

For entrants in AY 2023

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How academic resu



Cluster 4 (Civil Engineering and Architecture

Required subject (period of registration specified)

Compulsory elective subject (any of these subjects shall be registered)

Free elective subject (any of these subjects shall be registered)

	Subject Type	Required No. of credits	Class subjects	No. of credits	Type of course registration	Registration Period													
						Spring				Fall				Spring					
						1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T		
L i b e r a l A r t s E d u c a t i o n S u b j e c t s	Peace Science Courses	2		2	Compulsory elective														
	Basic Courses in University Education	Introduction to University Education	2	Introduction to University Education	2	Required													
		Introductory Seminar for First-Year	2	Introductory Seminar for First-Year	2	Required													
		Advanced Seminar	0		1	Free elective													
	Area Courses		4	Courses in Arts and Humanities/Social Sc	2	Compulsory elective													
			4	Courses in Natural Sciences	2	Compulsory elective													
	Common Subjects	Basic English Usage	0	Basic English Usage I	1	Free elective													
			0	Basic English Usage II	1	Free elective													
		Foreign Languages English (Note 3)	Communication I	2	Communication I	1	Required												
				2	Communication I	1	Required												
		Foreign Languages	Communication	2	Communication II	1	Required												
				2	Communication II	1	Required												
		Initial Foreign Languages (Select one language from German, French, Spanish, Russian, Chinese, Korean and Arabic)		2	1 subjects from Basic language I	1	Compulsory elective												
				2	1 subjects from Basic language II	1	Compulsory elective												
		Information and Data Science Courses		2	Introduction to Information and Data Sciences	2	Required												
				2		1 or 2	Compulsory elective												
	Basic Subjects		2	Calculus I	2														
			2	Calculus II	2														
			2	Linear Algebra I	2														
			2	Linear Algebra II	2														
1			Seminar in Basic Mathematics I	1	Required														
1			Seminar in Basic Mathematics II	1	Required														
2			General Mechanics I	2															
2			General Mechanics II	2															
Experimental Methods and Laboratory Work in Physics I (Note 4)		1	Experimental Methods and Laboratory Work in Physics I (Note 4)	1															
		1	Experimental Methods and Laboratory Work in Physics II (Note 4)	1															
Free elective subjects	6	From all Subject Type	Note 5		Free elective														
No. of credits required for graduation		46																	

Note When students fail to acquire the credit during the term or semester marked with _____ in the boxes for the year in which the course is taken, they can take the course in subsequent terms or semesters. Depending on class subject, courses may be offered in semesters or terms different from those scheduled. Please be sure to check the time schedule for Liberal Arts Education subjects to be issued every year.

Note The credit obtained by mastery of "English-speaking Countries Field Research" or self-directed study of "Online Seminar in English A" cannot be counted towards the credit necessary for graduation. The credit obtained by Overseas Language Training can be recognized as Communication _____ or _____ if application is made in advance. For more details, please refer to the article on English in Liberal Arts Education in the student handbook.

Note We have a recognition of credit system for foreign language proficiency tests. For more details, please refer to the article on Foreign Language in Liberal Arts Education in the student handbook.

Note Students must take both Experimental Methods and Laboratory Work 1credit and Experimental Methods and Laboratory Work 1credit .

Required subjects
Compulsory Elective subject
Free elective subject

1T2T3T4T 1T2T3T4T 1T2T3T4T 1T2T3T4T

Reinforced Concrete Mechanics and Design / 6 Credits / 2 semesters / ETEMC / P / MCID 147546.32 / 326Tm16391.4 re5.8 nBT/TTQ Tw 6.0 @ 2.12 20.4 608.0 34T2.12 214T2148.0 3jF16B7C ET

