Degree Programs Conducted in English

Osaka University, Graduate School of Engineering offers the following Master's Degree programs which are conducted in English [Enrollment in October 2017]

For Privately Financed International Students

The Osaka University Graduate School of Engineering (GSE) offers the following special programs which are conducted in English. Each program consists of a master's course followed by a doctoral course to be admitted by a special selection for internal applicants.
Students are expected to enroll in both courses sequentially to obtain both the master's and doctoral degrees.

Note:
The quota advertised in this guideline has no pre-allocate scholarship, and is not available for applicants sponsored by the Special Programs with Japanese Government (MEXT) Scholarship in compliance with University Recommendation.

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http://www.eng.osaka-u.ac.jp/en/entrance/g_admissions.html

Biotechnology Global Human Resource Development Program

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. In the Advanced Research Proposal Course students will acquire the ability to propose original research plans independently as a scientist. Through immersion in Special Research students will have ample time during the remaining four years to attain their Master's and Doctoral Degrees in Engineering.

(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 the 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 semester of the master's program, under the supervision and instruction of his/her professor.

(5) In the first semester of the doctoral program, students will take the Advanced Research Proposal Course. This course is designed to prepare students as research scientist with the ability to propose original research plans independently, so that they can complete their doctoral dissertation. In this course, each student will propose a research plan in a field different from their own, make a presentation, and have discussions with members of faculty, and doctoral program students of the related fields to gain diversified/multiple perspectives. During the period of the doctoral program, the student will devote themselves to Special Research while expanding their knowledge by taking the Advanced Biotechnology Exercise and Advanced Biotechnology Seminar courses.

(6) For Special Research in the master's and doctoral programs, each student will choose one laboratory among Bioenvironmental Science (Watanabe Lab.), Cell Technology (Muranaka Lab.), Bioprocess Systems Engineering (Kino-oka Lab.), Bioresource Engineering (Fukusaki Lab.), Molecular Biotechnology (Omasa Lab.), Biomolecular Science and Engineering (Nagai Lab.), and Applied Microbiology (Fujiyama Lab.). Students can change their laboratory after completion of the master's program, if they wish to do so.

(7) Improving Japanese skill is also required during the course. N4 level Japanese Language Proficiency Test is required for obtaining the master's degree and N3 level is required for obtaining the doctoral degree.

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; completion of Special Research; N4 level certificate of the Japanese Language Proficiency Test; 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 Seminar on Frontier Research Proposal to acquire two compulsory credits; completion of Courses of Frontier Biotechnology Exercises and Frontier Biotechnology Seminars to acquire a minimum of four credits; completion of Special Research; N3 level certificate of the Japanese Language Proficiency Test; successful defense of doctoral dissertation and passing of the final examination of the program.

② Degree: Doctor of Philosophy in Engineering

4. Admission Quota

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5. Program Website

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

Chemical Science Course

1. Program Summary

The present Chemical Science Course (CSC) at the Graduate School of Engineering offers postgraduate students for both your Masters and Doctoral degrees 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 basis for applied chemistry through 18 intensive courses given by over 40 professors in the fields of Physical Chemistry, Synthetic Chemistry, and Biological Chemistry. From the second year, the program is geared towards developing the ability for each student to carry out creative scientific research. As such, the single most important element of the curriculum for any individual is his/her own research project.

(3) Also in the initial semester, students will choose their research director, with the guidance of the faculty members and the advisory board of the course, and will select their thesis advisor after completing the rotation of working with different faculty members over a few weeks. 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 from the professors in the Department of Applied Chemistry
(check the website of the department:
http://www.chem.eng.osaka-u.ac.jp/appl/eng/index_e.html).
Students can also choose the supervisor from one of the professors in Physical Chemistry for Life Science Lab., Chemistry on Supra Molecular Recognition Lab., Chemical Biology Lab., and Bio functional Chemistry Lab. in the Department of Material and Life Sciences
(check the website of the department:
http://www.chem.eng.osaka-u.ac.jp/appl/eng/CSC_e/index_e.html)

(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 as Statistical Mechanics, Polymer Physics, Interactions of Radiation with Matter, Electrochemistry, and many more; an organic chemistry student will chose 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 credits; 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 Applied Chemistry, Adv.3 and 4 for a total of no less than 6 credits; satisfactory performance in the mid-term review of the Special Re-search; 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

Max. 10

5. Program Website

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

International Priority Graduate Program of "Quantum Engineering Design Course"

1. Program Summary

The aim of this program is to equip a new generation of young scientists with fundamental knowledge and cutting-edge research skills to realize quantum engineering design.

