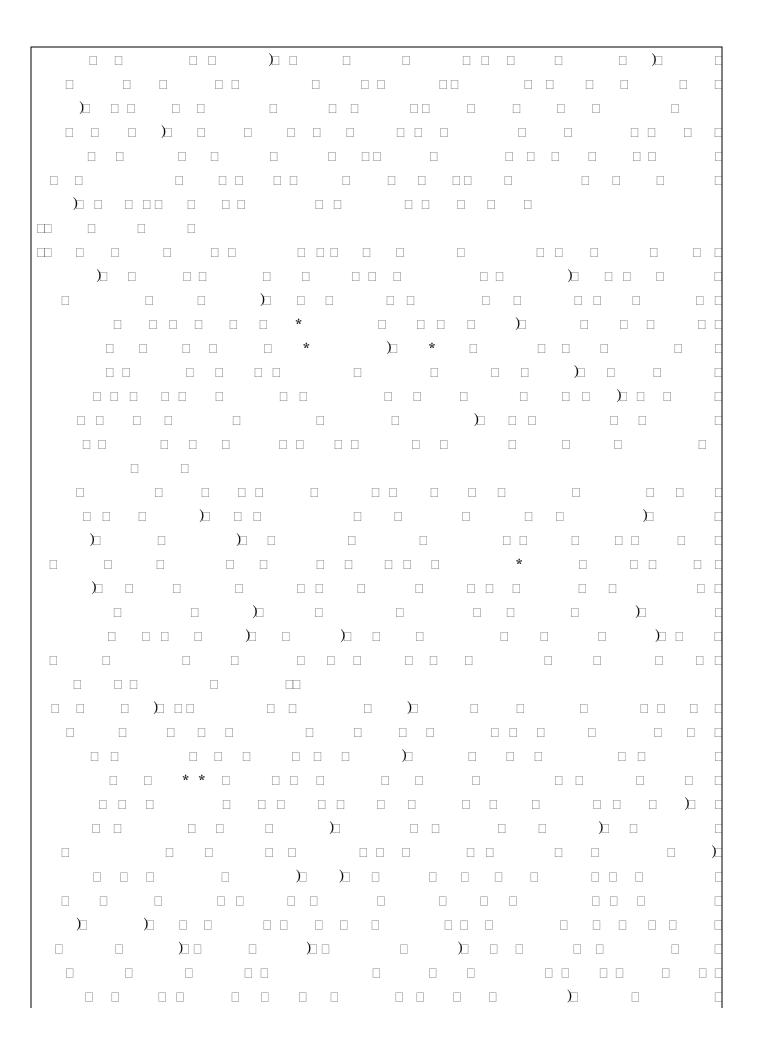
For entrants in AY 2018

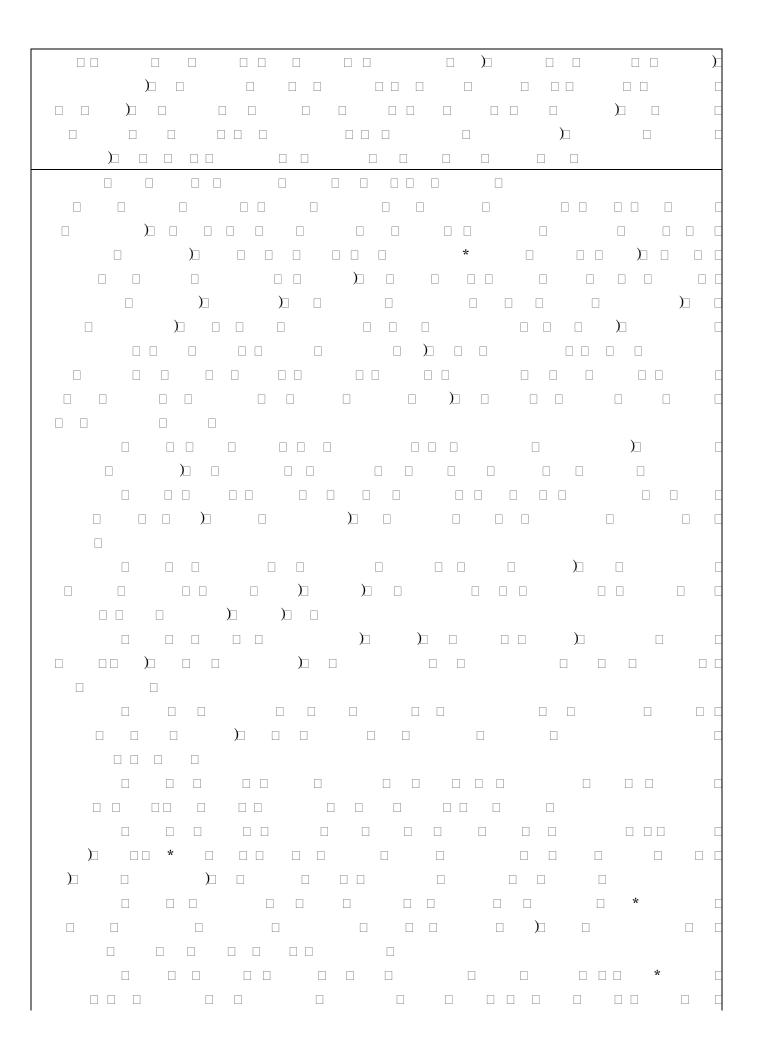
Appended Form $1\Box$

Specifications for Major Program

Name of School (Program) [School of Informatics and Data Science(Informatics and Data Science)]

nee/ j	
Program name (Japanese)	情報科学プログラム
(English)	Informatics and Data Science Program
)	
)	
))
)	





·
•
·

'							
'o o o o o							
)	
			<i>/</i> _				
	<u> </u>						
	_ * _						
		П					
'							
'							
'							
)))		
)_
)							
) <u>:</u>					. [
)))_

])	
) \Box			
)_) \Box			
	[

	_
•	
•	
•	
•	

Table of Registration Standards for Liberal Arts Education Subjects Informatics and Data Science Program

 \odot Required subject (period of registration specified)

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

								ipuisory electr			Year ir					_					_			
		Subject Type No. Cred			Required No. of	Class Subjects, etc.	No. of Credits	Type of Course Registration		1st	yea	r	2	2nd	yea	ır		3rd	yea	r	4	th	yeaı	r
					Credits		Credits	Registration	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	P	eace Sc	cience (Courses	2	Peace Science Courses	2	Compulsory elective		С)												\exists	
	Basic Courses in	Introduction	n to Universi	ty Education	2	Introduction to University Education	2	Required	0															
	University Education	Introductor	y Seminar fo	r First-Year Students	2	Introductory Seminar for First-Year Students	2	Required	0														\Box	
		Area C	Courses		8	4 credits from Courses in Arts and Humanities/Social Sc	2	Compulsory elective	0	С	0	0	0	0	0	0								
				Basic English	2	Basic English UsageI	1	Required	0	9														
				Usage	2	Basic English UsageII	1	rtequireu			(0												
				Communication	2	Communication I A	1	Required	(9														
