## For entrants in FY 2019

Through liberal arts education subjects: Through the specialized fundamental subjects for specialized education, the student is required Through the specialized education in this program, the student is required to acquire:

Year in which the subject is taken  $1^{st}$  grade  $2^{nd}$  grade  $3^{rd}$  grade  $4^{th}$  grade Required Type of No. of Class subjects Type Subject type No. of course credits credits registration Peace Science Courses 2 (Note2) 2 Required Introductory Seminar **University Education** Introductory Seminar for Basic Courses in for First-Year 2 2 Required First-Year Students Students Introduction to Introduction to 2 University Education 2 Required University Education (Note2) Basic Communication Basic I 1 2 English Required Communication Basic II 1 Usage Communic Communication I A 1 2 Required ation I Communication I B 1 English Communic 1 Communication II A 2 Required ation II Communication II B 1 Field Research in the Elective Foreign Languages 1-4 English-speaking World Required 1 Advanced English for Elective 1 Communication Required Common Subjects Basic Foreign Language 1 Ι Non-English Basic Foreign Language 1 Foreign Elective Π Languages 4 Basic Foreign Language Required 1 (Select one III language) Basic Foreign Language 1 IV Information Courses 2 (Note2) 2 Required Elective/ 9 Area Courses (Note2)(Note3) 1 or 2 Required Take subjects of Health Health and Sports Elective 2 and Sports that are 1 or 2 Required Courses provided in English "Basic Calculus" or "Elements of Calculus" 2 (Note4) Foundation Courses 14 Required Organic Chemistry 2 2 Species Biology Cell Science 2

		General Chemistry	2					
		General Chemistry	2 1 for each subject	Elective Required				
Total	44							

## O Instruction regarding credits.

- Note 1: The year indicated with a circle mark represents that in which students typically take the subject. The year with a double circle mark indicates the year in which students are highly recommended to take the subject. Students are allowed to take the subject in any year after that indicated with a circle or double circle mark. It is required to confirm the semester in which the subject is provided in the class schedule for liberal arts education subjects in the Students' Handbook because some subjects might be provided in different semester from that which is provided in this document.
- Note 2: It is required to first take subjects that are provided in English.
- Note 3: It is required to take more than 4 subjects from the fields of Arts and Humanities/Social Sciences and more than 4 subjects from Natural Sciences.
- Note 4: Students who studied Mathematics III in high school are required to take the subject "Basic Calculus." Students who did not study Mathematics III in high school are required to take the subject "Elements of Calculus."
- Note 5: It is required to select two combinations of subjects from the following to earn credits for them: "Experimental Methods and Laboratory Work in Physics I" and "Experimental Methods and Laboratory Work in Physics II"; "Experimental Methods and Laboratory Work in Chemistry I" and "Experimental Methods and Laboratory Work in Chemistry II"; and "Experimental Methods and Laboratory Work in Biology I" and "Experimental Methods and Laboratory Work in Biology II"; and "Experimental Methods and Laboratory Work in Biology II."

						Ye	ar in w	hich th	e subje	ect is tal	ken	
		Required			1 <sup>st</sup> g	rade	2 <sup>nd</sup> g	grade	3 <sup>rd</sup> g	rade	4 <sup>th</sup> g	rade
Туре	Subject type	No. of credits	Class subjects	No. of credits	Springs	Fall	Springs	Fall	Springs	Fall	Springs	Fall
			Introduction to Applied Biological Science I	2								
			Introduction to Microbiology	2								
			Introduction to Molecular Biochemistry	2								
			Agricultural Production	2								
			Resources Physics for Applied	2								
			<b>Biological Science</b>									
			Ethics of Science and Technology	2								
		24	Statistics in Biology	2								
			Environmental Sciences for Bioproduction	2								
			Laboratory Work in General Biology I	1								
			Laboratory Work in General Biology II	1								
			Laboratory Work in	1								
			General Chemistry									
			Laboratory Work in General Physics	1								

1			1		1			
Introduction to Applied	2							
Biological Science II								
Seminar in Field Science	2							
Research Front of	2							
Applied Biological								
Sciences								
Overseas Exercise of	2							
Applied Biological								
Science I								
Overseas Exercise of	2							
Applied Biological								
Science II								
Overseas Exercise of	1 2							
Applied Biological								
Science III								
Introduction to	2							
Physiology								
Public Health	2							
	Elective	Required S	Subject	s				
Tal		ts from abo						
(Redundant credits ove				-	ubject	s in Aj	oplied	
Biological Science Program)								
1			U					

