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#### 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)	
(English)	Program of Mechanical Systems Engineering

1. Academic Degree to be Acquired Bachelor's degree in Engineering

#### 2. Overview

This program offers education in the fundamentals of mechanical system engineering, the structure and function of mechanical systems and the principles of the design and processing of mechanical systems based on new concepts, computer-aided design (CAE and CAD), measurement and control technology, mechatronics technology, the principles of the design and production of new mechanical systems through intelligent numerical simulation and information processing, as well as basic fields such as the mechanics of materials, the dynamics of vibrations, system controls, and other fields. By offering such education, it aims to develop engineers who, having a broader perspective on human-machine relations and environmental issues, are able to assume cutting-edge design and development roles in production engineering. In order to provide an efficient and integrated education, the teachers belonging to the academic society (Science and Engineering Field, Machine Engineering/Science and Technology Unit) are in charge of education for this program. 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 fields of heavy industry, transportation equipment, machinery, and materials, they work actively in the fields of R&D, design, production engineering, and engineering marketing.

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

The Program of Mechanical Systems Engineering develops professionals capable of taking action and displaying great humanity and rationality, who can contribute to the peace, development, and survival of humankind, and to the realization of happiness while striving for co-existence with nature.

Based upon the above, this program awards a bachelor's degree in engineering to students who have acquired the following abilities in a balanced manner, as well as the number of credits necessary to meet the standard of the course.

Acquisition of the fundamentals of mechanical system engineering, the structure and function of mechanical system and the principles of the design and processing of mechanical systems based on new concepts, computer-aided design (CAE and CAD), measurement and control technology, mechatronics technology, the principles of the design and production of new mechanical systems through intelligent numerical simulation and information processing, as well as basic fields such as the mechanics of materials, the dynamics of vibrations, system controls, and other fields.

The ability to assume roles in the design and development of cutting-edge production technology, while having a broader perspective about human-machine relations and environmental issues.

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

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:

. The Program offers not only basic mechanical education but also specialized education in the structure and function of mechanical systems and the principles of the design and processing of mechanical systems based on new concepts, computer-aided design (CAE and CAD), measurement and control technology, mechatronics technology, and the principles of the design and production of new mechanical systems through intelligent numerical simulation and information processing.

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, the students take the specialized basic subjects that are important, together with subjects common to Cluster 1 such as "Mechanics of Materials I" and "Fluid Dynamics I". Then, from the second semester, the students take specialized subjects, such as highly professional subjects related to advanced technology that reflect the characteristics of this program, and subjects related to integrated systems technology.

In the third year, specialized subjects become major subjects, and the students take subjects required for this program. The program tries, as far as possible, not to allocate multiple specialized subjects to the same time-slot, allowing students to take specialized subjects provided by other programs in Cluster 1 according to their personal interests.

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 based on the degree to which the goals set by the educational program are achieved.

#### 5. Program Timing/Acceptance Conditions

When to start the program

The second semester of the second year

Credit Requirements

By the first semester of the second year, students must have acquired the Liberal Arts Education subjects and specialized basic subjects that are commonly specified in Cluster 1. Acceptance conditions for the program are not particularly specified.

#### 6.Qualifications to be Acquired

Type-1 High School Teaching License (Industry)

(Students must acquire the required number of credits for the Type-1 High School Teaching License (Industry), in addition to the required number of credits for this program.)

- 7. Class subjects and course content
- \* For class subjects, see the Course List table on the attached sheet.
- \* For course content, see the syllabus for each fiscal year.

#### 8 Academic Achievements

At the end of each semester, the evaluation criteria are applied to each academic achievement evaluation item so that the level of attainment is clearly demonstrated. Students' grade calculation for each subject, from admission to the current semester, is given in one of three levels: "Excellent," "Very Good," and "Good," based on evaluation criteria calculated by adding the weighted values to the numerically-converted values of their academic achievement in each subject being evaluated (S = 4, A = 3, B = 2, and C = 1).

Evaluation of academic	Converted
achievement	values
S(Excellent: 90 points or higher)	4
A(Superior:80-89 points)	3
B(Good: 70-79 points)	2

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

C(Fair: 60-69 points)	1
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- \* 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.
- 9. Graduation Thesis (Graduation Work) (Positioning, When and how it is assigned, etc.)