	cts	70	- 0	I	4	Communication I B	1	Required	(9														
cts	Common Subjects	Foreign Languages	English (Note 2·3)	Communication	2	Communication II A	1	Required			(0												
ıbje	ı Sı	ıgu	Eng Note	П		Communication II B	1	rtequireu			(0												
n St	mor	Lar				CommunicationIIIA	1						((Ċ								
atio	om	ign		Communication	2	Communication IIIB	1	Compulsory elective)	(C								
duca	0	Pore		Ш		Communication III C	1						()	(C								
s E						Select two subjects from t	he three	subjects above	,															
Liberal Arts Education Subjects			(Select or	oreign Languages ne language from French and	2	Two subjects from Basic language I	1	Compulsory elective	()														
П		Health	and Sp	orts Courses	2		1or 2	Compulsory elective)	-)												
		•				Elements of Calculus (Note 4)	2		0															
						Seminar in Basic Mathematics I (Note4)	1	Compulsory elective)														
						Seminar in Basic Mathematics II (Note4)	1	0.000.70			-)											\Box	
		Dogi	c Subje	at a	12	Statistical Data Analysis	2		0															
		Dasi	c Subje	cts	12	CalculusI	2			0)													
						Calculus II	2	Required			0													
						Linear Algebra I	2			0)													
						Linear Algebra II	2				0													
	No. of Cree	dits Requ	uired for	Graduation	38																			

Note 1: If a student failed to earn the credit in the term or semester indicated with the mark " " or " " in the column of "Academic year", it is allowed to take the subject in a following term or semester. It is required to confirm the semester in which the subject is provided in the class schedule for liberal arts education subjects that is published for every academic year, because some subjects might be provided in a term or semester other than that which is shown in this document.

