For entrants in AY 2021

Appended Form 1

Specifications for Major Program

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Name of School (Program)	School of Engineering Cluster 2 (Electrical, Electronic and Systems Engineering)
Program name	
(Japanese)	
(English)	Program of Electrical, Systems and Information Engineering
1 Academic degree to be a	acquired: Bachelor's degree in engineering
2. Overview	
(1)	

tems and Information Engineering vices and Systems

Except for in exceptional circumstances, students who are enrolled in Cluster 2 in the School of Engineering (Electrical, Electronic and Systems Engineering) can choose one of the above two options for this program at the start of the second year, after going through liberal arts education and specialized education for one year after enrollment.

The Program of Electrical, Systems and Information Engineering develops professionals who have acquired a broad basic knowledge and the technical expertise related to electrical and electronic circuits, electric energy, measurement control, system planning management, and information processing required for system construction, as well as the ability to solve complicated problems in a highly informatized society, and to take the lead in future technological innovation on their own initiative.

To that end, this program offers a curriculum in which students can learn, comprehensively and systematically, the specialized subjects related to electricity, systems, and information, from the basics to practical application. In concrete terms, students study mathematics, electric circuits, technical English, programming that is commonly used in all fields related to electricity, systems and information, experimentation, practicum, and introductory subjects such as "specialized basic subjects". These are studied mainly in the first and second years, and enable students to acquire a broad range of knowledge and a wide field of vision. From the second year to the fourth year, students can systematically acquire the knowledge and applied skills required in each field by taking combined "specialized subjects" classified into the six fields of physical engineering, electric circuits and energy, measurement

control, system planning management, computing, and mathematical information. Specialized basic subjects and specialized subjects are designed for students to be able to acquire specialization and a broad range of knowledge. Consideration is given to ensuring that students have a degree of freedom in choosing their future career path.

This program has prepared a curriculum through which students can acquire the qualifications below. If students complete the designated subjects, they are exempted, wholly or in part, from the applicable national examination for the acquisition of these qualifications.

Type-1 High School Teaching License (Industry) (mastery of teaching related subjects is required)

Electrical Chief Engineer (some years' work experience after graduation is required)

Engineer for Architectural Equipment (Qualification of candidacy for an exam is given to those who gain two or more years' experience after graduation.)

3. Academic Awards Policy (Goals of the Program and Policy for Awarding Degrees)

The Program of Electrical, Systems and Information Engineering develops professionals who have a broad perspective, insight, a sense of responsibility, and an ethical outlook, as well as expertise, technical knowledge, and the ability to analyze and solve problems.

To that end, this program covers the fields of electricity, systems, and information, and offers an education that deals with "electricity" in a comprehensive way, from the two perspectives of electricity as a thing in itself, and of the abstract concept of electricity, systems, and information. By providing everything, from the basic concepts to cutting-edge knowledge, in each field and, furthermore, identifying the mutual relationships between the fields in a systematic manner, this program aims at developing professionals who can take the lead in engineering development in these fields, and who have the ability to develop innovative technology by synthesizing the different fields, which is of growing importance for the future.

This program awards a bachelor's degree in engineering to students who, in addition to the number of credits necessary to meet the standard of the course, have acquired the following knowledge and abilities:

Goal A Acquisition of the ability to recognize the relationship between science and technology, and humankind, society, and the natural environment, from various perspectives, and the ability to understand the responsibilities engineers have for society.

Goal B Acquisition of the basic knowledge commonly required in the field of electronic systems and information, and the abilities applicable to the field.

Goal C Acquisition of the ability to analyze given challenges by using expertise, and draw solutions that meet the requirements of society.

Goal D Acquisition of the ability to draw up plans and measures to resolve challenges, and the will to carry these measures out.

Goal E Acquisition of the ability to gather information and to communicate in Japanese and English. Acquisition of the ability to sum up one's thoughts and accomplishments, to write logically, and to give a presentation.

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

The Program of Electrical, Systems and Information Engineering prepares and implements a curriculum that provides the following knowledge and abilities so that students are able to achieve the goals of the program.

Knowledge/Understandings

Cultivation of the understanding of society-technology relations and the ethical outlook necessary for an engineer (Goal A). This is obtained through mastery of liberal arts education subjects such as "Introduction to University Education", and "Courses in Arts and Humanities/Social Sciences", and basic specialized subjects such as "Introduction to Energy and Information Systems" to be offered in the first year.

