



Cluster 1 Mechanical Systems, Transportation, Material and Energy

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)

Г					Described			Type of		ır in w	hich	the s		_	_			_			be registered) ns semester) Note 1		
	S	ubj	ect ty	pe	Required No. of	Class subjects ate No. of course				1st grade 2nd grade Spring Fall Spring Fall						e	3	rd g	rad	4th grade			
		J			credits	J	credits	ion													Spring 1T 2T		
	Pea	ce S	cience	Courses	2		2	Required															
	Basic Courses in University Education		oductio versity	n to Education	2	Introduction to University Education	2	Compuls ory elective															
	Basic Course in Universit Education			ry Seminar ear Students	2	Introductory Seminar for First-Year Students	2	Compuls ory elective															
		Aro	a Cour	reae	4	Courses in Arts and Humanities/Social Sc	2	Compuls ory elective															
		Ale	a Cour	ses	4	Courses in Natural Sciences	2	Compuls ory elective															
				Basic	2	Basic English UsageI	1	D															
				English Usage	۷	Basic English UsageII	1	Required															
	ects	ages	Engli sh	Communica	2	CommunicationI	1	D															
	Subj	angn	(Note 2 3)	tion I	۷	Communication I	1	Required															
	Common Subjects	Foreign Languages		Communica	2	Communication II	1	Danningd															
	Con	Fore		tion II	۷	Communication II	1	Required															
jects			(Select or	reign Languages ne language from French, Spanish,	2	1 subjects from Basic language I	1	Compuls ory															
dnS t				Chinese, Korean,	٤	1 subjects from Basic language II	1	elective															
acation		Inform	ation and I	Data Science Courses	2	Elements of Information Literacy or Exercise in Information Literacy	2	Compuls ory elective															
Arts Education Subjects		Heal	th and S	Sports Courses	2		1or2	Compuls ory elective															
						CalculusI	2																
Liberal						CalculusII	2																
						Linear AlgebraI	2																
						Linear AlgebraII	2																
						Seminar in Basic Mathem	1																
					18	Seminar in Basic Mathem	1	Required															
		Bas	ic Subj	ects		General Mechanics I	2																
			Ü			General Mechanics II	2																
						Basic Electromagnetism	2																
						Experimental Methods and Laboratory Work in Physics I Note	1																
						Experimental Methods and Laboratory Work in Physics II Note	1																
						General Chemistry	2	Compuls	_														
					2	Experimental Methods and Laboratory Work in Chemistry I Note	1	ory elective	-														
	No of cre	dits r	hariune	for graduation	46	Experimental Methods and Laboratory Work in Chemistry II Note	1																
	. 10. 01 016	a165 I	equireu	Si addacioni	40																		

- Note 1 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

 Note 2 The credit obtained by mastery of "English-speaking Countries Field Research" or self-directed study of "Online Seminar in English A B" 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 3 We have a recognition of credit system for foreign language proficiency tests. For more details, please refer to the article on English in Liberal Arts
- $Education\ in\ the\ student\ handbook.$
- Note 4 Students must take both Experimental Methods and Laboratory Work 1credit and Experimental Methods and Laboratory Work 1credit .

Cluster 1 Basic Specialized Subjects

Required subject Compulsory elective subject Free elective subject

				Type of	course ration	e							ass							-			
		its	ical Systems Engineering		Materials Processing	y Transform Engineering	1	st g	rad	le	2	nd g	grad	le	3	rd g	grad	le	4th grade				
	Class Subjects	Credits	Mechanical Systems Engineering	Transportation Systems	ials Pro	Energy Transform Engineering	Spr	ring	F	all	Spi	ring	Fa	ıll	Spi	ring	F	all	Spi	ring	F	all	Note
			Mech	١	Mater	Ene	1T	2T	3Т	4T	1T	2T	3Т	4T	1T	2T	3Т	4T	1T	2T	3Т	4T	
	Applied Mathematics I	2							4														
	Applied Mathematics II	2									4												
	Applied Mathematics III	2											4										
	Engineering Mathematics A	2													4								
	Engineering Mathematics C	2												4									
group	Probability and Statistics	2									4												
1st g	Synthesis of Applied Mathematics	2															4						
	Practice of Mechanics	1							4														
	Engineering Mechanics	2								4													
	Introduction of Mechanical and Transportation Engineering	2							4														
	Technical English	1									4												
	Basic Engineering Computer Programming	2										4											
	Mechanics of Material I	2									4												
	Thermodynamics I	2									4												
	Fluid Dynamics I	2										4											
	Control Engineering I	2										4											
group	An Introduction to Engineering Materials	2									4												
	Fundamentals of Materials Processing	2										4											
2nd	Computer Programming	2														4							
	Machine Design and Drawing	1							3	3													
	Computer Aided Design	1									3	3											
	Machine Shop Training (a)	1							3	3													
	Machine Shop Training (b)	1									3	3											