Note 2: The credit for "Field Research in the English-speaking World" and that for "Online English Seminar A" and "Online English Seminar B", that are earned through a program of self-study, are not accepted as the credit for graduation. However, a credit for foreign language study abroad might be accepted as that for "Basic English Usage I", "Basic English Usage II", or "Basic English Usage III" based on advance application. For the details, refer to the description regarding English subjects in liberal arts education in the Students Handbook.

Note 3: Achievement in a foreign language skill test might be accepted as a credit. For the details, refer to the description regarding English subjects in liberal arts education in the Students Handbook.

Note 4: Students who took four mathematics subjects (Math I, Math II, Math A, and Math B) in the entrance examination are required to take the subject "Elements of Calculus." Students who took five mathematics subjects (Math I, Math II, Math III, Math A, and Math B) in the entrance examination are required to take the subjects "Seminar in Basic Mathematics II" and "Seminar in Basic Mathematics II."

Academic Achievement in Educational Program for Informatics and Data Science Program The Relationship between Evaluation Items and Evaluation Criteria

		Academic Achievements		Evaluation Criteria	
		Evaluation Items	Excellent	Very Good	Good
nding	(1)	C1. Knowledge and capabilities required for solving problems, while understanding that various problems of human beings, societies, and individuals can be interpreted in different ways according social conditions, cultures, etc.	Fully understands various problems related to human beings, societies, and individuals and their variety, and has a sufficient level of knowledge required for solving these problems.	Understands various problems related to human beings, societies, and individuals and their variety at a standard level, and has a standard level of knowledge required for solving these problems.	Understands various problems related to human beings, societies, and individuals and their variety at a minimum level, and has a minimum level of knowledge required for solving these problems.
Knowledge & understanding	(2)	D1. Knowledge and skills required for understanding the theoretical system of statistics and data analysis, and for precisely and efficiently analyzing qualitative/quantitative information in big data.	Fully understands the theoretical system of statistics and data analysis, and has sufficient knowledge for precisely and efficiently analyzing big data.	Understands the theoretical system of statistics and data analysis at a standard level, and has a standard level of knowledge for precisely and efficiently analyzing big data.	Understands the theoretical system of statistics and data analysis at a minimum level, and has a minimum level of knowledge for precisely and efficiently analyzing big data.
Kno	(3)	I1. Knowledge and ability required for collecting and processing high-dimensional data using information processing technologies based on scientific logic, while understanding the theoretical system that forms the basis of informatics.	Has sufficient knowledge required for collecting and processing high-dimensional data using information processing technologies, while fully understanding the theoretical system of informatics.	Has a standard level of knowledge required for collecting and processing high-dimensional data using information processing technologies, while having a standard level of understanding on the theoretical system of informatics.	Has a minimum level of knowledge required for collecting and processing high-dimensional data using information processing technologies, while having a minimum level of understanding on the theoretical system of informatics.
	(1)	A. Skills related to the development of an information infrastructure,information processing techniques, and technology for producing new added value through data analysis.	Has fully acquired skills and is capable of exercising them regarding the development of an information infrastructure, information processing techniques, and technology for producing new added value through data analysis.	Has acquired skills and is capable of exercising them at a standard level regarding the development of an information infrastructure,information processing techniques, and technology for producing new added value through data analysis.	Has acquired skills and is capable of exercising them at a minimum level regarding the development of an information infrastructure,information processing techniques, and technology for producing new added value through data analysis.
& skills		B. Ability to identify and solve new problems on their own by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information processing and analysis.	Has acquired a sufficient level of ability to identify and solve new problems their own by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information processing and analysis, and is capable of exercising this ability.	Has acquired a standard level of ability to identify and solve new problems on their own by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information processing and analysis, and is capable of exercising this ability.	Has acquired a minimum level of ability to identify and solve new problems on their own by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information processing and analysis, and is capable of exercising this ability.
Ability		D2. Ability to develop strategies and plans for an organization based on statistical evidence by using a wide range of knowledge and skills related to data science.	Has acquired a sufficient level of ability to develop strategies and plans for an organization based on statistical evidence by using knowledge and skills related to data science, and is capable of exercising this ability.	Has acquired a standard level of ability to develop strategies and plans for an organization based on statistical evidence by using knowledge and skills related to data science, and is capable of exercising this ability.	Has acquired a minimum level of ability to develop strategies and plans for an organization based on statistical evidence by using knowledge and skills related to data science, and is capable of exercising this ability.
	(4)	13. Knowledge related to hardware and software, and the programming skills required for efficiently processing data.	Has acquired knowledge regarding hardware and software, and the programming skills required for efficiently processing data at a sufficient leve,I and is capable of exercising these skills.	Has acquired knowledge regarding hardware and software, and the programming skills required for efficiently processing data at a standard level, and is capable of exercising these skills.	Has acquired knowledge regarding hardware and software, and the programming skills required for efficiently processing data at a minimum level, and is capable of exercising these skills.