2. Important Program Features

(1) All students will conduct research under the academic supervision and instruction of a professor or an associate professor. Each student will choose one research theme from the following categories:

① Creation of Frontier Mathematical Methods'
② Elucidation of Emergent Material Function
③ Realization of New Generation Functional Materials

(2) The following are some of the lectures and seminars offered in the master's course:

Solid State Physics
Surface and Interface Science
Advanced Numerical Analysis
Topics in Quantum Simulation
Computational Science I
Design of Functional Materials and Composites
Tutorials on Computational Nano-materials Design I
Tutorials on Computational Nano-materials Design II
Molecular Electronic Engineering
Plasma Engineering for Nano Technologies
Theoretical Materials Science
Solid State Theory I
Analytical Dynamics
Electron Beam Nano Imaging
Chemical Reaction Dynamics I
Semiconductor Physics
Selected Topics in Quantum Physics of Solids
Special topics of extremely high precision machining
Advanced Computational Mechanics
Advanced Theoretical Solid Mechanics
Fusion Physics
Atomically Controlled Surface Processing
Interface Science and Technology
Quantum Engineering Design Seminar I
Quantum Engineering Design Seminar II
Quantum Engineering Design Seminar III
Quantum Engineering Design Seminar IV
Quantum Engineering Design Seminar V
Quantum Engineering Design Seminar VI

(3) The following are some of the lectures and seminars offered in the doctoral course:

Special Topics in Solid State Physics
Advanced Surface Physics
Advanced Nonlinear Systems Analysis
Computational Physics

Advanced Technological Innovation
Tutorials on Computational Nano-materials Design
Advanced Integrated Electronics Engineering
Materials Science, Adv.
Overview of Ultra Precision machining
Atomically Controlled Materials Processing
Quantum Engineering Design Seminar for Advanced Researches Ⅰ
Quantum Engineering Design Seminar for Advanced Researches Ⅱ
Quantum Engineering Design Seminar for Advanced Researches Ⅲ
Quantum Engineering Design Seminar for Advanced Researches Ⅳ
Quantum Engineering Design Seminar for Advanced Researches Ⅴ
Quantum Engineering Design Seminar for Advanced Researches Ⅵ

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

(1) Master's Course

① Requirements: Completion of lectures and seminars corresponding to no less than 30 credits; 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 Course

① Requirements: Completion of lectures and seminars corresponding to no less than 6 credits; completion of Special Research; successful defense of the doctoral dissertation; and passing the final examination of the course.

② Degree: Doctor of Philosophy in Engineering

4. Admission Quota

A few

5. Program Website

http://www.dyn.ap.eng.osaka-u.ac.jp/QEDC/home.html

International Program of Maritime and Urban Engineering

1. Program Summary

The aim of this program is to educate students to become young scientists of the new generation with basic knowledge and state-of-the-art research skills necessary for: disaster prevention; protection of marine and urban environments; development of new energy and energy-saving technologies; and for the realization of a synthesized scheme of space, ocean and land.

2. Important Program Features

(1) English will be used in lectures, instructions, and research-related activities. In the Basic Courses in the first year, students will acquire a solid background in maritime and urban engineering. Through immersion in Special Research, students will have ample time during the remaining four years to attain their Master's and Doctoral degrees in Engineering. The Basic Courses in the first two semesters consist of specially designed lectures which can be categorized into the following three systems.

① Disaster Prevention and Safety Engineering
② Environmental Symbiosis and Energy Saving
③ Development and Design of Space, Land and Ocean.

Each student can take these specially designed lectures or the lectures to be provided by preexisting courses of Naval Architecture & Ocean Engineering, Civil Engineering, and Architectural Engineering.

(2) Students will conduct their Special Research from the third semester (the second year) of the master's program under the supervision and instruction of their professors. In this scheme, each student will choose one research theme from the following categories:

① Marine Interdisciplinary Engineering
② Comprehensive Spatial Design
③ Urban Synthetic System Design
④ Naval Architecture
⑤ Ocean Systems Engineering
⑥ Structural and Geotechnical Engineering
⑦ Civil and Social Systems Engineering
⑧ Architectural Structures and Strength
⑨ Environmental and Human Engineering in Architecture

(3) In the master's program, students will be encouraged to participate in the cross-boundary special seminars and make a presentation on the progress of their Special Research. At the end of the master's program, the achievement and academic level will be checked.

If the level does not meet certain criteria, they will go through a short-term intensive course for further education.