4T2

Academic Achievements in Civil and Environmental Engineering

The Relationship between Evaluation Items and Evaluation Criteria

		Excellent	Very Good	Good
Knowledge and	(1) General culture and breadth of vision	Being able to see broadened and complicated society and natural environment multilaterally from cross-disciplinary point of views such as nature, culture and society.	Being able to see broadened and complicated society and natural environment multilaterally from cross-disciplinary point of views such as nature, culture and society.	To be able to consider a society and its natural environment from cross-disciplinary perspectives such as nature, the humanities, and community.
	(1) Ability to structuralize problems	Based on knowledge of mathematics or physics, to be able to structuralize technical problems by organizing the knowledge logically.	To be able to organize problems logically and explain them based on knowledge of mathematics or physics.	To be able to understand the relations between mathematical or physical equations and the problem.
	(2) Ability to analyze problems	By collecting necessary information, to be able to abstract and simulate technical problems and to be able to analyze them.	By collecting necessary information, to be able to abstract and simulate technical problems and to be able to analyze them.	By collecting necessary information, to be able to analyze technical problems.
	(1) Ability to discover problems	To be able to understand the relationship among nature, human beings and technology in international society regional society and to be able to find issues in them.	Being able to understand the relationship among nature, human beings and technology in international society and regions.	To be able to understand the relationships among nature, humans, and technology in regional society
	(2) Ability for evaluation	To be able to propose more than one solutions and predict the results of them and to be able to evaluate the solutions.	Being able to set a standard her/him self for evaluation and predict the result of proposed solutions	Being able to understand the criteria for evaluation on solutions.
	(3) Ability of communication	To be able to present the contents, reasonableness, effect, and feasibility of a proposed solution. To be able to handle the problem-solving process with the best use of available knowledge, understanding, ability and skills under the collaboration with others. To be able to improve ability to solve problems and ability to achieve, voluntarily and continuously.	To be able to present the contents and reasonableness of proposed solutions. To other people.	To be able to present the contents of proposed solutions.
	(4) Ability to achieve and ability to solve the problem	To be able to handle the problem-solving process with the best use of available knowledge, understanding, ability and skills under the collaboration with others.	To be able to handle the problem-solving process with the best use of available knowledge, understanding, ability and skills under the collaboration with others.	With the best use of available knowledge, understanding, abilities and skills to be able to handle the problem-solving process.

Placement of the Liberal Arts Education in the Major Program

Relationships between the evaluation items and class subjects

Subject type	Class subjects	credits	Type of course registration	Period	Evaluation items														Total weighted values of evaluation items in the subject
					Knowledge and Understanding		Abilities and Skills				Comprehensive Abilities								
					(1)		(1)		(2)		(1)		(2)		(3)		(4)		
					Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	
Liberal Arts Education	Introductory Seminar for First-Year Students	2	Required	1 semester	33	1					33	1			34	1			100
Liberal Arts Education	Peace Science Courses	2	Required	1 semester	50	1					50	1							100
Liberal Arts Education	Communication I	1	Required	1 semester	50	1								50	1				100
Liberal Arts Education	Communication I	1	Required	1 semester	50	1								50	1				100
Liberal Arts Education	Communication II	1	Required	1 semester	50	1								50	1				100
Liberal Arts Education	Communication II	1	Required	1 semester	50	1								50	1				100
Liberal Arts Education	Basic language I	1	Required	1 semester	50	1								50	1				100
Liberal Arts Education	Basic language II	1	Required	1 semester	50	1								50	1				100
Liberal Arts Education	Information and Data Science Courses	2	Required	1 semester										100	1				100
Liberal Arts Education	Area Courses	2	Elective	1 semester	100	1													100
Liberal Arts Education	Free elective subjects	6	Elective	1 semester	100	1													100
Liberal Arts Education	Health and Sports Courses	2	Required	1 semester	100	1													100
Liberal Arts Education	Calculus I	2	Required	1 semester					100	1									100
Liberal Arts Education	Calculus II	2	Required	1 semester					100	1									100
Liberal Arts Education	Linear Algebra I	2	Required	1 semester					100	1									100
Liberal Arts Education	Linear Algebra II	2	Required	1 semester					100	1									100
Liberal Arts Education	Seminar in Basic Mathematics I	1	Required	1 semester					100	1									100
Liberal Arts Education	Seminar in Basic Mathematics II	1	Required	1 semester					100	1									100
Liberal Arts Education	General Mechanics I	2	Required	1 semester					100	1									100
Liberal Arts Education	General Mechanics II	2	Required	1 semester					100	1									100
Liberal Arts Education	Experimental Methods and Laboratory Work in Physics I-II	1	Required	1 semester					100	1									100
Specialized Education	Creation of Architectural Space	2	Elective	1 semester	50	1					50	1							100
Specialized Education	Lifestyle and the city	2	Elective	1 semester	50	1					50	1							100
Specialized Education	Applied Mathematics I	2	Required	1 semester					100	1									100
Specialized Education	Applied Mathematics II	2	Elective	1 semester					100	1									100
Specialized Education	Applied Mathematics III	2	Elective	1 semester					100	1									100
Specialized Education	Engineering Mathematics A	2	Elective	1 semester					100	1									100
Specialized Education	Probability and Statistics	2	Elective	1 semester					100	1									100
Specialized Education	Synthesis of Applied Mathematics	2	Elective	1 semester					100	1									100
Specialized Education	Mathematics for Civil Engineering	2	Elective	1 semester					100	1									100
Specialized Education	Basic Engineering Computer Programming	2	Required	1 semester					33	1					33	1	34	1	100
Specialized Education	Introduction of Civil and Environmental Engineering	2	Required	1 semester			50	1			50	1							100
Specialized Education	Exercise of Technical English	1	Required	1 semester											100	1			100
Specialized Education	Strength of Materials	2	Required	1 semester			100	1											100
Specialized Education	Exercise of Strength of Materials	1	Elective	1 semester					100	1									100
Specialized Education	Structural Mechanics	2	Required	1 semester			100	1											100
Specialized Education	Exercise of Structural Mechanics	1	Elective	1 semester					100	1									100
Specialized Education	Hydraulics	2	Required	1 semester			100	1											100
Specialized Education	Exercise of Fluid Mechanics	1	Elective	1 semester					100	1									100
Specialized Education	Soil Mechanics	2	Required	1 semester			100	1											100
Specialized Education	Exercise of Soil Mechanics	1	Elective	1 semester					100	1									100
Specialized Education	Construction Materials	2	Required	1 semester			50	1			50	1							100
Specialized Education	Fluid Mechanics	2	Required	1 semester			100	1											100
Specialized Education	Concrete Engineering	2	Required	1 semester			50	1			50	1							100
Specialized Education	Environmental Chemistry for Atmosphere and Water	2	Required	1 semester			50	1			50	1							100
Specialized Education	Microbiology and Ecology for Engineering	2	Required	1 semester			50	1			50	1							100
Specialized Education	Infrastructure Planning	2	Required	1 semester			50	1			50	1							100
Specialized Education	Land Surveying and Exercise	2 3	Required	1 semester					40	1	15	1	15	1	15	1	15	1	100
Specialized Education	Applied Surveying and Advanced Measurement	2	Required	1 semester			50	1			50	1							100
Specialized Education	Experiments in Civil and Environmental Engineering	4	Required	1 semester			16	1	16	1	17	1	17	1	17	1	17	1	100
Specialized Education	Field Work at Construction Sites	1	Elective	1 semester							25	1	25	1	25	1	25	1	100
Specialized Education	Energy Methods for Structural Analysis	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Geotechnical Engineering	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Reinforced Concrete Mechanics and Exercises	4	Elective	1 semester			50	1	50	1									100
Specialized Education	Disaster Prevention and Mitigation	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Bridge and Earthquake-resistance	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Maintenance Engineering of Structures	2	Elective	1 semester							100	1							100
Specialized Education	Environmental Chemistry of Concrete	2	Elective	1 semester							100	1							100
Specialized Education	Environmental Hydraulics	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Transportation System Engineering	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Water and Wastewater Engineering and Exercises	4	Elective	1 semester			50	1	50	1									100
Specialized Education	Urban and Regional Engineering	2	Elective	1 semester			50	1	50	1									100
Specialized Education	River Engineering	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Coastal Engineering	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Fundamentals of Environmental Engineering	2	Elective	1 semester			50	1	50	1									100
Specialized Education	Hydrology and Water Resources Engineering	2	Elective	1 semester							100	1							100
Specialized Education	Exercises in Algorithms of Civil Engineering	2	Elective	1 semester					33	1					33	1	34	1	100
Specialized Education	Seminar in Civil and Environmental Engineering	4	Elective	1 semester			16	1	16	1	17	1	17	1	17	1	17	1	100