Basic knowledge of mathematics, such as differential and integral calculus, and linear algebra, required by scientists and engineers (Goal B). This is obtained through mastery of such fundamental subjects as "Calculus" to be offered in the first year.

Basic knowledge of physical theory and experimental methods required by scientists and engineers (Goal B). This is obtained through mastery of fundamental subjects such as "General Mechanics", "Experimental Methods

and Laboratory Work in Physics" to be offered in the first year.

General understanding and acquisition of knowledge about technologies in the field of electronic systems, and acquisition of the basic knowledge common to this field (Goal B). This is obtained through mastery of "Introduction to Energy and Information Systems" and "Electric Circuit Theory I" to be offered in the first year.

Abilities/Skills

The mathematical methodology required by experts in the field of electrical, systems and information (Goal B). This is obtained through mastery of basic specialized subjects such as "Applied Mathematics" to be offered during the period from the third or fourth term of the first year through the second year.

The concepts, knowledge, and methodology that form the foundation of the field of electrical, systems and information (Goal B). This is obtained through mastery of specialized subjects to be offered during the period from the third or fourth term of the first year through the third year.

The ability to apply basic concepts, knowledge, and methodology in the field of electrical, systems and information to concrete, professional issues (Goal B). This is obtained through mastery of specialized subjects to be offered during the period from the third or fourth term of the first year through the third year.

The ability to resolve problems and challenges by using experiments to solve practical problems, by using methods of numerical calculation, and by gathering relevant data (Goal D). This is obtained through mastery of basic specialized subjects such as "Basic Experiments in Electrical Engineering" and "Programming" to be offered during the period from the first or second term of the second year through the third year.

The ability to make action plans on one's own initiative in relation to practical issues and challenges, make adjustments and resolve problems and challenges by using basic and specialized knowledge and methods (Goal C, D). This is obtained through mastery of "Graduation Thesis" to be offered in the fourth year.

Comprehensive Abilities

Creative and logical thinking to analyze practical problems and challenges, and to reach rational solutions that meet the requirements of society, as well as the engineering development abilities to physically realize such solutions (Goal C, D)

The ability to organize research results and write logically, including regarding the significance and validity of the obtained outcomes, and to present these research outcomes and discuss them verbally and in an easy-to-understand manner (Goal E). This is obtained through mastery of "Graduation Thesis" to be offered in the fourth year.

The teamwork, leadership, and communication abilities needed to work in a group (Goal E) These are obtained through mastery of Basic specialized subjects such as "Basic Experiments in Electrical Engineering" to be offered during the period from the second year through the third year.

The ability to take an approach to solving various problems after understanding that such problems that exist in humankind, society, and among individuals can be interpreted in various ways depending on social conditions, cultures, etc. This is obtained through mastery of liberal arts education subjects such as "Basic language I" and "Area Courses".

The ability to read, write, converse, and retrieve information in the English language, necessary for conducting research (Goal E) This is obtained through mastery of "Technical English" to be offered in the third year and "Graduation Thesis" to be offered in the fourth year.

5. Program Timing/Acceptance Conditions

The English-based Bachelor's Degree programs begin in the first semester of the first year. Enrollment in Program of Electrical, Systems and Information Engineering occurs in the second year. Students are assigned to this program based on consideration of their request and academic results. In order to be assigned to this program, students must acquire a total of 34 or more credits in liberal arts education subjects and specialized education subjects by the end of the first year.

6. Qualifications to be Acquired

By mastering the predetermined courses, students can obtain Type-1 High School Teaching License (Industry),-

This Program is operated by teachers who support the Program of Electrical, Systems and Information Engineering, however, the program targets students who belong to Cluster 2 and, therefore, the person responsible for executing the program is the Cluster 2 leader. Planning, implementing, evaluation, and handling are discussed mainly in the Cluster 2 Education Program committee and in the Cluster 2 committee (held, in principle, on the first Wednesday of every month) in an appropriate manner. Depending on the situation or content, a working group is established at the instruction of the Cluster leader to focus in the issues at hand.

When there is a need to consider the response on a program basis, research laboratory groups responsible for the applicable program take the necessary measures. In that case, the responsible person is appointed by the Cluster leader.

