

OIST Teaching Vision

How, and why, we aim to teach at OIST

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Teaching Vision Statement

Excellence in teaching is one of the core values and functions of the university, alongside research and contribution to society. The **OIST Graduate University PhD program is unique in Japan**, with an initial pre-thesis phase of elective courses and research rotations, followed by thesis research. In the first phase, students complete a mix of elective courses without traditional majors (at least 20 credits for Bachelor's entry students, or at least 10 credits for Master's entry students) as well as a range of laboratory projects (rotations), a pre-thesis research proposal, and mandatory professional development training. Excellence in research supervision in both the early and the later years is another important element of our teaching vision.

A key feature of the OIST educational approach is that we offer a **flexible teaching program** that is tailored to each individual student's unique set of circumstances and needs. OIST accepts students from a wide range of backgrounds, and with a broad range of previous learning. Teaching a program without defined majors allows for a wide choice of elective courses, at both basic and advanced levels, and facilitates students' preparation for interdisciplinary research or for entering new fields of research. We provide ample **opportunity for cross-field learning and for broadening** their outlook, by elective course choices (including out-of-field electives) and through independent study on topics of their own choosing. Students can also receive credit for undertaking external courses, online or off-campus, opening a vast array of specialist course options for individual and group study. We aim to graduate students who are **equipped to lead** in an ever-changing environment, who can synthesize across disciplines, and who can seize an opportunity to create knowledge in new ways.

We recognize that graduate-level learning differs from uniform undergraduate learning in that it is **driven by the needs of each student** rather than by a set of predetermined standardized outcomes. OIST teaching is focussed on providing a suitable preparation for our students to conduct excellent research, and the ultimate arbiter of OIST education success is the successful defense of their thesis. The low student-to-faculty ratio, low teaching burden, and small class sizes allow our **faculty to tailor their teaching to the individual needs of each student**, especially important where there are students of diverse backgrounds in each class. This diversity of teaching opportunities allows each individual student to derive the most from each course.

We aim to teach research by doing research, and students gain experience in a range of research questions and techniques as they undertake at least three laboratory rotations, including one outside their narrower thesis field, in their first year. We provide state-of-the-art facilities for education and research, especially teaching laboratory facilities, and we ensure that students have access to all the university's research resources and equipment. Research training through

laboratory application of theory during the elective courses is encouraged where possible. **Professional development, in skills including writing, coding, ethics, teamwork, project management, and leadership, is mandatory** and recognized by award of credit. Individual faculty mentors advise and support all students in academic and professional skills development.

One of OIST's key missions is to develop industry and applications from our research that benefit Okinawa and Japan, and accordingly we offer strong support for the development of an **entrepreneurial ethos and spirit** in our graduates. This is provided by training opportunities within the Professional and Career Development program, and from other sources both at OIST and within Japan. **Industry placements, business networking opportunities, and internships in Japanese companies** help to foster our students' contribution to this goal. Teaching and supervision by faculty should accommodate such internships as beneficial to the student and to the mission of the university.

OIST espouses a vision of **flexibility, quality, and inclusion** in our teaching and in our students' research, providing them with the necessary training and every opportunity to become global leaders in research, industry, and beyond.

Statement ends here

Appendix: Supporting Statements in Existing and Founding Policy

(Relevant phrases and sections highlighted)

OIST Vision, Values and Mission (on www.oist.jp/about)

Our Mission: We are a pioneering graduate university. We conduct research that bridges disciplines to explore new frontiers of scientific knowledge. **We educate a new generation of scientific leaders.** We are a catalyst for an innovation hub in Okinawa.

PRP 5.1.2 Curriculum Policy

In keeping with the concept of "Globally Recognized", we will recruit outstanding students and conduct top class academic instruction. The academic program will aim to develop the full potential of each student toward scientific excellence and independence. **In accordance with this aim, every student will be treated as a unique individual and have their program of studies tailored to their scientific aspirations, prior education, and current interests.** The basic principles of the curriculum design are to facilitate independent scientific thinking, and to learn by doing research. There will be a single program without barriers between disciplines.

The students will be accepted directly into an integrated doctoral program leading to a postdoctoral career path in leading research institutes and universities. The doctoral program will have a standard enrollment period of five years, and will follow a course-based study system. A three-term per year system will be used. The first two years will comprise a combination of laboratory rotations and courses, designed to prepare the students for their doctoral thesis work in a flexible way. In the second year the students will choose a laboratory in which to undertake thesis research and will submit a Thesis Proposal. An examination for progression to thesis research is held during the second year, based on the written Thesis Proposal and an Oral Examination that includes a defense of the proposal and examination of fundamental knowledge in the field of the research. In order to ensure the highest international standards, an external examiner who is expert in the field of the thesis study is a member of the examining panel. After determination of readiness for thesis work the students will enter into a three-year period of thesis research, which will conclude with examination of the thesis and an oral defense.

Strategic Plan 2020-2030 3.2.2 A Challenging Research-Based Education Program

PhD education is one of the three cornerstones of the OIST mission: We do research that bridges disciplines to explore new frontiers of scientific knowledge. We educate a new generation of scientific leaders. We are a catalyst for an Innovation Hub in Okinawa. We will continue to provide a challenging research-based education program with opportunities to work across disciplinary boundaries so that students develop their own pathways to knowledge and discovery in science and technology. It is increasingly important to develop scientists who can take advantage of the new frontiers of modern science by virtue of their adaptability, creativity and confidence in their ability to thrive in new disciplines and new techniques as they arise.

... supervision and mentoring from our faculty who have an established gateway to an international research network and incredible intellectual freedom to allow them to develop as creative, adaptable and independent researchers. The Graduate School manages the delivery of academic courses to students in the PhD and research intern programs. All faculty offer at least one elective course per year and can teach what they are most interested in. The courses available at OIST provide an excellent preparation for our PhD students to succeed in their research. We have no traditional academic departments and thus no majors with defined structures that block opportunities for students to combine subjects across disciplinary boundaries. Students can choose the combination of courses that

most benefits them and are encouraged to take courses that complement their main research interests to broaden their education, enhancing the possibilities for students to work on new research ideas that cover more than one discipline. Students can also receive credit for undertaking external courses, online or off-campus, opening a vast array of specialist course options we are currently unable to provide. To increase research options and to broaden their general knowledge about science, all PhD students rotate through different research labs in the first year, rather than being specifically recruited to a single faculty unit from the beginning.

If courses are not available from the range of elective courses offered at OIST, we provide options: We allow some credit to be awarded for external courses (online or in-person at another university, summer schools or workshops). We offer direct, individualized, one-on-one teaching sessions as independent study in which students work on a topic of their own choice with appropriate faculty. We offer additional not-for-credit teaching in a range of necessary areas, such as the Skill Pills Program. We provide a venue for OIST visitors to deliver short, one-off courses for credit under the Special Topics course.