Appended Form 1

Specifications for Major Program

Name of School (Program) [School of Engineering Cluster 1(Mechanical Systems, Transportation, Material and

	Energy)]								
Program name (Japanese)	材料加工プログラム								
(English)	Program of Material Processing								
1.Academic degree to be Acquired : Bachelor's degree in Engineering									

2. Overview

The Program of Material Processing in Cluster 1 aims at nurturing engineers and researchers who, having a broader perspective on human-machine relations such as general machinery, automobiles, electrical machinery, information communication, heavy industry, chemical industry, etc., energy, and environmental issues, are able to assume cutting-edge design and development roles in production engineering. In order for students to develop their perspectives in other related fields, while also gaining in-depth expertise, the program will be run not only by specialists from the closely-related Materials and Processing Program, but also by specialists from the other three programs in Cluster 1, as well as by highly-skilled technical personnel from the Phoenix Workshop.

In particular, this program helps students acquire basic knowledge as mechanical engineers through the learning of basic mechanical subjects, drafting and design, and machine shop training at the Phoenix Workshop. Also, this program offers such materials-related specialized subjects as machine materials and materials science; specialized subjects related to the deformation and destruction of materials, such as material strength and elastic-plastic engineering; and specialized subjects that deal with the technology of forming processes, such as forming processes and machine processes. The program provides students with highly specialized education in the design, development, and use of functional materials, and in the principles of production and processing. Students are assigned to this program in the second semester of the second year. Then, in the first semester of the fourth year, students are assigned to their respective research laboratories, choose their research topics, and write up their graduation theses. Around sixty percent of graduates from this program will advance to graduate school. Graduates are employed in the general machinery and automotive fields, as well as in electronics, information & communications, heavy industry, the chemical industry, and a broad range of other industries. Centering on manufacturers in the f

4. Curriculum Policy (Policy for Preparing & Implementing Curriculum)

The Program of Material Processing offers not only machine-related basic education, but also specialized education concerning the design and development of new functional materials and utilization technology, as well as the principles of production and processing, and their the application.

To ensure that students are able to achieve the goals of the program, the program develops and puts into practice a curriculum based on the following policy:

• In the first year, the students take Liberal Arts Education subjects such as Peace Science Courses, Basic Courses in University Education, common subjects, and Foundation Courses, as well as specialized basic subjects and specialized practical education, such as machine shop training.

• In the first semester of the second year, specialized basic subjects such as ""Mechanics of Materials I" and "Fluid Dynamics I" become major subjects. In the second semester of the second year, the students are assigned to this program. As a result, specialized subjects in accordance with the program become major subjects to be taken.

• In the third year, specialized subjects tailored to the program continue to become major subjects to be taken.

• In the fourth year, the students are assigned to their respective research laboratories, choose their research topics, and write their graduation theses.

In the curriculum described above, teaching and learning will be implemented by utilizing active learning and online classes, depending on the delivery methods of the program, such as lectures and seminars.

In addition to strict grading using the standards clearly outlined in the syllabus, learning outcomes are evaluated

* For the relationship between evaluation items and evaluation criteria, see the attached Sheet 2 .

- * For the relationship between evaluation items and class subjects, see the attached Sheet 3.
- * For the curriculum map, see the attached Sheet 4.

Academic achievement	Evaluation
	criteria
Excellent	3.00~4.00
Very Good	2.00~2.99
Good	1.00~1.99

9. Graduation Thesis (Graduation Research) (Positioning, When and how it is assigned, etc.)

Positioning

The graduation thesis is positioned as one of the major subjects to achieve the following learning/educational goals:

(D) Developing the ability to solve engineering issues on one's own initiative with flexible thinking and creativity

(E) Developing communication skills and the ability to globally collect and dispatch information.

When and how it is assigned

When it is assigned: At the start of the fourth year (only to those who meet the conditions for embarking on a graduation thesis)

Conditions for embarking on a graduation thesis

(1) Students must gain 43 credits or more out of 46 credits, the required number for graduation in Liberal Arts Education subjects.