		Academic Achievements		Evaluation Criteria	
		Evaluation Items	Excellent	Very Good	Good
	(1)	C2. Skills for communication, reading, and writing in English, capabilities required for giving a good, clear oral presentation, and documentation and communication skills that contribute to active discussion.	Has acquired skills for communication in English, and the presentation and documentation skills required for research activities at a sufficient level, and is capable of exercising these skills.	Has acquired skills for communication in English, and the presentation and documentation skills required for research activities at a standard level, and is capable of exercising these skills.	Has acquired skills for communication in English, and the presentation and documentation skills required for research activities at a minimum level, and is capable of exercising these skills.
ive capability	(2)	D3. Ability to examine social needs and issues which are interlinked in a complex manner, using a top-down view to solve the problems through quantitative and logical thinking based on data, diverse perspectives, and advanced skills in information processing and analysis.	Has acquired the ability to solve problems by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information analysis at a sufficient level, and is capable of exercising these skills.	Has acquired the ability to solve problems by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information analysis at a standard level, and is capable of exercising these skills.	Has acquired the ability to solve problems by quantitative and logical thinking based on data, diverse perspectives, and advanced skills for information analysis at a minimum level, and is capable of exercising these skills.
Comprehensiv	(3)	12. Ability to provide the most appropriate system solution to a cross-sectional problem in the diversified and complicated information society based on the many forms of cutting edge information technology.	Has a sufficient level of ability to provide the most appropriate system solution to a cross-sectional problem in the information society based on the many forms of cutting edge information technology, and is able to exercise this ability.	Has a standard level of ability to provide the most appropriate system solution to a cross-sectional problem in the information society based on the many forms of cutting edge information technology, and is able to exercise this ability.	Has a minimum level of ability to provide the most appropriate system solution to a cross-sectional problem in the information society based on the many forms of cutting edge information technology, and is able to exercise this ability.
	(4)	E. Creative and logical thinking ability for analyzing practical issues and challenges in order to provide rational solutions that match social needs, as well as the capability to realize these solutions.	and logical thinking required for analyzing practical issues and challenges to provide a rational solution	Has acquired a standard level of ability for creative and logical thinking required for analyzing practical issues and challenges to provide a rational solution that matches social needs, as well as the capabilities for realizing the solution, and is capable of exercising this ability.	Has acquired a minimum level of ability for creative and logical thinking required for analyzing practical issues and challenges to provide a rational solution that matches social needs, as well as the capabilities for realizing the solution, and is capable of exercising this ability.

