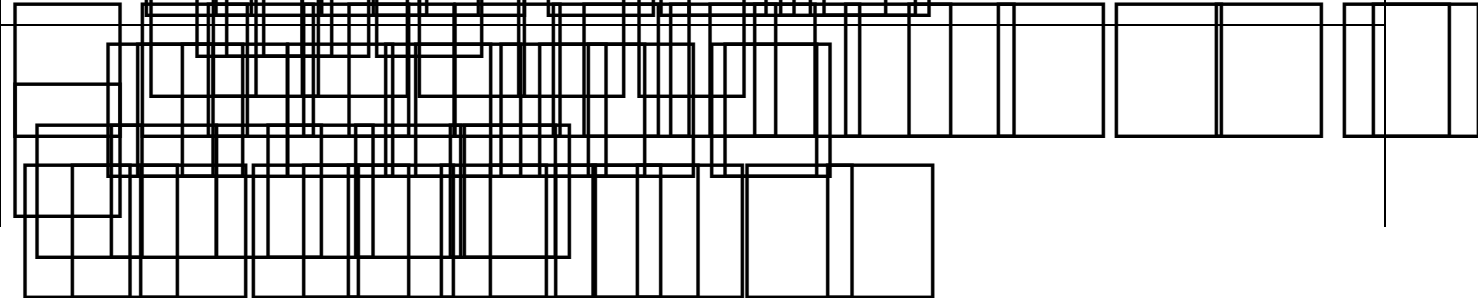


When to start the Program

Credit Requirements



Cluster 1 Basic Specialized Subjects

Required subject
Compulsory elective subject
Free elective subject

	Class Subjects	Credits	Type of course registration				Class Hours/Week												Note					
			Mechanical Systems Engineering	Transportation Systems	Materials Processing	Energy Transform Engineering	1st grade				2nd grade				3rd grade					4th grade				
							Spring		Fall		Spring		Fall		Spring		Fall			Spring		Fall		
							1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T		1T	2T	3T	4T	
1st group	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											
	Probability and Statistics	2								4														
	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														
2nd group	Mechanics of Material I	2									4													
	Thermodynamics I	2									4													
	Fluid Dynamics I	2										4												
	Control Engineering I	2										4												
	An Introduction to Engineering Materials	2									4													
	Fundamentals of Materials Processing	2										4												
	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)

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.
	(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.
Abilities 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	Acquiring basis of mechanical system, material creation and processing engineering steadily, and being able to apply it at the standard level.	Acquiring basis of mechanical system, material creation and processing engineering steadily, and being able to apply it at the minimum level.
	(2) 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 to the standard level.	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

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)		(2)		(1)		(2)		(1)		
					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	Introduction to University Education	2	Required	1semester-1T	100	1									
Liberal Arts Education	Introductory Seminar for First-Year Students	2	Required	1semester							50	1	50	1	100
Liberal Arts Education	Peace Science Courses	2	Elective	1semester-2T	100	1									100
Liberal Arts Education	Area Courses: Courses in Arts and Humanities/Social Sc	4	Elective	1,2,3,4semester	100	1									100
Liberal Arts Education	Area Courses: Courses in Natural Sciences	4	Elective	1,2,3,4semester	100	1									100
Liberal Arts Education	Basic English UsageI	1	Required	1semester									100	1	100
Liberal Arts Education	Basic English UsageII	1	Required	2semester									100	1	100
Liberal Arts Education	CommunicationI	1	Required	1semester									100	1	100
Liberal Arts Education	Communication I	1	Required	1semester									100	1	100
Liberal Arts Education	Communication II	1	Required	2semester									100	1	100
Liberal Arts Education	Communication II	1	Required	2semester									100	1	100
Liberal Arts Education	Basic language I	1	Elective	1semester-1T									100	1	100
Liberal Arts Education	Basic languageII	1	Elective	1semester-2T									100	1	100
Liberal Arts Education	Services of Librarianship Library or Service in Information Library	2	Required	1semester			100	1							100
Liberal Arts Education	Health and Sports Courses	2	Elective	1,2semester	100	1									100
Liberal Arts Education	CalculusI	2	Required	1semester			100	1							100
Liberal Arts Education	CalculusII	2	Required	2semester			100	1							100
Liberal Arts Education	Linear AlgebraI	2	Required	1semester			100	1							100
Liberal Arts Education	Linear AlgebraII	2	Required	2semester			100	1							100
Liberal Arts Education	Seminar in Basic Mathematics I	1	Required	1semester			100	1							100
Liberal Arts Education	Seminar in Basic Mathematics II	1	Required	2semester			100	1							100
Liberal Arts Education	General Mechanics I	2	Required	1semester			100	1							100
Liberal Arts Education	General Mechanics II	2	Required	2semester			100	1							100
Liberal Arts Education	Basic Electromagnetism	2	Required	3semester			100	1							100
Liberal Arts Education	Experimental Methods and Laboratory Work in Physics I	2	Required	2semester			100	1							100
Liberal Arts Education	General Chemistry	2	Elective	3semester			100	1							100
Liberal Arts Education	Experimental Methods and Laboratory Work in Chemistry I	2	Elective	2semester			100	1							100
Specialized Education	Applied Mathematics I	2	Required	2semester					100	1					100
Specialized Education	Applied Mathematics II	2	Required	3semester					100	1					100
Specialized Education	Applied Mathematics III	2	Required	4semester					100	1					100
Specialized Education	Engineering Mathematics A	2	Elective	5semester					100	1					100
Specialized Education	Engineering Mathematics C	2	Elective	4semester					100	1					100
Specialized Education	Probability and Statistics	2	Required	3semester					100	1					100
Specialized Education	Synthesis of Applied Mathematics	2	Elective	6semester					100	1					100
Specialized Education	Practice of Mechanics	1	Elective	2semester					100	1					100
Specialized Education	Engineering Mechanics	2	Elective	2semester					100	1					100
Specialized Education	Introduction of Mechanical and Transportation Engineering	2	Required	2semester					100	1					100
Specialized Education	Technical English	1	Required	3semester					100	1					100
Specialized Education	Basic Engineering Computer Programming	2	Required	3semester			100	1							100
Specialized Education	Mechanics of Material I	2	Required	3semester					100	1					100
Specialized Education	Dynamics of Vibrations I	2	Required	4semester					100	1					100
Specialized Education	Thermodynamics I	2	Required	3semester-1T					100	1					100
Specialized Education	Fluid Dynamics I	2	Required	3semester					100	1					100
Specialized Education	Control Engineering I	2	Required	3semester					100	1					100
Specialized Education	An Introduction to Engineering Materials	2	Required	3semester					100	1					100
Specialized Education	Fundamentals of Materials Processing	2	Required	3semester					100	1					100
Specialized Education	Computer Programming	2	Required	5semester			100	1							100
Specialized Education	Experiments in Mechanical Engineering I	1	Required	5semester							80	1	20	1	100
Specialized Education	Experiments in Mechanical Engineering II	1	Required	6semester							80	1	20	1	100
Specialized Education	Mechanical Engineering Design and Production	1	Required	6semester							100	1			100
Specialized Education	Machine Design and Drawing	1	Required	2semester					100	1					100
Specialized Education	Computer Aided Design	1	Required	3semester							100	1			100
Specialized Education	Machine Shop Training (a)	1	Required	2semester							100	1			100