(2)Students must gain 10 credits or more in the first group of specialized basic subjects

(3) Students must gain all of the required credits in Machine Design and Drawing, CAD, Mechanical Engineering Design and Production, Machine Shop Training, Experiments in Mechanical Engineering

(4) Students must gain 11 credits or more out of 15 credits, the required number in the second group of specialized basic subjects.

(5) Students must gain a total of 68 credits or more in specialized basic subjects and specialized subjects.

How it is assigned

The research details of each laboratory to which the students can be assigned are explained by giving out handouts at a briefing held in February, in the second semester of the third year. After the number of students acceptable to each laboratory is given at the start of the fourth year, students who can begin their graduation theses are assigned as requested. In the case that the number of students exceeds the acceptable limit for a laboratory, adjustments may be made.

10. Responsibility-taking System

(1) PDCA Responsibility-taking System ("Plan," "Do," "Check," and "Act")

The cluster leader and program leader are responsible for executing this program. Faculty committee members responsible for this program make plans, while self-check/evaluation committee members responsible for this program make evaluations. The cluster and program teachers committee scrutinize the plans and evaluations from time to time for further improvement. When major issues arise, a working group may be established at the discretion of cluster leader and program leader.

(2) Program assessment

Criteria for program assessment

• Whether or not each class subject is properly allocated in light of the goals of the program, and whether course content is appropriate

· Whether or not, on average, students taking the course have achieved or exceeded the goals

 \cdot Whether or not the system runs in proper cycles that enable the continuous improvement of the program

How the program is assessed

• Conducting self-assessment for each subject based on class improvement questionnaires from students who have taken course, and based on performance rating results

• Conducting questionnaires (obtained at graduation) in suitable cycles, to evaluate the validity of the goals Position on feedback to students and how it should be conducted

Search records of each student's learning status, prepared by tutors, are kept.

Based on these records, study guidance is given to each student. At the same time, requests from students are discussed at teachers' meetings as needed. Furthermore, based on the results of the course improvement questionnaires obtained from students, subject teachers draw up class improvement plans that reflect the questionnaire results.

Cluster 1 Basic Specialized Subjects

© Required subject

OCompulsory elective subject

 \triangle Free elective subject

				Гуре of regist		e						C	lass				ek	Class Hours/Week													
		its	ical Systems Engineering			y Transform Engineering	1	.st g	grad	e	2	nd į	grad	le	3	rd g	rade	4	th g	grad	le										
	Class Subjects	Credits	ianical S Engi	ianical S Engi	hanical S Engi	Mechanical Systems Engineering	Transportation Systems	Materials Processing	Energy Transform Engineering	Spi	ring	Fa	all	Spi	ring	Fa	all	Spr	ring	Fall	Sp	ring	Fa	all	Note						
			Mech		Mater	En	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T 4T	1T	2T	3T	4T										
	Applied Mathematics I	2	\bigcirc	\bigcirc	\bigcirc	\bigcirc			4																						
	Applied Mathematics II	2	\odot	\bigcirc	\bigcirc	\odot					4																				
	Applied Mathematics III	2	\bigcirc	\bigcirc	\bigcirc	\odot							4																		
	Engineering Mathematics A	2	\bigcirc		0	\bigcirc									4																
dn	Engineering Mathematics C	2	\bigcirc		0	0								4																	
1st	Probability and Statistics	2	\bigcirc	\bigcirc	0	\bigcirc					4																				
	Synthesis of Applied Mathematics	2	\bigcirc		0	0											4														
	Practice of Mechanics	1	\bigcirc	\bigtriangleup	0	0			4																						
	Introduction of Mechanical and Transportation Engineering	2	0	\bigcirc	\bigcirc	\bigcirc			4																						
	Technical English	1	\bigcirc	\bigcirc	0	\bigcirc					2	2																			
	Basic Engineering Computer Programming	2	0	\bigcirc	0	\bigcirc						4																			
	Mechanics of Material I	2	0	\bigcirc	\bigcirc	\bigcirc					4																				
	Thermodynamics I	2	\bigcirc	\bigcirc	\bigcirc	\bigcirc					4																				
	Fluid Dynamics I	2	\bigcirc	\bigcirc	\bigcirc	\bigcirc						4																			
d	Control Engineering I	2	0	0	\bigcirc	\bigcirc						4																			
2nd group	An Introduction to Engineering Materials	2	0	0	\bigcirc	\bigcirc					4																				
g bn	Fundamentals of Materials Processing	2	0	0	\bigcirc	0						4																			
5	Machine Design and Drawing	1	0	0	\bigcirc	\bigcirc			3	3																					
	Computer Aided Design	1	0	0	\bigcirc	\bigcirc					3	3																			
	Machine Shop Training (a)	1	0	\bigcirc	\bigcirc	0			3	3																					
	Machine Shop Training (b)	1	0	\bigcirc	\bigcirc	\bigcirc					3	3																			

