Program for Leading Graduate Schools

Graduate Course for System-inspired Leaders in Multidisciplinary Science

～System-inspired Leaders for Multidisciplinary Science (SiMS)～

Course Registration Guide

(As of 1 Apr. 2023)

Graduate Schools of Osaka Metropolitan University

Contents

I. Graduate Course for System-inspired Leaders in Multidisciplinary Science (SiMS Program)

Today, there is an increasing need for researchers with a high level of education who can demonstrate strong leadership in the global community to make our industry more competitive and to achieve a sustainable society through innovations. Osaka Prefecture University and Osaka City University have been selected by the Ministry of Education, Culture, Science, Sports and Technology as the center for promoting the “Program for Leading Graduate Schools” in order to foster excellent students who will play leading roles in the academic, industrial and governmental sectors around the globe. In line with this, we offer the “Graduate Course for System-inspired Leaders in Multidisciplinary Science,” a five-year straight doctoral course designed to cultivate leaders with a global perspective for the industrial community.

1. Goal of this Program

In order for industries to become more competitive and to realize a sustainable society through innovation, there is a strong demand for doctoral researchers who can demonstrate global leadership, and the ability to come up with multidisciplinary and cross-disciplinary strategies that can encompass the needs found from a social scientific point of view without being bound by specific fields is increasing more and more important. In this leading graduate school program, we aim to foster "System-inspired leaders in Multidisciplinary Science" who can develop research strategies that lead to new value creation (innovation) by combining interdisciplinary creativity with a broad bird's-eye view of multiple fields and the ability to deeply integrate the layers within the field.

2. Objectives of this Program (Picture of Human Resources to be Nurtured)

We aim to foster researchers equipped with the following abilities and characteristics:

1. Solid academic foundation ability to lead the field of expertise.
2. A bird's-eye view of diverse academic fields without staying in a specific specialized field.
3. Ability to design research strategies stemming from multidisciplinary and multilevel interdisciplinary ideas.
4. Creativity and execution ability to link basic research to industrial innovation
5. Generalship and leadership to organize and lead diverse human resources to achieve their goals.
6. Ability to manage and execute R&D strategies.
7. Ability to disseminate one’s ideas widely and have them deeply rooted in the global community

3. Curriculum Policy (Curriculum organization and implementation policy)

The five-year straight curriculum is organized with the objective of achieving the goals set forth by the “Graduate Course for System-inspired Leaders in Multidisciplinary Science.”

We have designed 5-year curriculum in an interdisciplinary manner and through industry-academia-government collaboration, so that we can cultivate researchers who can conceive new value with multidisciplinary idea, having interests in diverse fields, utilizing the knowledge of basic science and apply a comprehensive perspective towards our society.

(1) The literacy course in our curriculum provides a general education in philosophy and ethics of science to help students to understand social issues and value creation widely.

(2) The interdisciplinary courses in our curriculum are designed to foster multidisciplinary research capabilities. Students are exposed to a broad range of disciplines through interactions among many researchers in interdisciplinary fields.

(3) The ideation course, which is an essential part of our degree program, are designed to foster (1) “systems thinking” to take a holistic view of complex events or phenomena; (2) “design thinking” to create new ways of thinking; and (3) “management skills” to flesh them out into innovations in a comprehensive manner.

(4) The global course is provided in a mixed manner with focus on lecture, research, and exercises. Instructors include foreign scholars. We also invite instructors from the business community. Various issues in the globalized industry are raised with the objective of fostering the system-inspired ability to deal with them.

(5) The entrepreneurship course is designed for student to utilize above 1-4 skill for transferring the results of academic research and new idea into industrial innovation.

Policy for Verification of Learning Outcomes

I. Grading Criteria

(1) Based on the assessment and degree grant policy (diploma policy), "achievement goals" shall be set for each course, then due to their achievements, students get grade A+ to D in accordance with the criteria in Article 14 of the OMU Course Regulations. The standard is C or above, which is specified as the level of achievement.

(2) All grade distributions are aggregated and the degree of achievements is reviewed to improve each semester.

(3) Grading shall be based on the degree of achievement, on an absolute scale. If it is biased, the causes shall be investigated and remedied (except for small classes).

(4) The degree thesis is assessed by the affiliated graduate school department.

II How to grade

(1) Grading shall be based not only on the results of the final examination, but also on the level of achievement, including reports, presentations, and attitudes. The number of days of attendance is not included.

(2) Specific evaluation methods will be determined by each course instructor. The syllabus including evaluation criteria and evaluation items are presented to students in advance.

Policy for verification of Training Outcomes

Criteria for developmental evaluation

(1) The evaluation shall be conducted in accordance with the eligibility criteria for the Leading Program Assessment(attached).

(2) Based on the diploma policy of this program, "achievement goals" shall be set for each training period and graded by the rubric evaluation form according to the degree of achievement. Passing grade is defined as 60% or more, which is the specified level of achievement.

(3) All evaluation scores are tabulated as a grade distribution for each period, and the degree of achievement is reviewed for improvement.