(4) When starting the doctoral program, students will propose the research plan by themselves, review the state-of-the-art in their desired research theme, and make their presentation which will be followed by discussions with professors and associate/assistant professors.

(5) During the period of the doctoral program students will conduct the Special Research, while expanding their knowledge by attending lectures and seminars. Each student will be required to make a presentation (at least once during the doctoral program) on the progress of the Special Research at the international research meeting which will be orga-

nized, prepared, and chaired by students every year.

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

(1) Master's Program

① Requirements for completion of the course: Completion of lectures and seminars corresponding to no less than 30 credits; completion of Special Research; submission and defense of the master's thesis; and successful passing of the final examination of the program.

② Degree: Master of Engineering

(2) Doctoral Program

① Requirements for completion of the program: Completion of lectures and seminars corresponding to no less than 4 credits; satisfactory performance in Qualification Test Part Ⅰ; defense of the doctoral dissertation; and passing of Qualification Test Part Ⅱ of the program.

② Degree: Doctor of Philosophy in Engineering

4. Admission Quota

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5. Program Website

http://maritime-urban.naoe.eng.osaka-u.ac.jp/

6. Application Requirements (The following items are common to the all program)

(1) Citizenship and residence status: This advertisement is for those with the "Student" residence status. Those with other residence statuses are not eligible to apply for the entrance examination.
However, those who will change their residence status to "Student" prior to enrollment may apply.
Only for "Chemical Science Course", those with Japanese nationality are eligible to apply for the examination as well.

(2) Educational background : Applicants must fulfill one of the following qualifications:
① The applicant has graduated, or is expected to graduate by September 30, 2017, from a Japanese university.
② 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, 2017.
③ The applicant is no younger than 22 years of age as of September 30, 2017, and is recognized as possessing academic abilities equivalent to those of university graduates, by passing "the Preliminary Examination of Applicant's Qualifications" conducted by Osaka University (See Note (2)).

(3) Language ability: Applicants 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 should include TOEFL, TOEIC, IELTS or CPE official test scores.

(4) Health: Applicants must be physically and mentally healthy enough to pursue study at university.

Notes:
(1) Admission will be revoked if arrival in Japan by the designated date is unavailable.
(2) Applicants who fall under (2)-③ must take the "Preliminary Examination of Applicant's Qualification" in advance. Such applicants must consult the Admission and International Students Section at the Student Affairs Division, by October 7, 2016 for fall examination or April 14, 2017 for spring examination.
The Admission and International Students Section will announce details concerning the documents required for this procedure. Applicants will be informed of the results as soon as they are available.

7. Application Procedure

Note:
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 Admission and International Students Section, Student Affairs Division, Graduate School of Engineering, Osaka University by post or by hand, to be reached strictly by the following deadline.

The entrance examination will be held twice. Applicants may apply for either one.

① **Examination in Fall・・・October 21 to November 17, 2016 4:00 p.m. (Japan time)**

② **Examination in Spring・・・May 1 to May 26, 2017 4:00 p.m. (Japan time)**

(2) Forms and Certificates to Submit

Materials	Details
(1) Application Form	・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 hat, in a frontal pose.
(2) Admission Ticket for an Examination and Photo Card (Only for applicants who already reside in Japan)	・Applicant's name must be written on the prescribed form. ・Two photographs (4cm×3cm) should be affixed. It should be taken within the last 3 months and should show the upper part of the body, without hat, in a frontal pose.
(3) Statement of Purpose	・A Statement of Purpose of the applicant (no more than three double-spaced, typed pages on A4 paper), stating their research proposal
(4) Certificate of (Expected) Graduation / Completion	・A certificate or certified true copy of certificate from the last school the applicant attended. The certificate should be the original document (not a copy). Not required for those who have graduated from the Osaka University School of Engineering / Graduate School of Engineering. Notes: (1) Applicants who (are expected to) have master's degrees should submit the original certificates of (expected) graduation/completion for both bachelor's and master's degrees. (2) Applicants whose last schools issue graduation (completion) certificates and degree certificates in separate sheets should submit both in the original forms.
(5) Certified Academic Records	・Certified Academic Records from the last school the applicant attended. The transcript should be the original document (not a copy). Not required for those who have graduated from the Osaka University School of Engineering / Graduate School of Engineering. Note: Applicants who already have master's degrees should submit Academic Records for both bachelor's and master's degrees, certified by the universities the applicants attended.