Students can select either Machine Shop Training (a) or Machine Shop Training (b)

Required subject Compulsory elective subject Free elective subject

1T 2T 3T 4T 1T 2T 3T 4T 1T 2T 3T 4T 1T 2T 3T 4T

Dynamics of Vibrations I	2	4
Experiments in Mechanical Engineering I $$	1	3 3
Experiments in Mechanical Engineering II	1	3 3
Mechanical Engineering Design and Production	1	3 3
Mechanical Materials I	2	4
Mechanical Materials II	2	4
Fracture Mechanics	2	4
Fusion and Solidification Processings I $$	2	4
Plastic Working and Powder Metallurgy II	2	4
Materials Science	2	4
Machining	2	4
Elementary Electromagnetism	2	4
Introduction to Quantum Physics	2	

Sheet

Academic Achievements in Educational Program for Materials and Processing The Relationship between Evaluation Items and Evaluation Criteria

		Academic Achievements		Evaluation Criteria	
		Evaluation Items	Excellent	Very Good	Good
Knowledge and Understanding	(1)	To develop the ability to work positively and independently on the development of local societies, international society, and business and industries.	To be able to be sufficiently engaged in the development of local societies, international society, and business and industry.	To be able to be engaged in the development of local societies, international society, and business and industry at the standard level.	To be able to be engaged in the development of local societies, international society, and business and industry at the minimum level.
Knowledge Understand	(2)	Acquiring necessary basic knowledge for an engineer and developing the ability to consider logically.	Acquiring necessary basic knowledge for an engineer and being able to sufficiently and logically consider it.	Acquiring necessary basic knowledge for an engineer and being able to logically consider it at the standard level.	Acquiring necessary basic knowledge for an engineer and being able to logically consider it at the minimum level.
lities and Skills	(1)	Acquiring basis of mechanical system, material creation and processing engineering steadily, and being able to apply	Acquiring basis of mechanical system, material creation and processing engineering steadily, and being able to apply it	engineering steadily, and being able to apply	Acquiring basis of mechanical system, material creation and processing engineering steadily, and being able to apply it at the minimum level.
Abilities Skills		Developing the ability of solving the technological issues with flexible ideas and creativity.	Based on flexible ideas and creativity, to be able to sufficiently solve problems related to engineering.		Based on flexible ideas and creativity, to be able to independently solve problems related to engineering at the minimum level.
Overall Abilities	(1)	Cultivating abilities of communication and of internationally collecting information and releasing it	To be able to communicate sufficiently with others, collect and release information internationally.	To be able to communicate with others, collect and release information internationally at the standard level	To be able to communicate with others, collect and release information internationally at the minimum level.

Placement of the Liberal Arts Education in the Major Program

We aim to cultivate a well-rounded character, backed up by a broad range of basic knowledge and an understanding of global environmental issues and problems in the social environment. Furthermore, we aim to cultivate the ability to consider ways to solve problems in the context of the multifaceted relations between people and society, and between nature and engineering. To that end, the following are offered: (1) The acquisition of the necessary abilities and attitudes to see various social issues multilaterally and to understand the complete picture (2) The acquisition of a broader perspective after being exposed to fields outside of one's area of expertise (3) Through sports, the acquisition of knowledge of health and physical strength that form basis of human living (4) The cultivation of the ability to understand the position of machine system engineers and material creating/processing engineers in society, and to solve ethical problems