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

Cluster 1 Specialized Subjects

(Program of Material Processing)

© Required subject ○Compulsory elective subject △Free elective subject Class Hours/Week															bject				
	S	f					(Cla	SS .	Ho	urs	/W	eel	ζ	1				
Class Subjects	Credits	e 0	15	st g	rac	le	2nd grade Spring Fall				31	rd g	gra	de	4t	h g	gra	de	Note
Class Subjects	Cre	Гyр	Sprin		ng Fall		Spring Fall		pring Fall			Spring Fall			note				
)	_	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	
Dynamics of Vibrations I	2	\bigcirc							4										
Experiments in Mechanical Engineering	1	\bigcirc									3	3							
Mechanical Engineering Design and Production	1	\bigcirc											3	3					
Mechanical Materials I	2	\bigcirc										4							
Mechanical Materials II	2	\bigcirc		-			-							4	-				
Fracture Mechanics	2	\bigcirc					-				-			4	-				
Fusion and Solidification Processings I	2	\bigcirc					-				-	4			-				
Plastic Working and Powder Metallurgy II	2	\bigcirc					-				-		4		-				
Materials Science	2	\bigcirc								4									
Machining	2	\bigcirc										4							
Introduction to Quantum Physics	2	\bigtriangleup								4									
Fluid Dynamics II	2	\bigcirc								4									
Thermodynamics II	2	\bigcirc								4									
Heat Transfer I	2	\bigcirc							4										
Combustion Engineering Fundamentals	2	\triangle									4								
Internal Combustion Engines	2	\bigtriangleup											4						
Data Processing and Numerical Analysis	2	\bigcirc								4									
Computer Programming	2	\bigcirc										4							
Theory of Elasticity and Plasticity	2	\bigcirc									4								
Computational Solid Mechanics	2	\bigcirc										4							
Mechanics of Materials II	2								4										
Mechanism and Kinematics	2	\bigcirc								4									
Dynamics of Vibrations II	2	\bigcirc									4								
Control Engineering II	2	\bigcirc							4										
Electrical and Electronic Engineering	2	\bigcirc									4								
Mechatronics	2	\triangle											4						
Measurement and Signal Processing	2	\bigcirc												4					
Mechanical System Control	2	\bigtriangleup					-				4				-				
Data Structure and Algorithm	2	\triangle												4					
Manufacturing System	2	\bigtriangleup										4							
Machine Elements Design	2	\bigcirc							4										
Machine Design	2	\bigcirc											4						
Systems Engineering	2	\bigcirc								4									
Transportation	2	\bigcirc							4										
Internship	1	\bigcirc											3	3					
Graduation Thesis	5	\bigcirc							_										

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 Understane	(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	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.
Abilities Skill		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