4. Diploma Policy (Assessment and Degree Grant Policy)

The ultimate goals of our program are the pursuit of the contribution to the development of a sustainable society and the creation of culture; and to bring about industrial innovations

An education in line with these ultimate goals is offered throughout this program. In order for the students enrolled in this program to be certified for a diploma, they need to develop the abilities to identify, assess and solve problems; enhance creativity and personality; and acquire expertise and high ethical standards as well as in-depth general knowledge, along with the following qualities:

1. Solid academic foundation ability to lead the field of expertise.
2. A bird's-eye view of diverse academic fields without staying in a specific specialized field.
3. Ability to design research strategies stemming from multidisciplinary and multilevel interdisciplinary ideas.
4. Creativity and execution ability to link basic research to industrial innovation
5. Generalship and leadership to organize and lead diverse human resources to achieve their goals.
6. Ability to manage and execute R&D strategies.
7. Ability to disseminate one’s ideas widely and have them deeply rooted in the global community

In this program, the major assessment criteria will be whether a student has been able to discover problems in our society or industry by taking a holistic view, multidisciplinary manner and foster an ability to achieve breakthroughs to create industrial innovations in such fields without staying in a specific specialized field.

II. Course Registration Guidelines

1. Registering for the Courses and Earning Credits

Students in the Leading Program Courses must register for the subjects specified by the curriculum of the affiliated graduate school department as well as the subjects in the curriculum of the SiMS Degree Program, and earn the credits required to complete the respective curricula.

2. Curriculum of the SiMS Degree Program

The curriculum of the SiMS Degree Program is shown in the Appendix (see the next page).

3. Course Registration Reminders

(1) Signing up for the Courses, Grading, etc.

Course application, grades, credits, the academic calendar, etc., are specified by graduate schools of Osaka Metropolitan University.

(2) Registration for Special SiMS Research (compulsory, two credits)

Special SiMS Research is a course that allows students to conduct research for about three months in a laboratory of a different field/specialization from the affiliated laboratory. The registration flow is as follows:

1. Determine in which year to register for the course. (L2,M2)Consult the mentor (see III-3. Individual Mentoring by Persons with Experience as a Corporate Executives) to select the laboratory, etc., for the course. (To search laboratories accepting students for Special SiMS Research, their research subjects and other information, click “Laboratory Rotation” on the SiMS website and then log in to “Special SiMS Research Laboratory Rotation.” The ID, password and when the website is updated will be informed separately.)
2. Apply for the course at the beginning of the predetermined academic year.(L3,D1)
3. Meanwhile, with permission from the research advisor, determine the desired period for taking the course.
4. Submit the prescribed application to the mentor.
5. The mentor and the faculty from the laboratory will discuss the application details and determine whether the laboratory will accept the student or not, as well as the requirements for acceptance and other necessary matters.
6. The mentor and the faculty in charge of review from the laboratory will have a discussion and confirm whether the application is consistent with the object of the program or not.
7. The mentor will inform the student of the results of the discussion (accepted or not, requirements for acceptance, etc.)
8. Start to take the course (start to conduct research in a different field).
9. Submit the mentor weekly reports during the course period, as well as a report at the completion of the course.

It takes times to confirm, students must get an early start on consulting.

(3) Registration for Global Leadership Workshop (outside Japan)

By the third year (L3, D1) at the latest, students determine the destination for research outside Japan (strongly recommend to apply for the subsidy program such as “Tobitate! Study Abroad Initiative” by Ministry of Education, Culture, Sports, Science and Technology to get scholarship in advance.) and complete the course during the fourth year(L4,D2). Otherwise, it may be affected research progress for a doctoral degree. Preparation and procedures will be informed separately.

(Appendix) Curriculum and Accreditation of the SiMS Program for International Students Courses	Subject title	Number of Credits	Academic year	The number of credits for designated subjects, etc
Literacy courses	Scientific Literacy	*2 (Compulsory)	2	4 credits or more
	International environmental Issues	2	1-2	
	Special Seminar for Scenario Task Oriented Planning	2	2	
	Technology-based Entrepreneurship Course	*2 (Compulsory)	1-2	
Interdisciplinary courses	Special SiMS Research	*2 (Compulsory)	3-5	2 credits or more
	Special Communication Seminar based on multidisciplinary science	2	2	
Ideation courses	Special Seminar for Strategic Reasoning and Thinking 1	*2 (Compulsory)	1-2	4 credits or more
	Special Seminar for Strategic Reasoning and Thinking 2	*2 (Compulsory)	1-2	
	Ideation and Globalization Workshop	2	3-5	

(Appendix) Curriculum and Accreditation of the SiMS Program for International Students Courses	Subject title	Number of Credits	Academic year	The number of credits for designated subjects, etc
Global courses	Special Seminar for Global Communication	2	2	2 credits or more
	Global Leadership Workshop	*2 (Compulsory)	3-5	
Entrepreneurship courses	Technology-based Entrepreneurship Course-I(TEC-1)	2	3-5	4 credits or more, including 2 credits from 8 courses (TEC-II A-H)
	Technology-based Entrepreneurship Course-II(TEC-2)	(Compulsory)	3-5	
	-A	1		
	-B	1		
	-C	1		
	-D	1		
	-E	1		
	-F	1		
	-G	1		
	-H	1		
	Technology-based Entrepreneurship Course-III(TEC3)	2	3-5	
	Technology-based Entrepreneurship Course-IV(TEC4)	2	3-5	
Total				16 credits or more including 12 credits for compulsory subjects