					I			F	Evaluati	ion item	15				
					Knowle	edge and	Unders			oilities a		lls	Comprehen	sive Abilities	Total
			Type of			1)		2)	,	1)		2)		1)	weighted
Subject type	Class subjects	credits	course	Period	Weighted		Weighted		Weighted		Weighted		Weighted		values of
Subject type	Class subjects	creares	registratio n		values of evaluation	Weightsed values of			evaluation						
					items in	evaluation	items in	evaluation	items in the subject						
					the subject	items	the subject	items	the subject	items	the subject	items	the subject	items	J
Liberal Arts Education	Introduction to University Education	2	Required	1semsester-1T	100	1	Ť		Ť						
Liberal Arts Education	Introductory Seminar for First-Year Students	2	Required	1semsester	100	-					50	1	50	1	100
	•				100						30	1	30	1	
Liberal Arts Education	Peace Science Courses	2	Elective	1semsester-2T	100	1			-						100
Liberal Arts Education	Area Courses Courses in Arts and Humanities/Social Sc	4	Elective	1,2,3,4semsester	100	1									100
Liberal Arts Education	Area Courses Courses in Natural Sciences	4	Elective	1,2,3,4semsester	100	1									100
Liberal Arts Education	Basic English UsageI	1	Required	1semsester									100	1	100
Liberal Arts Education	Basic English UsageII	1	Required	2semsester									100	1	100
Liberal Arts Education	CommunicationI	1	Required	1semsester									100	1	100
Liberal Arts Education	Communication I	1	Required	1semsester									100	1	100
Liberal Arts Education	Communication II	1	Required	2semsester									100	1	100
Liberal Arts Education	Communication II	1	Required	2semsester									100	1	100
Liberal Arts Education	Basic language I	1	Elective	1semsester-1T									100	1	100
Liberal Arts Education	Basic languageII	1	Elective	1semsester-2T									100	1	100
Liberal Arts Education	Elements of Information Literacy or Exercise in Information Literacy	2	Required	1semsester			100	1					100		100
	Health and Court C				100	1	100	1							
Liberal Arts Education	Health and Sports Courses	2	Elective	1,2semsester	100	1			-						100
Liberal Arts Education	CalculusI	2	Required	1semsester			100	1							100
Liberal Arts Education	CalculusII	2	Required	2semsester			100	1							100
Liberal Arts Education	Linear AlgebraI	2	Required	1semsester			100	1							100
Liberal Arts Education	Linear AlgebraII	2	Required	2semsester			100	1							100
Liberal Arts Education	Seminar in Basic Mathematics I	1	Required	1semsester			100	1							100
Liberal Arts Education	Seminar in Basic Mathematics II	1	Required	2semsester			100	1							100
Liberal Arts Education	General Mechanics I	2	Required	1semsester			100	1							100
Liberal Arts Education	General Mechanics II	2	Required	2semsester			100	1							100
Liberal Arts Education	Basic Electromagnetism	2	Required	3semsester			100	1							100
	Basic Electromagnetism		_				1	1							
Liberal Arts Education	Experimental Methods and Laboratory Work in Physics I	2	Required	2semsester			100	1							100
Liberal Arts Education	General Chemistry	2	Elective	3semsester			100	1							100
Liberal Arts Education	Experimental Methods and Laboratory Work in Chemistry I	2	Elective	2semsester			100	1							100
Specialized Education	Applied Mathematics I	2	Required	2semsester					100	1					100
Specialized Education	Applied Mathematics II	2	Required	3semsester					100	1					100
Specialized Education	Applied Mathematics III	2	Required	4semsester					100	1					100
Specialized Education	Engineering Mathematics A	2	Elective	5semsester					100	1					100
Specialized Education	Engineering Mathematics C	2	Elective	4semsester					100	1					100
Specialized Education	Probability and Statistics	2	Required	3semsester					100	1					100
Specialized Education	Synthesis of Applied Mathematics	2	Elective	6semsester					100	1					100
Specialized Education	Practice of Mechanics	1	Elective	2semsester					100	1					100
Specialized Education	Engineering Mechanics	2	Elective	2semsester					100	1					100
Specialized Education	Introduction of Mechanical and Transportation Engineering	2	Required	2semsester					100	1					100
Specialized Education	Technical English	1	Required	3semsester					100	1					100
Specialized Education	Basic Engineering Computer Programming	2	Required	3semsester			100	1							100
Specialized Education	Mechanics of Material I	2	Required	3semsester					100	1					100
Specialized Education	Dynamics of Vibrations I	2	Required	4semsester					100	1					100
Specialized Education	Thermodynamics I	2	Required	3semsester-1T					100	1					100
Specialized Education	Fluid Dynamics I	2	Required	3semsester					100	1					100
Specialized Education	Control Engineering I	2	Required	3semsester					100	1					100
Specialized Education	An Introduction to Engineering Materials	2	Required	3semsester					100	1					100
Specialized Education	Fundamentals of Materials Processing	2	Required	3semsester					100	1					100
Specialized Education	Computer Programming	2	Required	5semsester			100	1							100
Specialized Education	Experiments in Mechanical Engineering I	1	Required	5semsester							80	1	20	1	100
Specialized Education	Experiments in Mechanical Engineering II	1	Required	6semsester							80	1	20	1	100
Specialized Education	Mechanical Engineering Design and Production	1	Required	6semsester							100	1			100
Specialized Education	Machine Design and Drawing	1	Required	2semsester					100	1					100
Specialized Education	Computer Aided Design	1	Required	3semsester							100	1			100
Specialized Education	Machine Shop Training (a)	1	Required	2semsester							100	1			100
,	July Training (a)		required	250HI5CSTEI	<u> </u>		<u> </u>		<u> </u>		100	1	<u> </u>		100