(6) Certificate of English proficiency	・Attach TOEFL, TOEIC, IELTS or CPE official test scores as certification except for the cases below. - Applicants whose first language is English. - Applicants who have graduated from a university or a graduate school located in an English speaking country. - Applicants who have completed an undergraduate or graduate degree program where the language of instruction and examination was English. In this case, an official statement from the school will be required, confirming the use of English as the language of instruction and examination. - Applicants who are on the Chemistry-Biology Combined Major Program and expected to graduate from either of the School of Science, Engineering, or Engineering Science at Osaka University prior to the date of enrollment to the course.
(7) Letter of Recommendation	・No less than two letters of recommendation from different recommenders. The letter should be addressed to **the President of Osaka University** from the academic supervisor of the university the applicant attended, the employer if the applicant works in, or the current supervisor.
(8) Certificate of Citizenship (A4 size paper) (Only for non-Japanese applicants)	・The applicant can submit a copy of the passport as well.
(9) Copy of applicant's Residence Card (Only for applicants who already reside in Japan)	・Required only for those who have a status of residence in Japan. ・It must specify applicant's residence status, period of stay, and current address.
(10) Abstract of Graduation Thesis	・The abstract of the applicant's graduation thesis or equivalent document, including figures etc.

Notes on submission:

(1) Application documents should be typed or handwritten in BLOCK letters on A4 size paper in English. For documents in a language other than English, an English translation must be attached.

(2) Applicants need to pay the application fee, JPY 30,000 during the application period. ***Contact the Admission and International Students Section <u>well in advance</u> to ask how to pay it.**

(3) Admission Ticket for an Examination will be sent to applicants who <u>do reside in Japan</u>.

(4) Once application documents have been received, they will not be returned.

8. Selection and Announcement of the Results

(1) For those who will apply for entrance examination in Fall 2016

① Examination will be conducted in either of the following ways:

・For applicants who do not reside in Japan:

Screening will be conducted by reviewing the application materials and documents submitted. An interview and/or academic examination might be conducted if deemed necessary.

・For applicants who do reside in Japan:

Screening will be conducted via an interview and academic examination, within the period from the end of November to the beginning of December 2016.

② The examinees' numbers of successful applicants will be posted on the Graduate School Admissions page of the Osaka University School/Graduate School of Engineering website **on December 16, 2016 2:00 p.m. (Japan time)**

(2) For those who will apply for entrance examination in Spring 2017

① Examination will be conducted in either of the following ways:

・For applicants who do not reside in Japan:

Screening will be conducted by reviewing the application materials and documents submitted. An interview and/or academic examination might be conducted if deemed necessary.

・For applicants who do reside in Japan:

Screening will be conducted via an interview and academic examination, within the period in early June 2017.

② A notification will be sent by the end of June 2017 to successful applicants to the address specified in their application form.

9. Admission Fee and Tuition

(1) Admission fee: 282,000 JPY

(2) Tuition: 535,800 JPY/year

Notes:

(1) The bank transfer fee is to be paid by the applicant.

(2) The amount of the admission fee and tuition are subject to change. Amendments to fees will be applied from the date of amendment.

10. Semester Starting Date

October 1, 2017

※The classes may start at a later date.

11. Notes for Applicants

(1) Incomplete documents will not be accepted.

(2) The content of submitted documents cannot be changed after the application procedure has been completed.

(3) Application fee is non-refundable, excluding the following cases ① to ⑤. In such a case, please contact the Admission and International Students Section.

① The applicant paid an application fee but was judged unqualified for application.

② Application documents arrived after the application deadline and were refused.

③ There were deficiencies in the application documents, and therefore were not accepted.

④ Applicant paid an application fee but did not apply.

⑤ The applicant paid the application fee multiple times by mistake.

(4) 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.

(5) Applicants who need assistance due to physical disabilities when taking exams and/or in taking courses of study after enrollment in Osaka University should consult the Admission and International Students Section at the following address by November 17, 2016 (fall) or by May 26, 2017 (spring).

(6) On-campus parking spaces for cars and motorcycles are not available on the day of examination. Use of public transportation is encouraged instead.

(7) 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.

(8) For any questions concerning the application procedure, please contact the Admission and International Students Section freely.

12. 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, school fee remissions, scholarship applications, 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.

13. Inquiries and Further Information

All inquiries to:

Admission and International Students Section
Student Affairs Division
Graduate School of Engineering
Osaka University
2-1 Yamadaoka, Suita,
Osaka 565-0871, JAPAN
Telephone: +81-6-6879-7226
Facsimile: +81-6-6879-7229
E-mail: iso-staff@eng.osaka-u.ac.jp