4. Course Application Reminders

(1) In the case where a student who enrolled in the Leading Program Course in the second year in the master's course has already completed a subject that is identical to a SiMS subject and has earned credits for the subject, the student is automatically deemed as having completed the SiMS subject and earned credits for it. Therefore, the title, credits, and other information of the SiMS subject, not those of the specialized subject in the standard curriculum, will appear in the student's attendance book and transcript for the second year and onward. The credits are counted, however, toward the completion requirements of the field at the department.

(2) Credits earned by completing the Technology-based Entrepreneurship Course as one of the literacy courses are counted toward the completion requirements of the affiliated graduate school department.

(3) Student must use the online registration system when applying for SiMS subjects in a similar manner to ordinary subjects. (except Special Seminar for Scenario Task Oriented Planning, Global Leadership Workshop, TEC1-4. For more information, please contact SiMS office.)

5. Assessment of Progress

Progress in the SiMS Degree Program is assessed as stated in the table below.

Assessment method	Assessment schedule	Qualifications for Examination and Defense
SiMS Qualifying Examination	At the end of the third academic year(L3)	Detailed information will be provided separately.
SiMS Defense	At the end of the fifth year(L5)	Those who are expected to meet the doctoral program requirements of the affiliated graduate school department and expected to earn 16 or more credits including 12 credits for compulsory subjects as shown in the Appendix.

* SiMS Defense may be given ahead of schedule to those who have satisfied the qualifications for the examination mentioned in the table above.

*Explanation of the date, method and other information of the SiMS Qualifying Examination, etc., will be provided in advance.

6. Requirements for advancement

Students must satisfy the following requirements to be advanced to the fourth year(L4,D2) of the SiMS Program.

(1) Finish the master's program and get enrolled in the doctoral program.

(2) Pass the SiMS Qualifying Examination (SiMS QE) *mentioned in the section 5.

*Assessment, method and other information of the SiMS Qualifying Examination (SiMS QE) will be provided separately.

7. Requirements for completion of the SiMS Degree Program

Students must satisfy the following requirements to be certified as having completed the SiMS Program.

(1) Meet the requirements of the doctoral program of the affiliated graduate school department.

(2) Pass the SiMS Defense review mentioned in the section 5.

8. Additional Remark on the Diploma on the Completion of the SiMS Degree Program

Those who have completed the SiMS Degree Program will receive a diploma of the degree offered by the affiliated graduate school department, which will have an additional remark on the completion of the System-inspired Leaders for Multidisciplinary Science (SiMS) Degree Program. A transcript issued at the completion of the program will clearly state the completion of the Leading Program of the affiliated graduate school department.

9. Loss of Qualification for Enrollment

Those who are determined as being disqualified to continue studying in the SiMS Degree Program as a result of a review of their study results and attitude in the program will lose the qualification for enrollment in the program. However, this will not prevent them from continuing their enrollment in the affiliated graduate school department and writing a thesis at the department.

III. Student Support

1. Education and Research Expenses

Expenses for participation in academic meetings and overseas training required in the course of the SiMS Degree Program will be paid within the limits of the budget. Application procedures for payment will be informed as needed.

2. Individual Mentoring by Persons with Experience as Corporate Executives

A mentor will be assigned to each student upon enrollment in the SiMS Degree Program. All students can receive comprehensive support from their mentors with regard to taking courses in the program, planning independent research, laboratory rotation, study abroad and other matters.

3. Corporate Internship and Career Path Support

Center for advanced education of entrepreneurship and innovation, which has turned out many doctoral researchers for industry, provides support in selecting a host for internship and designing a career path.

IV. Other

1. Purchase of Personal Accident Insurance for Students Pursuing Education and Research and other insurance

Those who are enrolled in the SiMS Degree Program must take out, for the period of their enrollment, Personal Accident Insurance for Students Pursuing Education and Research (Gakkensai) and liability insurance incidental to Gakkensai, or insurance equivalent to these.

2. SiMS Office, Center for advanced education of entrepreneurship and innovation

SiMS Office performs administrative work associated with the SiMS Degree Program.
The office will provide information on registration, student support and other necessary matters, via email, phone, bulletin board, or other means. If you have any questions, contact the following:

Room 312, 3rd floor of A6 Building
Nakamozu Campus, Osaka Metropolitan University
TEL: +81-72-254-7852 FAX: +81-72-254-8293
E-mail: gr-idec-sims@omu.ac.jp
URL: https://www.omu.ac.jp/las/sims/

3. Contact

Contact to Education Affairs Division (A3 Building) or the above 2. (SiMS Office) about Conference and inquiries about Leading Degree Program.