

**Osaka University, Graduate School of Engineering
offers the following Master's Degree and Doctoral Degree
programs which are conducted in English
[Enrollment in October 2024]**

**For Japanese Government (Ministry of Education, Culture, Sports, Science and
Technology: MEXT) Scholarship Students**

The Osaka University Graduate School of Engineering (GSE) offers the following special programs which are conducted in English.

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Biotechnology Global Human Resource Development Program for Industry-University Co-Creation

1. Program Summary

The aim of this program is to expose young scientists to state-of-the-art research techniques and in-depth knowledge of advanced biology, chemistry, physics and bioengineering, so that they may harness the potential of biotechnology applicable to Japanese industries as well as academia.

2. Important Program Features

- (1) English will be used for all the lectures, instructions, and research-related activities. In the Basic Courses, students will acquire a solid background in advanced biotechnology. In the Project-based Training Course students will acquire the ability to design and execute research in a critical manner.
- (2) The Basic Courses, which will be held in the first semester of the master's program, will deal with a wide range of subjects: advanced biotechnology, and basics and applications in the fields of "Biotechnology," "Life Science," and "Biochemistry."
- (3) In the first semester of the master's program, students will take the Project-based Training Course. This course is designed to prepare students as research engineers with the ability to conceive innovative ideas, by synthesizing knowledge from different disciplines, and the techniques for devising research plans towards realizing these ideas. In this course, each student will choose one laboratory different from their own and will produce a short-term research work under the supervision of the professor of that laboratory.
- (4) All students will conduct their Special Research in the second, third, and fourth semesters of the master's program, under the supervision and instruction of his/her professor.

For Special Research in the master's program, each student will choose one laboratory among Bioenvironmental Science (Watanabe Lab.), Bioprocess Systems Engineering (Kino-oka Lab.), Functional Microbe Technology (Aoki Lab.), Biochemical Engineering (Omasa Lab.), Macromolecular Biotechnology (Uchiyama Lab.), Applied Microbiology (Fujiyama Lab.), Molecular Microbiology (Honda Lab.) and Protein Crystallography (Kurusu Lab.), and Global Food and Agricultural Technology (Sastia Putri Lab.).

- (5) Improving Japanese skill is also required during the course. Taking N4 and N3 levels in the Japanese Language Proficiency Test is encouraged for obtaining the master's and doctoral degrees, respectively.

3. Requirements for the Completion of the Course and Obtaining the Degree

(1) Master's Program

- ① Requirements for completion of the program: Completion of two compulsory courses, the Project-based Training Course and Safety Education Course for a total of no less than 30 credits under research guidance given by academic supervisor, and enrolling in school for the period required for completion; completion of **Special Research**; acceptance of the master's thesis by the

- faculty; and passing of the final examination of the course.
- ② Degree: Master of Engineering

(2) **Doctoral Program**

- ① Requirements for completion of the course: completion of two compulsory credits under research guidance given by academic supervisor, and enrolling in school for the period required for completion; completion of Special Research; successful defense of the doctoral dissertation and passing of the final examination of the program.
- ② Degree: Doctor of Philosophy in Engineering

4. Admission Quota

Master's Program 4

Doctor's Program 4

5. Program HP

http://www.bio.eng.osaka-u.ac.jp/gh_resour_prog/index.html

Chemical Science Course

1. Program Summary

Materials Innovation Program by Quantum Design and Experimental Verification (MIPQDEV) offers two cross-correlating postgraduate courses, Chemical Science Course (CSC), and Quantum Engineering Design Course (QEDC). This program provides collaborative education by CSC and QEDC through the linkages established by Quantum Engineering Design Research Initiative.

Chemical Science Course (CSC) provides the post-graduate course covering all aspects of “Chemistry”, the center of science. “Chemistry” provides a broad spectrum of information and provides the indispensable basis that underlines our materials society, and keys for the future of society.

2. Important Program Features

- (1) English will be used in all lectures, instructions, and research related activities.
- (2) In the first and second semesters, students will acquire and establish a fundamental knowledge for applied chemistry through 24 intensive courses given by more than 50 professors in the fields of Physical Chemistry, Synthetic Chemistry, and Biological Chemistry. From the second year, the program is geared towards developing within each student the ability to do creative scientific research. Accordingly, the single most important facet of the curriculum for any individual is their own research project.
- (3) Also in the initial semester, students choose a research director, with the guidance of the faculty members and the advisory board of the course, and will select their thesis advisor after completion of a few week rotations. Thereafter, students will become involved in library research on their projects and will soon begin actual experimental or theoretical work. The supervisor will be assigned among all the professors in the Department of Applied Chemistry. (Check the web page of the department: <https://www.applchem.eng.osaka-u.ac.jp/en/>).
- (4) In keeping with the goal of fostering an atmosphere of scholarly, independent study, formal course requirements are minimal and vary among disciplines; advisors can tailor the course requirements to best prepare each student for their chosen field of research. For example, a student who chooses to specialize in physical chemistry is normally expected to take four ~ six courses during the first semester chosen from such topics such as Statistical Mechanics, Polymer Physics, Interactions of Radiation with Matter, Electrochemistry, and many more; whereas organic chemistry student will choose from the fields of Synthetic Chemistry, Physical Organic Chemistry, Homogeneous Catalysis (transition-metal catalysts as well as organic catalysts), Heterogeneous Catalysis, and so on. Students are expected to learn the basic principles of synthetic transformation, organic reaction mechanisms, and physical organic chemistry including molecular orbital theory through such courses.