	1st Grade		2nd Grade		3rd Grade		4th Grade	
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
A General culture and breadth of vision	Introductory Seminar for First-Year Students Peace Science Courses Package Courses Area Courses Communication I Basic language I Health and Sports Courses	Peace Science Courses Package Courses Area Courses Communication II Basic language II Health and Sports Courses Lifestyle and the city Creation of Architectural Space	Area Courses Communication III	Area Courses Communication III				
B Ability to discover problems	Introductory Seminar for First-Year Students Peace Science Courses	Peace Science Courses Lifestyle and the city Creation of Architectural Space					Applied Surveying and Advanced Measurements	
C Ability to structuralize problems								
D Ability to analyze problems	Calculus I Linear Algebra I Mathematics Exercises General Mechanics I	Calculus II Linear Algebra II Mathematics Exercises II General Mechanics II Applied Mathematics I	Physics Experiments Applied Mathematics II Applied Mathematics III Probability and Statistics Mathematics of Civil Engineering		Applied Mathematics A			
Ability for education			Land Surveying and Exercise	Land Surveying and Exercise Basic Engineering Computer Programming	Applied Surveying and Advanced Measurements			
Ability of communication	Introductory Seminar for First-Year Students Communication I Second foreign language Information and Data Science Courses	Communication II Second foreign language	Communication III	Communication III	Technical English			
Ability to love and			Land Surveying and Exercise	Land Surveying and Exercise Basic Engineering Computer Programming				
							Project Management in Civil and Environmental Engineering	