(2) 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 students taking the course have one average achieved the goal or above

Whether or not the system runs in proper cycles that enable the program to continually improve in an upward spiral

Conducting self-assessment for each subject based on the results of class evaluations carried out by students who have taken the course, and also based on grade calculation results

Regarding the upward spiral of the program, obtaining the questionnaire from graduates in suitable cycles and also collecting the needs from business corporations

Position on giving feedback to students and how it is approached

For individual courses, the teacher in charge gives comments on course evaluation results and academic achievement results.

For re-examining the program structure, the reasons for and the purposes of re-examinationare given on the website.

Cluster 2 Electrical, Electronic and Systems Engineering

Required subject (period of registration specified)

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

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					Require		No. of	Type of course						ct is i nd g				er fig Brd g						
	S	ubje	ect Ty	pe	d No. of credits	Class subjects, etc.	credits	registra	Sp	ring		all	Spr	ing	F	all	Spi	ring	Fa	all	Spr	ing		ll
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	Ba Cour Univ Educ	Inti for 1	roducto First-Y	ory Seminar lear	2	Introductory Seminar for First-Year Students	2	Required																
			a Cour		4	Courses in Arts and Humanities/Social Sciences	2	Compuls																
		Ale	a coui	.565	4	Courses in Natural Sciences	2	ory elective																
				Basic	2	Basic English UsageI	1	Demined																
				English Usage	۷	Basic English UsageII	1	Required																
	s	ages	Engli sh	Communica	2	CommunicationI	1	Required																
	Common Subjects	Foreign Languages	(Note2 3)	tion	~	Communication I	1	Requireu																
	non S	eign I		Communica	2	Communication II	1	Required																
ects	Comr	For		tion	2	Communication II	1	nequireu																
Subje			(Select or	oreign Languages ne language from French, Spanish,	2	1 subjects from Basic language I	1	Compuls ory																
cation				Chinese, Korean	2	1 subjects from Basic language II	1	elective																
Arts Education Subjects			ormatio ence Co	on and Data ourses	2	Note 4 Elements of Information Literacy or Exercise in Information Literacy	2	Compuls ory elective																
Liberal A			alth an irses	d Sports	2		1or2	Compuls ory elective																
Libe						CalculusI	2																	
						CalculusII	2																	
						Linear AlgebraI	2																	
						Linear AlgebraII	2																	
		Basi	ic Subj	octs	16	Seminar in Basic Mathematics I	1	Required																
		Das	ic Subj		10	Seminar in Basic Mathematics II	1	nequireu																
						General Mechanics I	2																	
						General Mechanics II	2																	
					Experimental Methods and Laboratory Work in Physics I Note 5	1																		
						Experimental Methods and Laboratory Work in Physics II Note 5	1																	
	Fre	e ele	ective s	subjects	6	From all Subject Type Note 6		Free elective																
	No. of		dits i aduatio	required for on	48																			

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 scheduled. Please be sure to check the time schedule for Liberal Arts Education subjects

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 "Elements of Information Literacy" provided in the first semester. You can take the "Exercise in Information Literacy" provided in the second semester only if you fail to obtain credit for "Information Utilization Basics."

Note 5 Students must take both Experimental Methods and Laboratory Work 1 credit and Experimental Methods and Laboratory Work 1 credit .

Note 6 You should take subjects from fields other than the Natural Science field. Credits that have been obtained by taking Communication Basics can be included in this subject type.

		COL	e of urse ration	L						Clas	ss Ho	urs/V	Veek							
	dits	Electrical, Systems and Information Engineering	Electronic Devices and Systems	1	st g	grae	de	2	nd g	grad	le	3	rd g	grad	le	41	th g	gra	de	NT .
Class Subjects	Credits	Electrical, S	ectronic D	Spi	ring	Fa	all	Spi	ring	Fa	all	Spi	ring	F	all	Spi	ring	F	all	Note
			Ē		2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3Т	4T	
Applied Mathematics I	2					4														
Applied Mathematics II	2							4												
Applied Mathematics III	2								4											
Discrete Mathematics I	2								4											(School of Informatics and Data Science)
Synthesis of Applied Mathematics	2									4										
Engineering Mathematics A	2											4								
Engineering Mathematics C	2										4									
Probability and Statistics	2							4												
Technical English	1													4						
Introduction to Energy and Information Systems	2						4													
Electric Circuit Theory I	2					4														
Programming I	2								4											
Programming II	2									4										
Programming III	2											4								
Basic Experiments in Electrical Engineering I	2							10	10											take classes at one of the terms
Basic Experiments in Electrical Engineering II	2									10	10									take classes at one of the terms
Experiments in Electrical Engineering Electronics and System Engineering I	2											10	10							take classes at one of the terms
Experiments in Electrical Engineering Electronics and System Engineering II	2													10	10					take classes at one of the terms