Placement of the Liberal Arts Education in the Major Program

The liberal arts education in this program aims to build the academic foundation required for the specialized education. Students take such subjects as foreign language subjects and disciplinary subjects in order to develop deep humanity, flexibility, and profound intelligence to foster the basic qualifications and abilities required for working globally in an international society. In addition, they acquire the knowledge and skills that constitute the basis of the specialized education in the fundamental subjects related to such things as mathematics and statistical data analysis.

														valuati		ns										4
					nowled C1		Unde D1		ing) I1	(1)	A		oilities) B	and Sk	tills D2	(4)	13	(1)	C2		rehen D3		bilities) I2) E	Total weighted values of evaluation items in the
				Weighte	1	(2) Weighte	DI	Weighte	/ 11	Weighte	Λ	Weighte	/ Б	Weighte	D2	Weighte	15	(1) Weighte	C2	(2) Weighte	DJ	Weighte	/ 12	Weighte	L	d val
Subject Type	Class Subjects	Credits	Period	d values of	Weights	d values of	Weights ed	d values of	Weights	d values of	Weights ed	d values of	Weights	d values	Weights	d values of	Weights	d values of	Weights	d values	Weights	d values of	Weights	d values of	Weights ed	ighte on it
				evaluati on items	values of evaluati	evaluati on items	values of	evaluati on items	values of evaluati	al we																
				in the subject	on items	in the subject		in the subject	on items	in the subject	on items	in the subject	on items	in the subject	on items		on items	Tota								
Liberal Arts Education	Introduction to Heliconia, Edication	2	1semester- 1T		1											· ·		,						Ė		100
	Introduction to University Education			100						05	_	0.5												0.5	_	-
	Introductory Seminar for First-Year Students	2	1semester-1T	25	1					25	1	25	1											25	1	100
	Peace Science Courses	2	1 semester-2T	100	1																					100
	Area Courses	8	1semester-1T	100	1																					100
	Basic English UsageI	1	1 semester															100	1							100
	Basic English Usage II	1	2semester															100	1							100
	Communication I A	1	1 semester															100	1							100
	Communication I B	1	1 semester															100	1							100
	Communication II A	1	2semester															100	1							100
	Communication II B	1	2semester															100	1							100
Liberal Arts Education	Communication III A	1	3semester															100	1							100
Liberal Arts Education	Communication II B	1	3semester															100	1							100
	Communication III C	1	3semester															100	1							100
Liberal Arts Education	Basic Foreign LanguagesI	2	1 semester															100	1							100
Liberal Arts Education	Health and Sports Subject	2	1 semester	100	1																					100
Liberal Arts Education	Elements of Calculus	2	1semester-1T							50	1	50	1													100
Liberal Arts Education	Seminar in Basic Mathematics I	1	1 semester							50	1	50	1													100
Liberal Arts Education	Seminar in Basic Mathematics II	1	2semester							50	1	50	1													100
Liberal Arts Education	Statistical Data Analysis	2	1semester-1T							50	1	50	1													100
Liberal Arts Education	CalculusI	2	1semester-2T							50	-1	50	1													100
Liberal Arts Education	Calculus I II	2	2semester-1T							50	1	50	1													100
Liberal Arts Education	Linear Algebra I	2	1semester-2T							50	1	50	1													100
Liberal Arts Education	Linear Algebra II	2	2semester-1T							50	1	50	1													100
Specialized Education	Discrete Mathematics I	2	1 semester-2T							50	1	50	1													100
	Discrete Mathematics II	2	1semester-3T							50	1	50	1													100
	Programming I	2	1 semester							50	1	50	1													100
	Programming II	2	2semester							50	1	50	1													100
	Programming III	2	3semester							50	1	50	1													100
		2	4semester							50	1		1													100
								0.4	4		-	50	-													_
	Theory of Automata and Languages	2	2semester-1T					34	1	33	1	33	1													100
		2	2semester-3T							33	1	33	1			34	1									100
	Programming Languages	2	2semester-4T	1						33	1	33	1			34	1									100
	Algorithms and Data Structures	2	2semester-3T	1						33	1	33	1									34	1			100
Specialized Education	Fundamentals of Probability Theory	2	1semester-4T			34	1			33	1	33	1													100
	Inferential Statistics	2	2semester-1T			34	1			33	1	33	1													100
	Linear Regression Model	2	2semester-2T			34	1			33	1	33	1													100
Specialized Education	Statistical Test	2	2semester-1T	1		34	1			33	1	33	1													100
Specialized Education	Generalized Linear Model	2	2semester-3T											100	1											100
Specialized Education	Stochastic Modeling	2	2semester-4T											100	1											100
	Numerical Computation	2	2semester-4T																			100	1			100
Specialized Education	Mathematical Programming	2	3semester																			100	1			100
Specialized Education	System Optimization	2	2semester-3T																			100	1			100
Specialized Education	Differential Equations	2	2semester-2T					100	1																	100
Specialized Education	Fourier Analysis	2	2semester-4T					100	1																	100
Specialized Education	Multivariate Analysis	2	2semester-3T			100	1																			100
Specialized Education	Basic and practice in Categorical data analysis	2	2semester-2T																	100	1					100
Specialized Education	Computer Architecture	2	2semester-4T													100	1									100
	Operating Systems	2	2semester-3T													100	1									100
Specialized Education		2	2semester-4T					100	1																	100
		2	2semester-2T																			100	1			100
	Information Theory	2	2semester-1T					100	1																	100
			3semester-1T															100	1							100
Specialized Education	Practical English I	1																								