Positioning

The graduation thesis is designed to be one component of the overall evaluation of academic achievement.

It is positioned as one of the major subjects to evaluate the following:

Ability/Skills (2) Developing the ability to solve engineering issues on one's own initiative with flexible thinking and creativity

Collective capacity (1) 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 those who satisfy the conditions for embarking on a graduation thesis will be assigned a 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, Machine Shop Training, Experiments in Mechanical Engineering, and Mechanical Engineering Design and Production.
- (4) Students must gain 11 credits or more out of 15 credits, the required number in Liberal Arts Education subjects, 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

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 (Mechanical Systems, Transportation, Material and Energy)

 $\odot$  Required subject (period of registration specified)

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

								$\triangle$ F	ree el	lectiv	e subje	et (ar	ny of t	hese	subject	s shall b	e regist	tered)	
S	Subject type		Required No. of credits	Class subjects, etc.	No. of credits	Type of course registrat ion Compuls	Spi	lst g ring	rad Fa	e all	2nd Sprin	l gr ig	ade Fall	$\operatorname{Sp}$	3rd g ring	re mear rade Fall 3T 47	4t Spri	h gra ng	ade Fall
Pea	ace Science Cour	rses	2		2	ory		0											
es in acation	Introduction to University Educ	ation	2	Introduction to University Education	2	Required	0												
Basic Courses in University Education	Introductory Ser for First-Year St		2	Introductory Seminar for First-Year Students	2	Required	0												
Bas Unive	Advanced Semir	nar	0		1	Free elective			$\triangle$	$\triangle$									
	Area Courses		4	Courses in Arts and Humanities/Social Sc	2	Compuls ory elective	0		0										
			4	Courses in Natural Sciences	2	Compuls ory elective		0		0									
		Basic nglish	2	Basic English Usage I	1		0	0											
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ects	Š Engli sh Cor	nmunic	0	Communication IA	1		0	0											
Subj	s (Note a	tion I	2	Communication IB	1	Required	0	0											
Common Subjects	(Note a Signature of the control of	nmunic	2	Communication IIA	1	Required			0	0									
	ੁੱਧ at	tion II	-	Communication IIB	1	required			0	0									
	Initial Foreign I  (Select one lang)  German, French	uage from	2	1 subjects from Basic language I	1	Compuls	0												
	Russian, Chines and Arabic)			1 subjects from Basic language II	1	ory elective		0											
				Introduction to Information and Data Sciencies	2	Required		0											
	Health and Sports	s Courses	2		1or $2$	Compuls ory elective	0	0	0	0									
				Calculus I	2			0											
				Calculus II	2					0									
				Linear Algebra I	2		0												
				Linear Algebra II	2				0										
				Seminar in Basic Mathematics I	1			0											
			18	Seminar in Basic Mathematics II	1	Required				0									
	D : G 1: .			General Mechanics I	2		0												
	Basic Subjects			General Mechanics II	2				0										
				Basic Electromagnetism	2						(	)							
				$ Experimental\ Methods\ and\ Laboratory\ Work\ in\ Physics\ I\ (Note\ 4) $	1				0										
				$ Experimental\ Methods\ and\ Laboratory\ Work\ in\ Physics\ II\ (Note\ 4) $	1					0									
				General Chemistry	2	Compuls													
			2		1	ory elective													
					1														

Note 3:

No. of credits required for graduation 46

Note 4:

Note 1: When students fail to acquire the credit during the term or semester marked with  $\bigcirc$ ,  $\bigcirc$ ,  $\triangle$  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. Note 2: The credit obtained by mastery of 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 I or II