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Electromagnetism I	2	4
Electromagnetism II	2	4
Exercise of Electromagnetism I	1	4
Exercise of Electromagnetism II	1	2
High-voltage Engineering	1	2
Introduction to Semiconductor Devices and Circuits	2	(4) 4
Electric and Electronic Measurements	2	4
Electric Transient Phenomena	2	4
Circuit Theory II	2	4
Electronic Circuits	2	4
Exercise of Electric Circuit	1	2
Electric Energy Generation and Conversion	2	4
Fundamentals of Power Systems	2	4
Power System Engineering	2	4
Power Electronics and Motor Control Application	2	4
Nuclear Engineering	2	4
Electronic Appliances	2	4
Regulations for Electrical Facilities	1	2
Control Systems Engineering I	2	4
Control Systems Engineering II	2	4
Signal Processing Engineering	2	4
Exercises in Measurement and Control Engineering	1	2
Bioelectrical Engineering	2	4
Robotics	2	4
Communication Engineering	2	4
1 1		

Academic Achievements in Electrical Systems and Information Engineering Program The Relationship between Evaluation Items and Evaluation Criteria

		Excellent	Very Good	Good
(1)	The ethics and understanding about the relations between society and technology considered basically necessary for engineers.	Sufficiently understand relations between society and technology, and be able to behave with a sufficient sense of ethics.	Understand relations between society and technology at the standard level, and be able t behave with a standard sense of ethics.	Marginally understand relations between o society and technology, and be able to behave with a minimum sense of ethics.
	Pagis knowledge of mothematics such as	Acquire and he able to utilize sufficient basis	Acquire and he able to utilize standard basis	

 Basic knowledge of mathematics such as
 Acquire and be able to utilize sufficient basic
 Acquire and be able to utilize standard basic

 (2)
 calculus and linear algebra, which is required for scientists/engineers.
 Knowledge of mathematics such as calculus
 Acquire and be able to utilize standard basic