Subject type	
Subject type Class subjects	Total
Subject type Class subjects class subjects of the commentary of th	weighted
Description	values of evaluation items in the
Specialized Education Nechanical Materials I 2 Required Semissester 100 1	subject
Specialne Education Fracture Mechanics Specialne Education Fracture Mechanics 2 Required 6 Semisester 1000 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100
Specialized Education Practure Mechanics 2 Required Seemsester 1000 1 Specialized Education Processing 2 Required Seemsester 1000 1 Specialized Education Processing 2 Elective Seemsester 1000 1 Specialized Education Processing 2 Elective Seemsester 1000 1 Specialized Education Processing Processing Specialized Education Processing Processing Specialized Education Processing Processing Processing Specialized Education Processing Processing Processing Specialized Education Processi	100
Specialized Education Process and Substitution and Processings 2 Required Seemsester 100 1	100
Specialized Education Nature Wasting of Front Mandaugh 2 Elective Seemsester 100 1	100
Specialized Education Machining Required Semistant Education Machining Required Semistant Education Machining Repetitive Education Reptitive Education Repetitive Education Repetitive Education Repet	100
Specialized Education	100
Specialized Education	100
Specialized Education Introduction to Quantum Physics 2 Elective 4semsester 100 1 1 100 1 1 100 1 1	100
Specialized Education Introduction to chemical physics 2 Elective 4semsester	100
Specialized Education Fluid Dynamics II 2 Elective 4semsester-4T	100
Specialized Education Thermodynamics II 2 Elective 4semsester 4T 100 1	100
Specialized Education Heat Transfer I 2 Required 4semsester 3T	100
Specialized Education Fleat Transfer II 2 Elective 5 semsester	100
Specialized Education Combustion Engineering Fundamentals 2 Elective 6semsester 100 1	100
Specialized Education Internal Combustion Engines 2 Elective 6semsester 100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100
Specialized Education Plasma Engineering 2 Elective 5semsester 100 1 1	100
Specialized Education Data Processing and Numerical Analysis 2 Elective 4semsester 100 1 1 1 1 1 1 1 1	100
Specialized Education Theory of Elasticity and Plasticity 2 Required 5semsester 100 1 1	100
Specialized Education Mechanics of Materials II 2 Elective 4semsester 100 1 1 1 1 1 1 1 1	100
Specialized Education Mechanics of Materials II 2 Elective 4semsester 100 1 1	100
Specialized Education Mechanism and Kinematics 2 Elective 4semsester 100 1 1	100
Specialized Education Dynamics of Vibrations II 2 Elective 5 semsester 100 1 1	100
Specialized Education Control Engineering II 2 Elective 4semsester 100 1 1	100
Specialized Education Electrical and Electronic Engineering 2 Elective 5 semsester 100 1 Sepecialized Education Mechatronics 2 Elective 6 semsester 100 1 Sepecialized Education Instrumentation Engineering 2 Elective 4 semsester 100 1 Sepecialized Education Optical Measurement Techniques 2 Elective 6 semsester 100 1 Sepecialized Education Mechanical System Control 2 Elective 5 semsester 100 1 Sepecialized Education Data Structure and Algorithm 2 Elective 6 semsester 100 1 Sepecialized Education Data Structure and Algorithm 2 Elective 6 semsester 100 1 Semsester 100 1 Sepecialized Education Data Structure and Algorithm 2 Elective 6 semsester 100 1	100