## Cluster 1 Specialized Subjects (Program of Mechanical Systems Engineering)

○ Required subject○ Compulsory elective subject△ Free elective subject

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Class Subjects	Credits	Pype of course registration		st g				nd g									gra		Note
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Dynamics of Vibrations I	2	0							4			0							
Experiments in Mechanical Engineering	1	0									3	3	0	-					
Mechanical Engineering Design and Production	1	0										_	3	3					
Mechanical Materials I	2											4		4					
Mechanical Materials II	2	0												4					
Fracture Mechanics	2	$\bigcirc$												4					
Fusion and Solidification Processings I	2	$\triangle$										4							
Plastic Working and Powder Metallurgy II	2	$\triangle$											4						
Materials Science	2	$\bigcirc$								4									
Machining	2	0										4							
Fluid Dynamics II	2	$\bigcirc$								4									
Heat Transfer I	2	$\bigcirc$							4										
Combustion Engineering Fundamentals	2	$\triangle$									4								
Internal Combustion Engines	2	$\triangle$											4						
Data Processing and Numerical Analysis	2	0								4									
Theory of Elasticity and Plasticity	2	$\bigcirc$									4								
Computational Solid Mechanics	2	$\bigcirc$										4							
Mechanics of Materials II	2	$\bigcirc$							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	$\bigcirc$											4						
Measurement and Signal Processing	2	0												4					
Mechanical System Control	2	$\bigcirc$									4								
Data Structure and Algorithm	2	$\bigcirc$												4					
Manufacturing System	2	$\bigcirc$										4							
Machine Elements Design	2	$\bigcirc$							4										
Machine Design	2	$\bigcirc$											4						
Systems Engineering	2	0								4									
Computer Programming	2	$\bigcirc$										4							
Transportation	2	$\triangle$							4										
Internship	1	$\bigcirc$											3	3					
Graduation Thesis	5	$\bigcirc$																	

## Cluster 1 Specialized Subjects (Program of Mechanical Systems Engineering)

○ Required subject○ Compulsory elective subject△ Free elective subject

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Experiments in Mechanical Engineering	1	0									3	3	_	-					
Mechanical Engineering Design and Production	1	0										_	3	3					
Mechanical Materials I	2											4		4					
Mechanical Materials II	2	0												4					
Fracture Mechanics	2	$\bigcirc$												4					
Fusion and Solidification Processings I	2	$\triangle$										4							
Plastic Working and Powder Metallurgy II	2	$\triangle$											4						
Materials Science	2	$\bigcirc$								4									
Machining	2	0										4							
Fluid Dynamics II	2	$\bigcirc$								4									
Heat Transfer I	2	$\bigcirc$							4										
Combustion Engineering Fundamentals	2	$\triangle$									4								
Internal Combustion Engines	2	$\triangle$											4						
Data Processing and Numerical Analysis	2	0								4									
Theory of Elasticity and Plasticity	2	$\bigcirc$									4								
Computational Solid Mechanics	2	$\bigcirc$										4							
Mechanics of Materials II	2	$\bigcirc$							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	$\bigcirc$											4						
Measurement and Signal Processing	2	0												4					
Mechanical System Control	2	$\bigcirc$									4								
Data Structure and Algorithm	2	$\bigcirc$												4					
Manufacturing System	2	$\bigcirc$										4							
Machine Elements Design	2	$\bigcirc$							4										
Machine Design	2	$\bigcirc$											4						
Systems Engineering	2	0								4									
Computer Programming	2	$\bigcirc$										4							
Transportation	2	$\triangle$							4										
Internship	1	$\bigcirc$											3	3					
Graduation Thesis	5	$\bigcirc$																	

### Academic Achievements in Educational Program for Mechanical Systems Engin The Relationship between Evaluation Items and Evaluation Criteria

