

Graduate Program to Foster BioDX Leaders for Global Bio-Industry

1. IGP (A) Outline

This program is to foster BioDX leader who will realize digital transformation in the field of biotechnology. BioDX leaders can be expected as a leader who can strongly promote the achievement of Society 5.0 and the development of their own industries.

1-1. Graduate Majors available to IGP (A) Students

Graduate Major in Life Science and Technology

Graduate Major in Human Centered Science and Biomedical Engineering

2. Competencies Developed

[Integrated Master's and Doctoral Degree]

To achieve the above objectives, this program students acquire the following skills.

- ✧ Advanced expertise for BioDX Leaders
- ✧ Advanced problem-setting and problem-solving skills underpinned by expertise and an ethical worldview
- ✧ Advanced sophistication and communicating skills required as international professionals

3. Learning Goals

To acquire the skills listed in “Competencies Developed”, students in this program will have the following trainings.

- A) Acquiring advanced expertise for BioDX Leaders
Acquiring advanced expertise for BioDX Leaders through Research Seminars, Research-Related Courses, and Major Courses
- B) Acquiring the knowledge of a broad range of science and technology fields
Learning broad knowledge conducive to the development of science and technology through abundant Major Courses
- C) Acquiring research-executing skills, problem-setting skills, problem-solving skills, and innovative creativity
Acquiring research-executing, problem-setting, problem-solving, and academic writing skills as well as innovative creativity through Research Seminars, Research-Related Courses, and exercises and experiments in Major Courses
- D) Acquiring international communication skills
Learning advanced communication skills required as international professionals through Humanities and Social Science Courses, Entrepreneurship Courses, and Major Courses
- E) Cultivating sophistication in relation to bioethics and society
Learning ethical and social values relevant to life and research in “Life Science and Technology” through Humanities and Social Science Courses, Entrepreneurship Courses, and exercises and experiments in Major Courses

4. IGP (A) Completion Requirements and Courses

[For Master's Degree]

(1) Required courses

- Computational Biology (2 credits)
- Bio DX Industrial Design (2 credits)
- International Career Development Basics (2 credits)

Table M1. Required courses of IGP(A)

Course category	Course number	Course title		Credits	Competencies	Learning goals	Comments
400 Level	LST.A408	⊙	Computational Biology	2-0-0	1,2	B, D	
	LST.A422	⊙	Bio DX Industrial Design	1-1-0	2,3,4,5	C, D, E	HCB.C404 Industrial Design
	LST.B404	⊙	International Career Development Basics	1-1-0	2,3,4,5	B, C, E, F	
	HCB.C481						
Note: ⊙: Required courses Competencies: 1 = Specialist skills; 2 = Intercultural skills; 3 = Communication skills; 4 = Critical thinking skills; 5 = Practical and/or problem-solving skills							

Under this program, in addition to the above-mentioned requirements, students must also fulfill the Graduate Major completion requirements of their departments (degree completion requirements). For completion requirements of your Graduate Major, please refer to the relevant Graduate Major pages in “Guide to Graduate Majors”

(2) Restricted electives courses

Select ONE course from following list.

- Interdisciplinary Research Fundamentals I (2) (Introduction to Data Science)
- From Data Analytics to Learning

Table M2. Restricted electives of IGP(A)

Course category	Course number	Course title		Credits	Competencies	Learning goals	Comments
400 Level	HCB.C411-2	○	Interdisciplinary Research Fundamentals I (2) (Introduction to Data Science)	1-0-0	1,5	A	
	HCB.C423.L	○	From Data Analytics to Machine Learning	1-0-0	1,4, 5	A	
Note: ○: Restricted electives Competencies: 1 = Specialist skills; 2 = Intercultural skills; 3 = Communication skills; 4 = Critical thinking skills; 5 = Practical and/or problem-solving skills							

Under this program, in addition to the above-mentioned requirements, students must also fulfill the Graduate Major completion requirements of their departments (degree completion requirements). For completion requirements of your Graduate Major, please refer to the relevant Graduate Major pages in “Guide to Graduate Majors”