Relationsr	nips between the evaluatio	n itei	ms and	d class subjects													Fv	aluati	on it.	ems											She	eet
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Subject type	Class subjects	credit s	course registratie	Period	ed values	sed	ed values	Weight	ed values	Weight sed	ed values	Weight sed val	lues	Weight sed va	lues St	Veight ed	values	Weight sed	ed values	Weight sed valu	Weig sed	it ed values	Weight	ed values	Weight sed	ed values	Weight sed	values	Weight sed	alues 8	Weight	of
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Liberal Arts Education	Introduction to University Education	2	Require	3 1semsester-1T	in the	items	in the	items	in the	items	in the	items in	the	items in	the it	tems 1	in the	items	in the	items in th	e item	in the	items 1	in the 50	items 1	in the	items	in the	items 1	n the il	tems	in th 10
Liberal Arts Education	Introduction to University Education Introductory Seminar for First-Year Students	2	Require	1semsester-11																		50	1	50	1							10
Liberal Arts Education	Peace Science Courses	2	Elective																									100	1	-		10
Liberal Arts Education	Area Courses (Courses in Arts and Humanities/Social Sc)	4	Elective																									100	1			10
	Area Courses (Courses in Natural Sciences)	4	Elective	8	т																	_						100	1	100		10
	Basic English UsageI Basic English UsageII	1	Require	1 semsester (Intensive course) 2 2semsester (Intensive course)																								_		100 100	1	10
	CommunicationIA	1	Require	1semsester	, 																									100	1	10
Liberal Arts Education	Communication IB	1	кеquire кеquire	1semsester																										100	1	10
Liberal Arts Education	Communication IIA	1	Require	2semsester																										100	1	10
	Communication IIB Basic language I	1	Elective	e 1semsester-1T																								100	1	100	1	10
	Basic language II	1	Elective																									100	1		-	10
	Information Courses	2	Elective	e 1semsester-2T	100	1																										10
Liberal Arts Education	Health and Sports Courses	2	Elective				100														_							100	1			10
Liberal Arts Education	CalculusI CalculusII	2	Require	1 semsester-2T 2 semsester-4T			100 100	1																								10
	Linear AlgebraI	2	Require	1 semsester-1T	1		100	1	l –															1		1		_		-+		10
Liberal Arts Education	Linear AlgebraII	2	Require	2 2semsester-3T			100	1																								10
	Seminar in Basic Mathematics I	1	Require Require	1semsester-2T	1		100	1			_								_													10
Liberal Arts Education	Seminar in Basic Mathematics II	1 2	Require	2semsester-4T 1semsester-1T	-		100	1	100	1												-						\rightarrow		-+		10
Liberal Arts Education	General Mechanics I General Mechanics II	2	Require	2 2semsester-3T	1		-		100	1			-		+											1		\rightarrow		-+		10
Liberal Arts Education	Experimental Methods and Laboratory Work in Physics I · II	2	Require	2 2semsester					100	1																						10
Specialized Education	Introduction to Energy and Information Systems	2	require require	2semsester-4T	50	1			L		50	1					_					_										10
Specialized Education	Applied Mathematics I Applied Mathematics II	2	Elective	2 2semsester-3T e 3semsester-1T									00	1	+							-								\rightarrow		10
	Applied Mathematics III	2	Require	3semsester-2T									00	1																		10
	Discrete Mathematics I	2	Elective										00	1																-		10
Specialized Education	Synthesis of Applied Mathematics	2	Elective	e 4semsester-3T									00	1																		10
	Engineering Mathematics A	2	Elective										00	1	_							-								_		10
1	Engineering Mathematics C Probability and Statistics	2	Elective	3semsester-1T									00	1														_				10
	Technical English	1	Require	6semsester-4T										-																100	1	10
Specialized Education	Electric Circuit Theory I	2	Require Require	2semsester-3T							100	1																				10
	Programming I	2	Require	3semsester-2T											50	1			50	1		_										10