3. Requirements for the Completion of the Course and Obtaining the Degree

(1) Master's Program

- ① Requirements for completion of the program: Completion of elective courses in the present program for a total of no less than 30 units of credit under research

guidance given by the academic supervisor, and enrolling in school for the period required for completion; completion of Special Research; acceptance of the master's thesis by the faculty; and successful passing of the final examination of the course.

- ② Degree: Master of Engineering

(2) **Doctoral Program**

- ① Requirements for completion of the program: completion of one compulsory course of Research Proposal Contest and elective Frontier Chemistry, Adv.1 and 2 for a total of no less than four units of credit under research guidance given by the academic supervisor, and enrolling in school for the period required for completion; satisfactory performance in the mid-term review of the Special Research; successful defense of the doctoral dissertation; and successful passing of the final examination of the program.
- ② Degree: Doctor of Philosophy in Engineering

4. Admission Quota

Master's Program 2

Doctor's Program a few

5. Program HP

http://www.chem.eng.osaka-u.ac.jp/appl/eng/CSC_e/index_e.html

International Priority Graduate Program on “Applied and Engineering Physics”

1. Program Summary

The objective of this program is to equip new generation of young scientists with fundamental knowledge and cutting-edge research skills in Applied and Engineering Physics. By elucidating the fundamental physical, chemical and biological properties of materials, and designing materials with novel functions, we open a new way to the development of nanotechnology, photon technology, and biomedical engineering. We also aim to develop and produce international collaboration through the creation of an intellectual human resources network. Furthermore, by utilizing interdisciplinary organizations and international networks, we contribute to other socially important fields such as new industries, environment, and energy problems.

2. Important Program Features

(1) We aim to develop human resources capable of advancing science and technology in the field of Applied and Engineering Physics. Students will use fundamental principles of physics to elucidate and control material properties on the electronic and atomic level, and use the acquired knowledge to develop cutting edge technologies that can be applied in both leading and emerging engineering fields.

By attending lectures, participating in workshops, and conducting research, students will be able to

- Develop advanced expertise in Applied and Engineering Physics
- Gain fundamental understanding of materials and develop their applications in various fields of science and technology
- Establish international network in the field of Applied and Engineering Physics

(2) The students will receive world-class instructions regarding the method in developing nano-materials design, the method only Osaka University has. Specialized, international, and advanced educational subjects are provided in each research field.

Details and more information may be found in the Program Website

3. Requirements for the Completion of the Course and Obtaining the Degree

(1) Master's Program

① Requirements: Completion of lectures and seminars corresponding to no less than 30 credits under research guidance given by the academic supervisor, and enrolling in school for the period required for completion; completion of Special Research; submission and defense of the master's thesis; and passing the final examination of the course.

② Degree: Master of Engineering

(2) Doctoral Program

① Requirements:

- earn no less than six total academic credits
- completion of the Special Research
- defense the doctoral dissertation and passing the final examination of the course

② Degree: Doctor of Philosophy in Engineering

4. Admission Quota

Master's Program 2

Doctor's Program a few

5. Important Notice

Even if you are not selected as a MEXT scholarship student, you may be eligible for tuition waiver as a privately financed student if you are recognized as an outstanding student.

Students who wish to apply for this tuition waiver must apply for the MEXT Scholarship Program and in addition, separately apply the entrance examination as a privately financed student in the “Applied and Engineering Physics” program.

Contact the prospective supervisor for more details preferably by the end of September 2023.