							Yea	r in wl	hich tł	ne subj	ect is ta	ıken				
		Required				1 <sup>st</sup> g	rade			1st g	rade					
Туре	Subject type	No. of credits		Class subjects	No. of credits	Springs	Fall	Springs	Fall	Springs	Fall	Springs	Fall			
				ged subjects provided in overseas r university (Note1)	12											
			Specia	alized subjects packaged for each area	10											
			(Note	2)												
			Gradu	ate Thesis I	2											
			Gradu	ate Thesis II	2											
			Gradu	ate Thesis III	2											
			Gradu	2												
				-		30credits										
jects	jects			Global Environmental Issues and Managements	3											
d Sub	d Sub		ote3)	Modern Food Science	3											
alizeo	alizeo	56	p (N	Insect Science	3											
Specialized Subjects	Specialized Subjects		grou	Fish Production	3											
01	01		bject	Plankton Biology	3											
			sh su	Animal Science and Technology	3											
			Engli	Physiology of Field Crop Production	3											
			alized ]	Introduction Physiology of Domestic Animals	3											
			Specialized English subject group (Note3)	Molecular-level Understanding of Functionality of Foods	3											
				Resource Management	3											
				Elective Required S	Subjects		180	redits								
				Elective Subjects	8c	redits	(Note	47	)							

Total	124	
		(Note 7) It is not allowed to include liberal arts subjects and subjects in the teacher training courses.
		the requirement of 18 credits is accepted as a credit for elective subject.
		(Note 6) Any credit for a subject in the specialized English subjects group that is earned beyond
		as a credit for elective subject.
		(Note 5) Any credit for an elective required subject among specialized fundamental subjects is accepted
		credit for elective subject.
		(Note 4) Any credit for a specialized subject for the four other major programs is accepted as a
		end of December.
		more. Note that the classes of the subject are provided from the last 10 days of September to the
		the exercise class for foreign students in AIMS program and earn 18 credits for 6 subjects or
		(Note 3) For "Specialized English subject group," it is required to take 3 unit subjects that include
		groups consist of different subjects for each student.
		Agricultural and Life Science) according to the study plan prepared by the mentor. Subject
		Hydrosphere Science, Applied Animal & Plant Sciences, Food Science, and Molecular
		consists of subjects selected from core disciplines for each of the 4 major programs (Integrated
		(Note 2) "Specialized subjects packaged for each area" are composed as a subject group that
		to select a specific subject by themselves to earn the credit in the destination university.
		(Note 1) For the "Packaged subjects provided in overseas partner university," students are required

[Credits required for graduation] 124 credits (44 credits for liberal arts education subjects + 24 credits for specialized fundamental subjects + 56 credits for specialized subjects)

					evaluati	evaluati	Weighti ng for evaluati on item for the subject	ng for	evaluati		evaluati	ng for evaluati	evaluati	•	evaluati	•	Weighti ng for evaluati on item for the subject	•	evaluati	Weighti ng for evaluati on item	evaluati	Weighti ng for evaluati on item	
Liberal arts education subjects	Peace Science Courses	2	Required	1st semester	100	1																	100
Liberal arts education subjects	Introductory Seminar for First-Year Students	2	Required	1st semester	100	1																	100
Liberal arts education subjects	Introduction to University Education	2	Required	1st semester	100	1																	100
Liberal arts education subjects	Foreign Languages	11	Required / Elective required	1st - 4th semesters							60	1					40	1					100
Liberal arts education subjects	Information Courses	2	Required	1st semester1st semester1st semester							100	1											100
Liberal arts education subjects	Area Courses	9	Elective required	1st - 6th semesters	100	1																	100
Liberal arts education subjects	Health and Sports Courses	2		1st - 2nd semesters							100	1											100
Liberal arts education subjects	Basic Calculus or Elements of Calculus	2	Required	1st semester			100	1															100
Liberal arts education subjects	Organic Chemistry	2	Required	2nd semester			100	1															100
Liberal arts education subjects Liberal arts	Species Biology	2	Required	2nd semester			100	1															100
education subjects	Cell Scien008 EM< 3(</td <td>(ect)4(s</td> <td>s)]TJ ET</td> <td>EMC9601 Tr</td> <td>n [(ed)-</td> <td>1MC 2T</td> <td>4(i)4(o)6</td> <td>5(n)]TJ</td> <td>ET q</td> <td>34.56 1</td> <td>46.88 5</td> <td>1.72 25.3</td> <td>32 re W</td> <td>/n BT</td> <td>/TT0 1</td> <td>Tf 7.c</td> <td>738Tw 7</td> <td>.08 -0 0</td> <td>7.08 19</td> <td>4/TT0 1</td> <td>Tf -(4)</td> <td>)18( S)4(c</td> <td>i)(4)1 156.uired</td>	(ect)4(s	s)]TJ ET	EMC9601 Tr	n [(ed)-	1MC 2T	4(i)4(o)6	5(n)]TJ	ET q	34.56 1	46.88 5	1.72 25.3	32 re W	/n BT	/TT0 1	Tf 7.c	738Tw 7	.08 -0 0	7.08 19	4/TT0 1	Tf -(4)	)18( S)4(c	i)(4)1 156.uired