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)		(2)		(1)		(2)		(1)		
					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
Specialized Education	Machine Shop Training (b)	1	Required	3semester							100	1			100
Specialized Education	Mechanical Materials I	2	Required	5semester					100	1					100
Specialized Education	Mechanical Materials II	2	Elective	6semester					100	1					100
Specialized Education	Fracture Mechanics	2	Required	6semester					100	1					100
Specialized Education	Fusion and Solidification Processings I	2	Required	5semester					100	1					100
Specialized Education	Plastic Working and Powder Metallurgy II	2	Elective	6semester					100	1					100
Specialized Education	Materials Science	2	Required	4semester					100	1					100
Specialized Education	Machining	2	Required	5semester					100	1					100
Specialized Education	Elementary Electromagnetism	2	Elective	4semester					100	1					100
Specialized Education	Introduction to Quantum Physics	2	Elective	4semester					100	1					100
Specialized Education	Introduction to chemical physics	2	Elective	5semester					100	1					100
Specialized Education	Fluid Dynamics II	2	Elective	4semester-4T					100	1					100
Specialized Education	Thermodynamics II	2	Elective	4semester-4T					100	1					100
Specialized Education	Heat Transfer I	2	Required	4semester-3T					100	1					100
Specialized Education	Heat Transfer II	2	Elective	5semester					100	1					100
Specialized Education	Combustion Engineering Fundamentals	2	Elective	5semester					100	1					100
Specialized Education	Internal Combustion Engines	2	Elective	6semester					100	1					100
Specialized Education	Plasma Engineering	2	Elective	5semester					100	1					100
Specialized Education	Data Processing and Numerical Analysis	2	Elective	4semester					100	1					100
Specialized Education	Theory of Elasticity and Plasticity	2	Required	5semester					100	1					100
Specialized Education	Computational Solid Mechanics	2	Elective	6semester					100	1					100
Specialized Education	Mechanics of Materials II	2	Elective	4semester					100	1					100
Specialized Education	Mechanism and Kinematics	2	Elective	4semester					100	1					100
Specialized Education	Dynamics of Vibrations II	2	Elective	5semester					100	1					100
Specialized Education	Control Engineering II	2	Elective	4semester					100	1					100
Specialized Education	Electrical and Electronic Engineering	2	Elective	5semester					100	1					100
Specialized Education	Mechatronics	2	Elective	6semester					100	1					100
Specialized Education	Instrumentation Engineering	2	Elective	4semester					100	1					100
Specialized Education	Optical Measurement Techniques	2	Elective	6semester					100	1					100
Specialized Education	Mechanical System Control	2	Elective	5semester					100	1					100
Specialized Education	Data Structure and Algorithm	2	Elective	6semester					100	1					100
Specialized Education	Manufacturing System	2	Elective	5semester					100	1					100
Specialized Education	Machine Elements Design I	2	Elective	4semester					100	1					100
Specialized Education	Machine Elements Design II	2	Elective	5semester					100	1					100
Specialized Education	Machine Design	2	Elective	6semester					100	1					100
Specialized Education	Systems Engineering	2	Elective	4semester					50	1	50	1			100
Specialized Education	Reliability Engineering	2	Elective	5semester	10	1			90	1					100
Specialized Education	Transportation	2	Elective	4semester					100	1					100
Specialized Education	Internship	1	Elective	6semester	40	1					30	1	30	1	100
Specialized Education	Graduation Thesis	5	Required	7,8semester							55	1	45	1	100

Curriculum Map of Materials Processing

Sheet