Relationships between the evaluation items and class subjects

Sheet 3

	-							Б	Tuoluoti	on itor							
					Knowlo	dge and	Undors		Evaluati		ıs and Ski	lle	Comprehen	sive Abilities			
						inge and 1)		$\frac{1}{2}$		$\frac{1}{1}$		ns 2)		1)	Total		
			Type of			1)		<i>د</i>)	,	1)		2)	,	1)	weighted values of		
Subject type	Class subjects	credits	course registratio	Period	Weighted values of	Weightsed	Weighted values of	Weightsed	Weighted values of	Weightsed	Weighted values of	Weightsed	Weighted values of	Weightsed	evaluation		
			n		evaluation	values of	evaluation	values of	evaluation	values of	evaluation	values of	evaluation	values of	items in the		
					items in the	evaluation items	items in the	evaluation items	items in the	evaluation items	items in the	evaluation items	items in the	evaluation items	subject		
					subject	itenis	subject	itenis	subject	itenis	subject		subject	itenis			
Liberal Arts Education	Introduction to University Education	2	Required	1semsester-1T	100	1											
			-		100	1									100		
Liberal Arts Education	Introductory Seminar for First-Year Students	2	Required	1semsester							50	1	50	1	100		
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		4	Elective	1,2,3,4semsester	100	1									100		
	Area Courses Courses in Natural Sciences				100	-							100	1			
	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	Al	100		
Liberal Arts Education	Communication I	1	Required	1semsester			в						100	1	100		
Liberal Arts Education	Communication II	1	Required	2semsester									100	1	100		
	Communication II		Required											1			
Liberal Arts Education	Communication II	1	Required	2semsester			В						100	1	100		
iberal 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	00	2	Required	1semsester			100	1							100		
							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		
		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		
iberal Arts Education	Conoral Mash	2	Required	1semsester			100	1							100		
	General Mechanics I																
Liberal Arts Education	General Mechanics II	2	Required	2semsester			100	1							100		
Liberal Arts Education	Basic Electromagnetism	2	Required	3semsester			100	1							100		
Liberal Arts Education	Experimental Methods and Laboratory Work in Physics I	. 2	Required	2semsester			100	1							100		
	,,		-														
	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		
			-														
	Applied Mathematics III	2	Required						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		
			-														
		2	Elective	6semsester					100	1	ļ				100		
Specialized Education	Practice of Mechanics	1	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 2	0057683 39	280-11 (BBO	R-52001 2RF	a (08) 63(97)	ED:46h/P224	1611) 1911 1911 1911 1911	0886177000	8/116210000EF4	HARGE REAL	BR8461934	12 OFF BLINKREACHEN		
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							İ										
			_	_													
		2	Required	3semsester					100	1					100		
									100	1					100		
Specialized Education	An Introduction to Engineering Materials	2	Required	3semsester													
-			-						100	1					100		
pecialized Education	Fundamentals of Materials Processing	2	Required	3semsester			100	1	100	1					100		
Specialized Education		2 2	-				100	1	100	1					100		
Specialized Education	Fundamentals of Materials Processing Computer Programming	2	Required	3semsester			100	1	100	1	80	1	20	1			
Specialized Education Specialized Education Specialized Education	Fundamentals of Materials Processing Computer Programming Experiments in Mechanical Engineering	2 2	Required Elective	3semsester 5semsester			100	1	100	1	80 100	1	20	1	100		
Specialized Education Specialized Education Specialized Education Specialized Education	Fundamentals of Materials Processing Computer Programming Experiments in Mechanical Engineering Mechanical Engineering Design and Production	2 2 1 1	Required Elective Required Required	3semsester 5semsester 5semsester 6semsester			100	1					20	1	100 100 100		
Specialized Education Specialized Education Specialized Education Specialized Education Specialized Education	Fundamentals of Materials Processing Computer Programming Experiments in Mechanical Engineering Mechanical Engineering Design and Production Machine Design and Drawing	2 2 1 1 1	Required Elective Required Required Required	3semsester 5semsester 5semsester 6semsester 2semsester			100	1	100	1	100	1	20	1	100 100 100 100		
Specialized Education Specialized Education Specialized Education Specialized Education Specialized Education	Fundamentals of Materials Processing Computer Programming Experiments in Mechanical Engineering Mechanical Engineering Design and Production Machine Design and Drawing	2 2 1 1 1 1	Required Elective Required Required	3semsester 5semsester 5semsester 6semsester			100	1			100		20	1	100 100 100 100 100		
Specialized Education Specialized Education Specialized Education Specialized Education Specialized Education Specialized Education	Fundamentals of Materials Processing Computer Programming Experiments in Mechanical Engineering Mechanical Engineering Design and Production Machine Design and Drawing	2 2 1 1 1	Required Elective Required Required Required	3semsester 5semsester 5semsester 6semsester 2semsester			100	1			100	1	20	1	100 100 100 100		
Specialized Education Specialized Education Specialized Education Specialized Education Specialized Education Specialized Education	Fundamentals of Materials Processing Computer Programming Experiments in Mechanical Engineering Mechanical Engineering Design and Production Machine Design and Drawing Computer Aided Design	2 2 1 1 1 1	Required Elective Required Required Required	3semsester 5semsester 5semsester 6semsester 2semsester 3semsester			100	1			100	1	20	1	100 100 100 100 100		