6. Program Website

http://www.pstap.eng.osaka-u.ac.jp/index_e.html

6. Application Requirements

- (1) Nationality: The applicant must have the nationality of countries that have diplomatic relations with Japan.
- (2) Age: The applicant must be born no earlier than April 2, 1989.
- (3) Educational background: The applicant must have graduated from a Japanese university or be recognized as possessing academic abilities equivalent to those of university graduates by his/her arrival in Japan. Applicants recognized as possessing academic abilities equivalent to those of university graduates must fulfill one of the following qualifications:
 - 1 Master's Program:
 - ① The applicant must have a bachelor's degree or an equivalent degree granted upon completion of an academic program of either a foreign university or a foreign educational institution whose term of study is at least 3 years or more, by September 30, 2024.
 - ② The applicant is no younger than 22 years of age as of September 30, 2024.
 - ③ The applicant must have 16 years of formal school education curriculum upon completion in a foreign educational institution.
 - 2 Doctoral Program:
 - ① The applicant must have a master's degree or a professional degree by September 30, 2024
 - ② The applicant is no younger than 24 years of age as of September 30, 2024.
- (4) Language ability: The applicant must have a good command of English. Those whose formal education has been conducted in a language other than English must submit a certificate of English proficiency. Acceptable certificates include official test scores of the TOEFL, TOEIC, IELTS, TEAP, GTEC or CPE exams.
- (5) Health: Applicants must be physically and mentally healthy enough to pursue study at the university.
- (6) Attendance: The recipient of the MEXT scholarship must be able to travel to and arrive in Japan in early October 2024.

[Notes]

- (1) Active members of the military and civilians employed by the military will be refused.
- (2) Admission will be revoked if the applicant is not able to arrive in Japan by the designated date.
- (3) Recipients of any other scholarships will not be considered for this scholarship.

- (4) Admission will be revoked for applicants who are found to fail to meet the educational qualifications as specified in the application requirements by September 30, 2024.
- (5) The applicant who is already enrolled in a Japanese university with a residence status of “Student” or the applicant who is enrolled or plans to enroll in a Japanese university as a privately-financed international student between the time of the scholarship application and the start of the scholarship program is eligible as well. However, those who are enrolled or will be enrolled in a Japanese university as a privately-financed international student must return to their native country once and obtain a NEW "Student" visa before the scholarship payment start.
- (6) The applicant plans to engage in fieldwork or an internship in countries other than Japan after submitting the scholarship application is not eligible.

7. Application Procedures

Every applicant must find, well in advance, a supervisor suitable for the research field in which the applicant is interested, and contact him/her by email to confirm whether the field is adequately fitting to his/her laboratory.

(1) Period of Application:

The application forms and other materials must be submitted to the Student Support Affairs Section, Student Affairs Division, Graduate School of Engineering, Osaka University by postal mail or by hand (not by email), to arrive by the following deadline:

Application Period:

November 14, 2023 to November 30, 2023,

***Strict observance(Admit no exceptions)**

(2) Address for Submissions:

Student Support Affairs Section, Student Affairs Division

Graduate School of Engineering, Osaka University

2-1 Yamadaoka, Suita, Osaka 565-0871, JAPAN

Telephone: +81-6-6879-7223

(3) Application Materials:

*All document are to be printed on A4 size paper whenever possible.

* **Submit original documents or certified true copies** (with the exception of 7).

* Application documents should be typed or handwritten in BLOCK letters in English. For documents in a language other than English, an English translation must be attached.

* Once application documents have been received, they will not be returned.

Materials	Details
1 Application Form	<ul style="list-style-type: none"> • Fill out the prescribed “Application for Admission” form. • A photograph (4cm×3cm) should be affixed to the

	first page. It should be taken within the last 3 months and should show the upper part of the body, without a hat, facing the camera.
2 Statement of Purpose	<ul style="list-style-type: none"> • A Statement of Purpose of the applicant (no more than three typed pages), stating their research proposal.
3 Certificate of (Expected) Graduation / Completion	<ul style="list-style-type: none"> • A certificate or certified true copy of the certificate from the last school the applicant attended. <p>Notes:</p> <p>(1) Applicants who (are expected to) have a master's degree should submit certificates of (expected) graduation/completion for both bachelor's and master's degrees.</p> <p>(2) Applicants whose last schools issued graduation (completion) certificates and degree certificates should submit both.</p>
4 Certified Academic Records	<ul style="list-style-type: none"> • Certified Academic Records from the last school the applicant attended. <p>Notes:</p> <p>(1) Applicants who (are expected to) have master's degrees should submit Academic Records for both their bachelor's and master's degrees, certified by the universities the applicants attended.</p> <p>(2) If there is no rating attached to the official transcript, please attach one as a separate document.</p> <p>e.g.:</p> <p>① A+=90% and above, A=80% and above, B=70% and above, C=60% and above, D=50% and above, F=fail</p> <p>② 100-90 = Excellent, 89-80=Very Good, 79-70 = Good, 69-60=Satisfactory, 59- =Fail</p>
5 Certificate of English Proficiency	<ul style="list-style-type: none"> • TOEFL, TOEIC, IELTS, TEAP, GTEC or CPE official test scores - Applicants who have completed an undergraduate or graduate degree program where the language of instruction and examinations were in English, an official statement from the school will be required, confirming the use of English as the language of instruction and examinations.
6 Letter of Recommendation	<ul style="list-style-type: none"> • No less than two letters of recommendation from different people. The letters should be addressed to “the President of Osaka University” on the top of the letter and at least one of the letters must be from the dean or head of the

	faculty or school or graduate school which the applicant attended, or the president (rector) of the university or institution that is the applicant's alma mater.
7 A Copy of Passport or Certificate of Citizenship	—
8 Abstract of Graduation Thesis	• The abstract of the applicant's graduation thesis or equivalent document, including figures etc.