Specialized Education Mechatronics 2 Elective 6semsester 100 1 Specialized Education Instrumentation Engineering 2 Elective 4semsester 100 1 Specialized Education Optical Measurement Techniques 2 Elective 6semsester 100 1 Specialized Education Mechanical System Control 2 Elective 5semsester 100 1 Specialized Education Data Structure and Algorithm 2 Elective 6semsester 100 1	100
Specialized Education Instrumentation Engineering 2 Elective 4semsester 100 1 Specialized Education Optical Measurement Techniques 2 Elective 6semsester 100 1 Specialized Education Mechanical System Control 2 Elective 5semsester 100 1 Specialized Education Data Structure and Algorithm 2 Elective 6semsester 100 1	100
Specialized Education Optical Measurement Techniques 2 Elective 6semsester 100 1 Specialized Education Mechanical System Control 2 Elective 5semsester 100 1 Specialized Education Data Structure and Algorithm 2 Elective 6semsester 100 1	100
Specialized Education Mechanical System Control 2 Elective 5semsester 100 1 Specialized Education Data Structure and Algorithm 2 Elective 6semsester 100 1	100
Specialized Education Data Structure and Algorithm 2 Elective 6semsester 100 1	100
	100
Specialized Education Manufacturing System 9 Flactive Segmenter 100 1	100
Premium of the state of the sta	100
Specialized Education Machine Elements Design I 2 Elective 4semsester 100 1	100
Specialized Education Machine Elements Design II 2 Elective 5semsester 100 1	100
Specialized Education Machine Design 2 Elective 6semsester 100 1	100
Specialized Education Systems Engineering 2 Elective 4semsester 50 1 50 1	100
Specialized Education Reliability Engineering 2 Elective 5semsester 10 1 90 1	100
Specialized Education Transportation 2 Elective 4semsester 100 1	100
Specialized Education Internship 1 Elective 6semsester 40 1 30 1 30 1	100
Specialized Education Graduation Thesis 5 Required 7,8semsester 55 1 45 1	100

Sheet

Spring	Fall	Spring	Fall	Spring	Fall
roduction to University Education	Area Courses	Area Courses	Area Courses	Reliability Engineering	Internship
e Science Courses	Health and Sports Courses				
rea Courses					
ealth and Sports Courses					
xercise in Information Literacy	CalculusII	Basic Electromagnetism		Computer Programming	
lements of Information Literacy	Linear AlgebraII	General Chemistry			
CalculusI	Seminar in Basic Mathematics II	Basic Engineering Computer Programming			
inear AlgebraI	General Mechanics II				
minar in Basic Mathematics I	Experimental Methods and Laboratory Work in Physics I ()				
eneral Mechanics I	Experimental Methods and Laboratory Work in Chemistry I ()				
	Applied Mathematics I	Applied Mathematics II	Applied Mathematics III	Engineering Mathematics A	Synthesis of Applied Mathematics
	Practice of Mechanics	Probability and Statistics	Engineering Mathematics C	Mechanical Materials I	Mechanical Materials II
	Engineering Mechanics	Mechanics of Material I	Dynamics of Vibrations I	Fusion and Solidification Processings I	Fracture Mechanics
	Introduction of Mechanical and Transportation Engineering	Thermodynamics I	Materials Science	Machining	