					Evaluation items Knowledge and Understanding Abilities and Skills Comprehensive Abilities Tota												
								0					Comprehen	Total			
			Type of		(1)	()	2)	(1)	(2)	(1)	weighted		
Subject type	Class subjects	credits	course registratio n	Period	Weighted values of evaluation items in the subject	Weightsed values of evaluation items	Weighted values of evaluation items in the subject	Weightsed values of evaluation items	Weighted values of evaluation items in the subject	Weightsed values of evaluation items	evaluation	Weightsed values of evaluation items			values of evaluation items in the subject		
Specialized Education	Mechanical Materials II	2	Elective	6semsester					100	1					100		
Specialized Education	Fracture Mechanics	2	Required	6semsester					100	1					100		
Specialized Education	Fusion and Solidification Processings I	2	Required	5semsester					100	1					100		
Specialized Education	Plastic Working and Powder Metallurgy II	2	Elective	6semsester					100	1					100		
Specialized Education	Materials Science	2	Required	4semsester					100	1					100		
Specialized Education	Machining	2	Required	5semsester					100	1					100		
Specialized Education	Introduction to Quantum Physics	2	Elective	4semsester					100	1					100		
Specialized Education	Fluid Dynamics II	2	Elective	4semsester-4T					100	1					100		
Specialized Education	Thermodynamics II	2	Elective	4semsester-4T					100	1					100		
Specialized Education	Heat Transfer I	2	Elective	4semsester-3T					100	1					100		
Specialized Education	Combustion Engineering Fundamentals	2	Elective	5semsester					100	1					100		
Specialized Education	Internal Combustion Engines	2	Elective	6semsester					100	1					100		
Specialized Education	Data Processing and Numerical Analysis	2	Required	4semsester					100	1					100		
Specialized Education	Theory of Elasticity and Plasticity	2	Elective	5semsester					100	1					100		
Specialized Education	Computational Solid Mechanics	2	Elective	5semsester					100	1					100		
Specialized Education	Mechanics of Materials II	2	Elective	4semsester					100	1					100		
Specialized Education	Mechanism and Kinematics	2	Elective	4semsester					100	1					100		
Specialized Education	Dynamics of Vibrations II	2	Elective	5semsester					100	1					100		
Specialized Education	Control Engineering II	2	Elective	4semsester					100	1					100		
Specialized Education	Electrical and Electronic Engineering	2	Elective	5semsester					100	1					100		
Specialized Education	Mechatronics	2	Elective	6semsester					100	1					100		
Specialized Education	Measurement and Signal Processing	2	Elective	6semsester					100	1					100		
Specialized Education	Mechanical System Control	2	Elective	5semsester					100	1					100		
Specialized Education	Data Structure and Algorithm	2	Elective	6semsester					100	1					100		
Specialized Education	Manufacturing System	2	Elective	5semsester					100	1					100		
Specialized Education	Machine Elements Design	2	Elective	4semsester					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	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		