8. Selection Schedule

Schedule	Selection Process
By the beginning of February 2024	<p>The Graduate School of Engineering (GSE), Osaka University, will select preliminary candidates for the MEXT Scholarship from the pool of applicants by reviewing application materials and documents.</p> <p>These preliminary candidates will be notified and called in for an interview.</p>
By the end of February 2024	The preliminary candidates will be interviewed by the representative professors.
By the end of March 2024	<p>The preliminary candidates considered for the MEXT scholarship will be officially announced.</p> <p>※We do not reply to individual inquiries regarding admission decisions.</p>
By the end of July 2024	<p>The final selection by the Japanese Government will be conducted.</p> <p>Successful applicants will be notified by post. Notifications will be sent to the address specified on the application form.</p>

9. Term of Scholarship

(1) Master's Program:

5 years (2 years + 3 years*)

*The scholarship will be terminated if a student falls under one of the following cases: unsatisfactory academic achievement; failure to finish the master's program within 2 years; failure to pass the entrance examination of the doctoral program.

(2) Doctoral Program:

3 years*

*The scholarship will be terminated if a student falls under one of the following cases: unsatisfactory academic achievement; failure to finish the doctoral program within 3 years

10. Scholarship Benefits

(1) Allowance (as of April 2023)

Master's Program: 147,000 JPY per month

Doctoral Program: 148,000 JPY per month

*The amount of allowance is subject to change every year due to the Japanese government budget conditions.

(2) Travel Expenses:

1 Transportation to Japan:

Each grantee will be provided, according to his/her itinerary and route as designated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), with an economy class air ticket from the international airport closest to his/her place of residence (the address stated on the application) to an international airport (Mainly Kansai International Airport) in Japan. Expenses such as domestic transportation from his/her place of residence to the international airport (including transit in Japan), airport tax, and any special taxes for overseas travel will NOT be provided.

2 Transportation from Japan:

Each grantee returning to his/her home country within the last payment month of his/her scholarship will be provided, upon application, with an economy class air ticket for a flight from Kansai International Airport to the international airport closest to his/her place of return. Expenses such as domestic transportation from his/her place of residence to the international airport (including transit in his/her home country), airport tax, and any special taxes on overseas travel will NOT be provided.

[Notes]

(1) If the student wishes to return to their home country before/after the scholarship period ends due to personal reasons, return travel expenses from Japan will not be paid.

(2) If the grantee remains in Japan (to pursue further studies, employment, etc.) after the scholarship period ends, the return travel expenses will not be paid.

(3) Insurance premiums for travel to/from Japan shall be borne by the grantee. The airport the grantee departs from or returns to must be an airport of the country of his/her nationality.

(3) Entrance examination fees, enrollment fees and tuition: exempt.

11. Semester Starting Date

October 1, 2024

*Classes may start at a later date.

12. Miscellaneous

- (1) Incomplete documents will not be accepted.
- (2) The content of the submitted documents cannot be changed after the application procedure has been completed.
- (3) Applications may be rejected or admission may be revoked even after matriculation, if any information or material in the application is found to be fraudulent.
- (4) A breach of the pledge to MEXT will be cause for termination of the scholarship.
- (5) The grantee must follow the rules of Osaka University. The scholarship will be terminated if a grantee is officially reprimanded by the university or fails to demonstrate his/her ability to complete his/her studies.
- (6) Successful applicants will be strongly advised to learn about Japan (the people, society, culture, and geography) as well as the University prior to their arrival in Japan.
- (7) Since the first installment of the scholarship payment will be made from one month to one and a half months after the grantee's arrival in Japan, we advise to bring at least 200,000 JPY to Japan to cover immediate living expenses and other necessary expenses. (If the place of residence or university requires additional expenses, the grantee must be informed of them.)

13. Policy on Handling Personal Information

- (1) Names, addresses, and other personal information obtained through the application procedure will be used in the Entrance Examination Process, in the Announcement of the List of Successful Applicants, in the Admission Procedures, and in the distribution of program leaflets. For those admitted into Osaka University, personal information will also be used in academic-related matters(such as keeping academic and registration records), in student support matters(such as health care management, career support, etc.), and in school fee management.
- (2) Information obtained through the entrance examination will be used in statistical analysis of examination results, and in research on admission methods.

14. Inquiries

Student Support Affairs Section
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