	Programming II Programming III	2	Elective	e 5semsester-1T											50 50	1			50 50	1								_				10
Specialized Education	Basic Experiments in Electrical Engineering I	2	Require	3semsester												-			50	1						50	1			-		10
Specialized Education	Basic Experiments in Electrical Engineering II	2	Require Require	4semsester															50	1						50						10
Specialized Education Specialized Education	Experiments in Electrical Engineering Electronics and System Engineering I Experiments in Electrical Engineering Electronics and System Engineering II	2	Require	5semsester															50	1		_				50	1					10
	Electromagnetism I	2	Elective	e 3semsester-1T										1	00	1			50	1						50	1					10
	Electromagnetism II	2	Elective												50	1	50	1												-		10
	Exercise of Electromagnetism I	1	Elective												50	1	50	1														10
	Exercise of Electromagnetism II High-voltage Engineering	1	Elective												50	1	50 100	1				_										10
Specialized Education	introduction to Semiconductor	2	Elective												00	1	100	1														10
Specialized Education	Electric and Electronic Measurements	2	Elective		,											-	100	1													_	10
	Electric Transient Phenomena	2	Elective												50	1	50	1														10
	Circuit Theory II	2	Require	3semsester-2T											50	1	50	1				-								_		10
	Electronic Circuits Exercise of Electric Circuit	2	Require	4semsester-4T 3semsester-2T											50	1	50 100	1														10
	Electric Energy Generation and Conversion	2	Elective	e 4semsester-4T													100	1													-	10
	Fundamentals of Power Systems	2	Elective	e 5semsester-1T							_						100	1	-													10
	Power System Engineering Power Electronics and Motor Control Application	2	Elective	e 6semsester-4T					-						-		100	1				-								\rightarrow		10
	Power Electronics and Motor Control Application Nuclear Engineering	2	Elective	e 6semsester-3T e 6semsester-3T	1				-						+		100 100	1				-				-		-+		-+		10
Specialized Education	Electronic Appliances	2	Elective	e 7semsester-2T			L										100	1								L						10
	Regulations for Electrical Facilities	1	Elective														100	1														10
	Control Systems Engineering I	2		53emsester-21												1	50	1				_										10
	Control Systems Engineering II Signal Processing Engineering	2	Elective	e 4semsester-4T 5semsester- 1 2T												1	50 50	1														10
Specialized Education	Exercises in Measurement and Control Engineering	1	Require	4 semsester-3T											00	-	100														-	10
	Bioelectrical Engineering	2	Elective														100	1														10
	Robotics	2	Elective											1	00	1					_											1
	Communication Engineering Mathematical Programming	2	Elective												50	1	100 50	1				-						\rightarrow		\rightarrow		1
	Fundamentals of Probability Theory		Require		1										50	1	50	1						1		1				\rightarrow		10
Specialized Education	Simulation Engineering	2	Elective	e 4semsester-3T													100	1														10
	Exercises in Systems Planning and Control	1	Require	5semsester-2T	1						_					Ţ	100	1	_													10
	Decision Making Production Control	2	Elective		-				-					1	00	1	100	1				-								\rightarrow		10
-	Production Control Social System Engineering	2	Elective		1				-					1	00	1	100	1				-				-		-+		-+		10
	Digital Circuit Design	2	Elective		0		L									1	50	1								L						10
Specialized Education	Software Engineering	2	Elective		r												100	1														10
	Artificial Intelligence and Machine Learning	2	Elective												_		100	1				-						$ \rightarrow $				10
-	Computer Network Algorithms and Data Structures	2	Elective					-	-						50	1	100 50	1										\rightarrow		\rightarrow		10
	Human Computer Interaction	2	Elective		1											•	100	1						1		1				-+		10
Specialized Education	Theory of Computing	2	Elective	e 5semsester-1T											50	1	50	1														10
Specialized Education	Stochastic Modeling	2	Elective	e (4semsester-4T), 6semsester-4T	-		1		1						50	1	50	1				1				. —						10