Curriculum Map of Materials Processing

Sheet 4

							4th grade			
Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fal	1		
Introduction to University Education	Area Courses	Area Cou©es	Area Cou@es (О (Internship (O))	()
Peace Science Courses	Health and Sports Courses	0(())						
Area Courses	0	()					
Health and Sports Courses	0	()							
Introduction to Information and Data Sciencies	CalculusII	Bas©Electromagnetism	⊚ (Computer Programming) ()	0)	
CalculusI ()	Linear AlgebraII	Genera@Chemistry	Ο (())				
Linear AlgebraI (©)	Seminar in Basic Mathematics II	Basic Orgineering Computer Programming	<mark>(</mark> @ ())						
Seminar in Basic Mathematics I (©)	General Mechanics II	Ø	()					
General Mechanics I ()	Experimental Methods and Laboratory Work in Physics I ()	0- I								
I.	xa h ai aeEneep tayheb≾G&M énep	eteir ore Geleiert I)								
	Applied Mathematics I	Appli@ Mathematics II	Appli@ Mathematics III	Engine @ng Mathematics A	Synthesis of Applied Mathematics) (o	()))	
	Practice of Mechanics	Probability and Statistics	Engin@ering Mathematics C	Me¢chanic @ Materials I	Mecha@i¢al)Materials II)	Q) ()	
	Introduction of Mechanical and Transportation Engineering	Mechanics of Material I	Dyna@ics of Vibrations I	Fusion and lidification Processings I	Fracture Méchanics) 🔘)	(
	Machine Design and Drawing	Theomodynamics I	Mate@ials Science	Machi@ing)	PlastiQurking and Powder Metallurgy II (0)())
		Fluid Dynamics I	Introducti@to Quantum Physics	Combustion Degineering Fundamentals	Internalcombustion Engines)) ()
		Control Engineering I	Flui@Dynamics II	Theory of Elesticity 😡 Plasticity	Mechatronics () o)	()
		An Introduction to Engineering Materials	Thermodynamics II	Dynamics of Vibrations II	Data Structure and Algorithm	(<u>A</u> O	0 ()))
		Fundamentals of Materials Processing	Heat Transfer I	Electrical and Electronic Engineering	Machine Design (O)	(
			Data Processing and Numerical Analysis	Mechanical System Control (Measurement and Signal Processing	0)		
			Mechanics of Materials II	Manufactuting System	Δ(())	
			Mechanism and Kinematics	Computation Colid Mechanics	(C))			
			Control Engineering II		(0)		
			Machine Elements Design		()			
			Systems Engineering	0	()		
			Transportation	0	()
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	Introductory Seminar for First-Year Students	Machine Shop Training (a)	Machine Shop Training (b)	Systems Engineering	Experiments in Mechanal Engineering 1)	Mech@nical Engineering Design and roduction)	Graduation Thesis	Gradu@ion Thesis)	O	(
			Computer Aided Design	0	(Internship) O	(
	Introductory Seminar for First-Year Students	Basic English UsageII	O)	(Experiments in Mechanical Engineering-1	Internship	Graduation Thesis	Gradu@ion Thesis	Ø	(
Cultivating abilities of communication and of internationally collecting information	Basic English UsageI	Comm@nication II	Techn@cal English	© () ()	A)			
	CommunicationI	Comm@nication II	© ((В)	A)				
and releasing it	Communication I	Ø	(В)					
	Basic language $I(\bigcirc)$									
	Basic language II	0	()					
Color-code	Common subjects	Foundation Courses	Basic Specialized Subjects The first gro	Basic Specialized Subjects The second group	Specialized Subjects	S)			

Symbol Require@subject Compulsory@lective subject (Free(electivesubject ()))