Liberal arts education subjects	"Experimental Methods and Laboratory Work in Physics I" and "Experimental Methods and Laboratory Work in Physics II"	2	Elective required	1st - 3rd semesters							100	1						100
Liberal arts education subjects	"Experimental Methods and Laboratory Work in Chemistry I" and "Experimental Methods and Laboratory Work in Chemistry II"	2	Elective required	1st - 3rd semesters							100	1						100
Liberal arts education subjectsLiberal arts education subjects	"Experimental Methods and Laboratory Work in Biology I" and "Experimental Methods and Laboratory Work in Biology II"	2	Elective required	1st - 3rd semesters							100	1						100
Specialized subjects	Introduction to Applied Biological Science I	2	Required	1st semester			100	1										100
Specialized subjects	Introduction to Microbiology	2	Required	1st semester			100	1										100
Specialized subjects	Introduction to Molecular Biochemistry	2	Required	2nd semester			100	1										100
Specialized subjects	Agricultural Production Resources	2	Required	2nd semester\			100	1										100
Specialized subjects	Physics for Applied Biological Science	2	Required	2nd semester			100	1										100
Specialized subjects	Ethics of Science and Technology	2	Required	2nd semester			100	1										100
Specialized subjects	Statistics in Biology	2	Required	3rd semester			100	1										100
Specialized subjects	Environmental Sciences for Bioproduction	2	Required	3rd semester			100	1										100
Specialized subjects	Laboratory Work in General Biology I	1	Required	3rd semester							100	1						100
Specialized subjects	Laboratory Work in General Biology II	1	Required	3rd semester							100	1						100
Specialized subjects	Laboratory Work in General Chemistry	1	Required	3rd semester							100	1						100
Specialized subjects	Laboratory Work in General Physics	1	Required	3rd semester							100	1						100
Specialized subjects	Introduction to Applied Biological Science II	2	Elective required	2nd semester			100	1										100
Specialized subjects	Seminar in Field Science	2	Elective required	2nd semester			100	1										100
Specialized subjects	Research Front of Applied Biological Sciences	2	Elective required	2nd semester	50	1									50	1		100

Specialized subjects	Overseas Exercise of Applied Biological Science I	2	Elective required	3rd semester		50	1							50	1					100
Specialized subjects	Overseas Exercise of Applied Biological Science II	2	Elective required	3rd semester		50	1							50	1					100
Specialized subjects	Overseas Exercise of Applied Biological Science III	1 - 2	Elective required	3rd semester		50	1							50	1					100
Specialized subjects	Introduction to Physiology	2	Elective required	3rd semester		100	1													100
Specialized subjects	Public Health	2	Elective required	6th semester		100	1													100
Specialized subjects	Global Environmental Issues and Managements	3	Elective required	4th semester				100	1											100
Specialized subjects	Modern Food Science	3	Elective required	4th semester				100	1											100
Specialized subjects	Insect Science	3	Elective required	4th semester				100	1											100
Specialized subjects	Fish Production	3	Elective required	4th semester				100	1											100
Specialized subjects	Plankton Biology	3	Elective required	4th semester				100	1											100
Specialized subjects	Animal Science and Technology	3	Elective required	4th semester				100	1											100
Specialized subjects	Physiology of Field Crop Production	3	Elective required	4th semester				100	1											100
Specialized subjects	Introduction physiology of Domestic Animals	3	Elective required	4th semester				100	1											100
Specialized subjects	Molecular-level Understanding of Functionality of Foods	3	Elective required	4th semester				100	1											100
Specialized subjects	Packaged subjects provided in overseas partner university	12	Required	4th, 6th, and 8th semesters										80	1			20	1	100
Specialized subjects	Specialized subjects packaged for each area	10	Required	5th - 8th semesters								100	1							100
Specialized subjects	Graduate Thesis I	2	Required	5th semester												20	1	80	1	100
Specialized subjects	Graduate Thesis II	2	Required	6th semester												20	1	80	1	100
Specialized subjects	Graduate Thesis III	2	Required	7th semester												20	1	80	1	100
Specialized subjects	Graduate Thesis IV	2	Required	8th semester												20	1	80	1	100