Curriculum Map of Electrical, Electronic and Systems Engineering

	Spring	Fall	Spring	Fall	Spring	Fall		
	(F)Breske in-blarmation Livrary or Elements of Islamation Library (C)	(4T) Introduction to Energy and Information Systems ($\textcircled{0}$)						
	(2T)CalculusI(@)	(4T)CalculusII(@)						
	(1T)Linear AlgebraI(©)	(3T)Linear AlgebraII(©)						
	(2T)Seminar in Basic Mathematics I(@)	(4T)Seminar in Basic Mathematics II(@)						
	(1T)General Mechanics I(©)	(3T)General Mechanics II(©)						
		Experimental Methods and Laboratory Work in Physics I - $\mathbb{E}(0)$						
		(3T)Electric Circuit Theory I(@)						
		(4T) introduction to Energy and Information Systems ($\textcircled{0}$)						
1)Mathematical methods		(3T)Applied Mathematics I(@)	(1T)Applied Mathematics II(O)	(3T)Synthesis of Applied Mathematics (O)	(1T) Engineering Mathematics $A(\Delta)$			
quired for professionals in			(2T)Applied Mathematics III(@)	(4T)Engineering Mathematics $C(\Delta)$				
ectrical, electronics, systems, nd information engineering.			(2T)Discrete Mathematics I(O)					
			(1T)Probability and Statistics(@)	D (17(@))	D (W (A))			
			Programming I(◎) (1T)Electromagnetism I(○)	Programming II(©)	Programming III(△) (IT)Signal Processing Engineering(◎)	(3T)Robotics(O)		
			(IT)Exercise of Electromagnetism I(△)		 (11)Social System Engineering(△) 			
			(27) Introduction to Semiconductor Devices and $\operatorname{Circuits}(\Delta)$	(3T)Electric Transient Phenomena(O)		((3T)Digital Circuit Design(△))		
Concepts, knowledge and ethods which are the basis for			(2T)Circuit Theory II(©)	(4T)Electronic Circuits(@)	(1T)Theory of Computing(Δ)	((3T)Algorithms and Data Structures (Δ))		
udies related to electrical, ectronics, systems, and			(2T)Control Systems Engineering I(@)	(3T)Electric Transient Phenomena(O)		(4T)Stochastic Modeling(Δ)		
formation engineering.			(1T)Mathematical Programming(®)					
				(3T)Digital Circuit Design(△)				
				(3T)Algorithms and Data Structures (△) (4T)Fundamentals of Probability Theory(⊕)				
				$((4T)$ Stochastic Modeling (Δ))				
			(1T)Exercise of Electromagnetism I(△)	(3T)Electromagnetism II(△)		(3T)High-voltage Engineering(△)	(2T)Electronic Appliances(Δ)	(3T)Regulations for Electrical Fac
			(2T)Circuit Theory II(©)		(42T)Signal Processing Engineering(@)		(IT)Replation Comming Telesconsciention (A.)	
			(2T)Exercise of Electric Circuit(@)	(3T)Electric Transient Phenomena(O)	(2T)Bioelectrical Engineering(O)	(JT)Power Electronics and Motor Control Application (Δ)		
			(2T)Control Systems Engineering I(@)			(3T)Nuclear Engineering(Δ)		
3) Ability to apply basic ncepts, knowledge, and				(4T)Electronic Circuits(@)				
ethods of electrical, ectronics, systems, and			((2T)Software Engineering(△)) (2DElectric and Electronic Measurements(△))	(4T)Control Systems Engineering II(O)	(1T)Theory of Computing(△)	(3T)Production Control(○) ((3T)Digital Circuit Design(△))		
formation engineering to oncrete/technical problems.			(21)Electric and Electronic Measurements(Δ)	(3T)Simulation Engineering(0)		((3T)Algorithms and Data Structures(△))		
				(3T)Digital Circuit Design(△)		(3T)Artificial Intelligence and Machine Learning(Δ)		
				(3T)Algorithms and Data Structures(△)		(4T)Computer Network(△)		
				(4T)Fundamentals of Probability Theory(())		(4T)Stochastic Modeling(Δ)		
4) Ability to solve practical				$((4T)$ Stochastic Modeling $(\Delta))$		(3T) Human Computer Interaction ($\Delta)$		
ssues and problems by			Basic Experiments in Electrical Engineering I(\$)	Basic Experiments in Electrical Engineering $II(0)$	Experiments in Electrical Engineering Electronics and Electron Engineering 1(5)	Experiments in Therminal Engineering Electronics and Spiron Engineering $E(\varphi)$		
nducting experiments, using umerical computation			Programming I(⊚)	Programming II(©)	Programming $III(\Delta)$			
ethods, and collecting)Ability to solve pracitical							Graduation Thesis(◎)	Graduation Thesis(
sues and problems by Juntarily making a plan,								
vising it, and utilizing basic 1d technical knowledge and								
) Creative thinking ability ad logical thinking skills to	Introductory Seminar for First-Year Students(©)						Graduation Thesis(◎)	Graduation Thesis (
alyze practical problems and	,							
iutions satisfying social	(IT)Introduction to University Education(())							
eds, as well as technical velopment skills to physically								
alize the solutions. 2)Skills to organize research								
sults and to describe them gically including the	Introductory Seminar for First-Year Students(Q)						Graduation Thesis(⊚)	Graduation Thesis (
gnificance and the fectiveness of the obtained	(IT)Introduction to University Education(©)							
sy-to-understand oral								
esentations and discussions.								
3) Teamwork, leadership and			Basic Experiments in Electrical Engineering $I(\mathbb{Q})$	Basic Experiments in Electrical Engineering $\mathrm{I\!I}(\mathbb{Q})$	Experiments in Electrical Engineering Electronics and Equiron Engineering $1 0\rangle$	Experiments in Herwisz Engineering Electronics and System Engineering $E(\boldsymbol{Q})$		
mmunication skills in group orks.								
	(27) Dense Seine C							
) Ability to understand that	(2T)Peace Science Courses(O)	OT Asso Course Courses in Arrow I former						
rious problems, which	(17)Area Courses(Courses in Arts and HammeltineSized Sci(Q) (27)Area Courses(Courses in Natural Sciences)(Q)	(IT)Area Courses(Courses in Arits and HumanitiesSocial Sci(Q) (4T)Area Courses(Courses in Natural Sciences)(Q)						
imanity, society, and								
umanity, society, and dividuals are facing, can be	Health and Sports Courses(O)							
umanity, society, and dividuals are facing, can be	Basic language I(O)							
umanity, society, and dividuals are facing, can be								
arious problems, which umanity, society, and idividuals are facing, can be terpreted variously depending	Basic language I(O) Basic language II(O) Basic English UsageI(©)	Basic English UsageII(@)				(4T)Technical English(@)	Graduation Thesis(@)	Graduation Thesis (
umanity, society, and idividuals are facing, can be	Basic language I(O) Basic language II(O)					(4T)Technical English(@)	Graduation Thesis(③)	Graduation Thesis(4