Excellent	Very Good	Good

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Subject type						Knowle	dge and	Unders					Comprehen	sive Abilities	Total weighte	
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Part	Liberal Arts Education	Introduction to University Education	2	Required	1semsester-1T	100	1									100
Performance	Liberal Arts Education	Introductory Seminar for First-Year Students	2	Required	1semsester							50	1	50	1	100
Property	Liberal Arts Education	Peace Science Courses	2	Elective	1semsester-2T	100	1									100
Communication   1	Liberal Arts Education	Basic English UsageI	1	Required	1semsester									100	1	100
Secondary   Communication	Liberal Arts Education	Basic English UsageII	1	Required	2semsester									100	1	100
Marchester   Communication II   1   Regine   Security	Liberal Arts Education	CommunicationI	1	Required	1semsester									100	1	100
Marchester   Communication II   1   Regine   Security	Liberal Arts Education	Communication I	1	Required	1semsester									100	1	100
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Linear Algebra   2   Required   1   100   1   1   1   1   1   1   1	Liberal Arts Education	CalculusI	2	Required	1semsester			100	1							100
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Liberal Ans Education   Seminar in Broin Mathematics   1   1   Required   Seminater   100   1	Liberal Arts Education	Linear AlgebraI	2	Required	1semsester			100	1							100
Description	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
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Liberal Ave Allemone   Command Michanics   1   2   Required   Seemester   100   100   1   100   1   100	Liberal Arts Education	General Mechanics I	2	Required	1semsester			100	1							100
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Liberal Ann Khossins   General Chemistry   2   Elective   Saemaester       100   1																100
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Secretative Relative		General Chemistry														100
Secular of Education   Applied Mathematics II   2   Required   Seemasester								100	1							100
Specialized Education Applied Mathematics III 2 Required 4semsester				_	2semsester						1					100
Specialized Education Engineering Mathematics A 2 Elective 5semsester	Specialized Education	Applied Mathematics II		Required	3semsester					100	1					100
Specialized Education Probability and Statistics Proceedings Probability and Statistics Procedings Procedings Probability and Statistics Procedings Procedi	Specialized Education	Applied Mathematics III	2	Required	4semsester					100	1					100
Specialized Education Probability and Statistics 2 Required 3semsester	Specialized Education	Engineering Mathematics A	2	Elective	5semsester					100	1					100
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Specialized Education   Practice of Mechanics   1   Elective   2-semsester	Specialized Education	Probability and Statistics	2	Required	3semsester					100	1					100
Specialized Education Technical English 1 Required 3semsester 100 100 1	Specialized Education	Synthesis of Applied Mathematics	2	Elective	6semsester					100	1					100
Specialized Education Procedure Education Specialized Education Sp	Specialized Education	Practice of Mechanics	1	Elective	2semsester					100	1					100
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Specialized Education Fundamentals of Materials Processing Specialized Education An Introduction to Engineering Materials Specialized Education An Introduction to Engineering Materials Specialized Education Dynamics of Vibrations I Specialized Education Dynamics of Vibrations I Specialized Education Specialized Education Control Engineering I Specialized Education Specialized Education Thermodynamics I Specialized Education Thermodynamics I Specialized Education Computer Aided Design I Required Ssemsester Specialized Education Computer Programming Specialized Education Specialized Education Computer Programming Specialized Education Computer Programming Specialized Education Specialized Education Computer Programming Specialized Education Specialized Education Computer Programming Specialized Education Machine Shop Training (a) Specialized Education Specialized Education Specialized Education Machine Shop Training (a) Specialized Education Specialized Education Specialized Education Machine Shop Training (a) Specialized Education Specialized								100				80	1	20	1	100
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Specialized Education Mechanics of Material I 2 Required 3semsester																-
Specialized Education Dynamics of Vibrations I 2 Required 4semsester				-												100
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Specialized Education Machine Design and Drawing 1 Required 2semsester 100 100 1 100	Specialized Education	Fluid Dynamics I	2	Required	3semsester					100	1					100
Specialized Education Computer Aided Design 1 Required 3semsester 1 100	Specialized Education	Thermodynamics I	2	Required	3semsester-1T					100	1					100
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Specialized Education Machine Shop Training (a) 1 Required 2semsester 100 1 100 1	Specialized Education	Mechanical Engineering Design and Production	1	Required	6semsester							100	1			100
Specialized Education Machine Shop Training (a) 1 Required 2semsester 100 1 100 1	Specialized Education	Computer Programming			5semsester			100	1							100
	Specialized Education											100	1			100
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Subject type	Class subjects	credits	Type of course registration	Period	Weighted values of evaluation items in the subject	Weightsed values of evaluation items	Weighted values of evaluation	Weightsed values of evaluation items	Weighted values of evaluation		Weighted values of evaluation	Weightsed values of evaluation items	Weighted values of	Weightsed values of evaluation items	d values of evalua ion items in the subject
Specialized Education	Mechanical Materials I	2	Elective	5semsester					100	1					100
Specialized Education	Mechanical Materials II	2	Elective	6semsester					100	1					100
Specialized Education	Fracture Mechanics	2	Elective	6semsester					100	1					100
Specialized Education	Fusion and Solidification Processings I	2	Elective	5semsester					100	1					100
Specialized Education	Plastic Working and Powder Metallurgy II	2	Elective	6semsester					100	1					100
Specialized Education	Materials Science	2	Elective	4semsester					100	1					100
Specialized Education	Machining	2	Required	5semsester					100	1					100
Specialized Education	Fluid Dynamics 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	Required	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 Systems	2	Elective	5semsester					100	1					100
Specialized Education	Machine Elements Design	2	Elective	5semsester					100	1					100
Specialized Education	Machine Design	2	Elective	4semsester					50	1	50	1			100
Specialized Education	Systems Engineering	2	Required	4semsester					100	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 Mechanical Systems Engineering

