

## Osaka University International Certificate Program Composition

since 2020

Course Name	Advanced Industrial Biotechnology		
Course Affiliation	International Center for Biotechnology		
Course Manager	Prof. Fujiyama Kazuhito, International Center for Biotechnology		
Cooperative Schools	Graduate School of Science, Graduate School of Medicine, Graduate School of Pharmaceutical Sciences, Graduate School of Engineering, Graduate School of Engineering Science, Center for Global Initiatives		
Eligibility	Graduate students of Joint Campus counterpart universities, and working people who have received at least a bachelor's degree are eligible		
Requirements for completion	6 to 8 credits	Capacity	40
Course Objective	To learn wide fundamental knowledge about biotechnology which involves multi-disciplinary fields such as microbiology, genome engineering, biochemistry, molecular biology, cell engineering, analytical chemistry, biophysical chemistry, stem cell engineering and biochemical engineering To nurture the basic research ability for creating innovative technology to change society To become knowledgeable about intellectual properties and issues in biodiversity to benefit society To develop human resources who aim to establish the sustainable society with the ability of producing added value		
Learning Goals	To understand the relationship between manufacturing science and technology, and biotechnology To understand the importance of basic science and core technology which support biotechnology To understand the issues in exploitation of bioresources using biotechnology To understand the biotechnology and industrial technology innovation To understand the relationship between biotechnology and modern society To understand the relationship between biotechnology and SDGs		
Components	【Required Subjects】 Common Subject (Fall, Winter Term) : "OUICP-Fundamentals of Industrial Biotechnology" Common Subject (Spring, Summer Term) : "SDGs and Asia-Pacific Region II" 【Required Elective Subjects】 Practical Study Abroad (PSA) Subjects: "Laboratory Study I, II, III" 【Elective Subjects】 "OUICP-Advanced Biotechnology" Subjects offered by each graduated school are listed below.		
Special Note	All the courses in this program will be given in English.		

### Components

Course Numbering Code	Course Name	Credits			Course Term	Study Hours	Course Affiliation	Special Note
		Required	Required, Elective	Elective				
720557	OUICP-Fundamentals of Industrial Biotechnology	1			Fall	15	International Center for Biotechnology	
720560	SDGs and Asia-Pacific Region II	1			Summer	15	Center for Global Initiatives	
720542	(PSA) Laboratory study I		1		Spring to Winter	45	Center for Global Initiatives	
720543	(PSA) Laboratory study II		1		Spring to Winter	45	Center for Global Initiatives	
720544	(PSA) Laboratory study III		1		Spring to Winter	45	Center for Global Initiatives	
720558	OUICP-Advanced Biotechnology			1	Spring, Summer	15	Center for Global Initiatives	
281025	ESP Frontier Chemistry A			1	Fall, Winter	15	Graduate School of Engineering	Only for short-term exchange students
281026	ESP Frontier Chemistry B			1	Spring, Summer	15	Graduate School of Engineering	Only for short-term exchange students
290851	Bio-Inspired Chemical Engineering 1			1	Fall	15	Graduate School of Engineering Science	
290852	Bio-Inspired Chemical Engineering 2			1	Winter	15	Graduate School of Engineering Science	
24S014	Current Topics I			1	Spring to Winter	15	Graduate School of Science	
24S049	Natural Product Chemistry			1	Spring, Summer	15	Graduate School of Science	
24S043	Organic Biochemistry			1	Spring, Summer	15	Graduate School of Science	
24S047	Biomolecular Chemistry			1	Fall, Winter	15	Graduate School of Science	
25F004	Virology A			1	Spring	15	Graduate School of Medicine	Only for short-term exchange students
25F005	Virology B			1	Summer	15	Graduate School of Medicine	Only for short-term exchange students