## Attachment 4

## Curriculum map for Applied Biological Science Program

ac	Study achievementStudy hievementStudy achievement	1st	year	2nd y	year	3rd	year	4th year						
	Evaluation items	1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester	7th semester	8th semester					
	Knowledge and understanding required to	Peace Science Courses()	Research Front of Applied Biological Sciences ()											
	see a phenomenon from a	Seminar for developing intelligence ( )												
	comprehensive and cross-	Introduction to University Education ( )												
		Area Courses subje	rea Courses subjects ( )											
		Basic Calculus / Elements of Calculus()	Organic Chemistry	Statistics in Biology ( )			Public Health()							
ding		General Chemistry ( )	Cell Science ( )	Environmental Sciences for Bioproduction ()										
erstan		Introduction to Applied Biological Science I()	Species Biology ( )											
je & und		Introduction to Microbiology ( )	Introduction to Molecular Biochemistry ( )	Introduction to Physiology ( )										
igKnowledg	Basic knowledge and		Agricultural Production Resources ( )	Overseas Exercise of Applied Biological Science I ( )										
nderstandir	understandings required for acquiring expertise		Physics for Applied Biological Science()	Overseas Exercise of Applied Biological Science II ( )										
wledge & u	Basic knowledge and understandings required for acquiring expertise		Introduction to Applied Biological Science II ( )	Overseas Exercise of Applied Biological Science III ( )										

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, jug	Ethics of Science	
- S	and Technology	
i		
2		
sta	Introduction to	
ere	Molecular	
& understandingKnc	Biochemistry ()	
5	Seminar in Field	
80	Science ( )	
စ် စ်		Global Environmental
e/		Issues and Managements
Knowledge		
ž		Modern Food Science ( )
		Insect Science ( )
		Insect Science ( )
		Fish Production ( )
Knowledge and		
understanding regarding		Plankton Biology ( )
applied biological sciences	s — — — — — — — — — — — — — — — — — — —	
		Animal Science and
		Technology ( )
		Physiology of Field Crop Production ( )
		Introduction physiology of
		Domestic Animals ( )
		Molecular-level
		Understanding of
		Functionality of Foods ( )

									1
Basic communicati	information processing, and	Foreign Languages	()()						
		Information							
		Courses ()							
1 ,		Health and Sports C							
			thods and Laboratory						
				Work in Chemistry I"					
		"Experimental Metho	ods and Laboratory V	Vork in Biology I" and					
				Laboratory Work in					
Basic experiment a	abilition			General Biology I &					
and skills required				II ( )					
				Laboratory Work in					
acquiring expertise	3			General Chemistry					
				( )					
<u>0</u>				Laboratory Work in					
ski				General Physics					
& skills				( )					
Atiling Intellectual ability a for research areas applied biological s						Spe	ecialized subjects par	ckaged for each area	( )
Intellectual ability a	Intellectual ability and skills								
for research areas	regarding								
·중 applied biological s	sciences								
Ability &				Overseas Exercise			Packaged subjects		Packaged subjects
Abi				of Applied	provided in		provided in		provided in
				<b>Biological Science I</b>	overseas partner		overseas partner		overseas partner
				( )	university ( )		university ()		university ( )
				<b>Overseas Exercise</b>					
Scientific English a	ability			of Applied					
required for reading				<b>Biological Science</b>					
specialized treatise				II ( )					
providing presentat				Overseas Exercise					
English				of Applied					
Linglion				Biological Science					
				III ( )					
			•						
		Foreign Languages	( ) ( )						
		i oreigir Lariguages							

	Ability to collect information related to peripheral disciplines to complement the knowledge regarding the		Research Front of Applied Biological Sciences ( )			Graduate Thesis I ( )	Graduate Thesis II ( )	Graduate Thesis III ( )	Graduate Thesis IV ( )
c a f	specialized area and consider issues regarding applied biological science from diversified points of								
/e capability	Ability to organize own ideas, demonstrate an apprehension based on those ideas, logically					Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()	Graduate Thesis IV ( )
mprehen	represent own conclusion orally or in writing, and exchange ideas in English regarding areas of applied				Packaged subjects provided in overseas partner university ( )		Packaged subjects provided in overseas partner university ( )		Packaged subjects provided in overseas partner university ( )
	biological sciences in which themes in integrated hyidrosphere science, applied animal & plant								
mol scie	science, food science, and molecular agricultural and life science are discussed from diverse points of view.								
		(Example)	Liberal arts subjects	Specialized fundame	Specialized subjects	Graduation thesis	() Required subject	( ) Elective require	( ) Elective subjects

List of Faculty Members of the Applied Biological Science Program

Name of	Name of program	Extension	Laboratory	Mail address
faculty	and position	number		
	Chief tutor			
	Chief of Integrated			
	Hydrosphere Science			
	Program			
	Chief of Applied			
	Animal & Plant			
	Sciences Program			
	Chief of Food			
	Science Program			
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