Sheet 4

	Academic achievements	1st g	grade	2nd	grade	3rd ş	grade	4th	grade
	<b>Evaluation Items</b>	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
ıdi	To develop the ability to	Area Courses	Area Courses	Area Courses	Area Courses		Internship O		
tar	work positively and	Health and Sports Courses	Health and Sports Courses				•		
ers	independently on the	Introduction to University Education	-						
pqe	development of local								
and Understandi	societies, international	Peace Science Courses							
hud		Introduction to Information and Data Sciencies ©	CalculusII	Basic Electromagnetism ©					
	Acquiring necessary basic	CalculusI ©	Seminar in Basic Mathematics II	General Chemistry O					
gp	knowledge for an engineer	Seminar in Basic Mathematics I	Linear AlgebraII	Basic Engineering Computer Programming					
wle	and developing the ability	Linear AlgebraI	General Mechanics II						
Knowledge	to consider logically.	General Mechanics I	Experimental Methods and Laboratory Work in Physics I						
K			Experimental Methods and Laboratory Work in Chemistry I O						
			Practice of Mechan	Applied Mathematics II ©	Applied Mathematics III	Engineering Mathematics A	Synthesis of Applied Mathematics		
			Introduction of Mechanical and Transportation Engineering	Probability and Statistics	Engineering Mathematics C	Mechanical Materials I	Mechanical Materials II		
			Applied Mathematics I	Mechanics of Material I	Dynamics of Vibrations I	Machining	Fracture Mechanics O		
			Machine Design and Drawing	Fluid Dynamics I	Fluid Dynamics II	Combustion Engineering Fundamentals	Internal Combustion Engines		
				Fundamentals of Materials Processing	Mechanics of Materials II	Manufacturing Systems O	Mechatronics O		
	Acquring basis of			An Introduction to Engineering Materials	Mechanism and Kinematics	Electrical and Electronic Engineering	Machine Design		
Skills	mechanical system			Control Engineering I	Systems Engineering ©	Theory of Elasticity and Plasticity	Plastic Working and Powder Metallurgy II		
Ski	engineering steadily and			Thermodynamics I	Materials Science	Fusion and Solidification Processings I	Data Structure and Algorithm		
5 p	developing the applied skill.				Heat Transfer I	Dynamics of Vibrations II	Measurement and Signal Processing		
and	developing the applied skill.								
tis									
Abilitis					0	Computational Solid Mechanics			
Ak					Transportation △				
	Developing the ability of	Introductory Seminar for First-Year Students	Machine Shop Training (a) ©	Machine Shop Training (b) ©	Systems Engineering ©	Experiments in Mechanical Engineering-I ©	Mechanical Engineering Design and Production ©	Graduation Thesis	Graduation Thesis
	solving the technological			Computer Aided Design			Internship		
	issues with flexible ideas								
	and creativity.								
0		Introductory Seminar for First-Year Students	Basic English UsageII			Experiments in Mechanical Engineering 4 @	Internship O	Graduation Thesis	Graduation Thesis
ısiv(	Cultivating abilities of	Basic English UsageI	Communication II	Technical English ©					
hen	communication and of	CommunicationI	Communication II						
Abil	internationally collecting	Communication I							
Con	information and releasing it	Basic language I(O)							
Ĺ		Basic language II							