 1) matching needs and interests between students studying in the Program and private companies, 2) in-residence projects, where students work in actual projects at partner institutes. In-residence projects will be offered to doctoral course students.
Furthermore, to allow students participating in the Program to concentrate on their studies, financial support for education/research expenses will be provided for students selected by the QAU among those who achieve excellent results in the screening contest.

12. Handling of personal information
Personal information that is provided in the application documents, including supporting documents and those provided by the Course to which the applicant belongs, will be used to select successful students who will participate in the Program and to prepare for acceptance, education, and research guidance of successful students.

13. About security export control
TUMSAT thoroughly vets international students when accepting them. The examination is conducted pursuant to the Rules for Security Export Control at the Tokyo University of Marine Science and Technology, which is established according to the Foreign Exchange and Foreign Trade Act of Japan.

14 Document submission destination
Academic Affairs Division in charge of the WISE Program
4-5-7 Konan Minato-ku, Tokyo 108-8477
Phone: 03-5463-0503
Email: marine-ai_office@o.kaiyodai.ac.jp
HP : https://www.g2.kaiyodai.ac.jp/marine-ai/