													Е	valuati	on ite	ms										
						ge and								and Sk								sive Al				ilues of in the
				(1)	C1	(2)	D1	(3)) I1	(1)) A	(2)) B	(3)	D2	(4)	I3	(1)	C2	(2)	D3	(3)	I2	(4) E	in all
Specialized Education	Informatics and data science, Exercise I	1	3semester-1T							33	1	33	1			34	1									100
Specialized Education	Informatics and data science, Exercise II	1	3semester-2T							33	1	33	1			34	1									100
Specialized Education	Informatics and data science, Exercise III	1	3semester-3T			34	1			33	1	33	1													100
Specialized Education	Informatics and data science,	1	3semester-4T			34	1			33	1	33	1													100
Specialized Education	Theory of Computing	2	3semester-1T					50	1	50	1															100
Specialized Education	Image Processing	2	3semester-2T													100	1									100
Specialized Education	Visual Computing	2	3semester-3T													100	1									100
Specialized Education	Artificial Intelligence and Machine Learning	2	3semester-3T					100	1																	100
Specialized Education	Computer Network	2	3semester-4T							50	1					50	1									100
Specialized Education	Human Computer Interaction	2	3semester-3T													100	1									100
Specialized Education	Parallel and Distributed Processing	2	3semester-3T													100	1									100
Specialized Education	Software Management	2	3semester-2T																			100	1			100
Specialized Education	Natural Language Processing	2	3semester-2T					100	1																	100
Specialized Education	Information Society and Security	2	3semester-2T																			100	1			100
Specialized Education	Data Mining	2	3semester-1T			50	1			50	1															100
Specialized Education	Survey design	2	3semester-1T											100	1											100
Specialized Education	Nonparametric analysis	2	3semester-2T			50	1			50	1															100
Specialized Education	Big Data	2	3semester-4T							50	1									50	1					100
Specialized Education	Behaviormetrics	2	3semester-2T			100	1																			100
Specialized Education	Econometrics	2	3semester-2T																	100	1					100
Specialized Education	Time Series Analysis	2	3semester-3T											100	1											100
Specialized Education	Biostatistics	2	3semester-2T																	100	1					100
Specialized Education	Biomedical Statistics	2	3semester-3T																	100	1					100
Specialized Education	Stochastic Processes	2	3semester-4T																	100	1					100
Specialized Education	Financial Engineering	2	3semester-4T																	100	1					100
Specialized Education	Data Analysis for Medical and Welfare Policies	2	3semester-4T											100	1											100
Specialized Education	Society and Data Analysis	2	3semester-3T																	100	1					100
Specialized Education	Total Quality Management and Data Analysis	2	3semester-3T																	100	1					100
Specialized Education	Education Policy and Data Analysis	2	3semester-4T											100	1											100
Specialized Education	Data Science Seminar I	1	4semester-1T			33	1							33	1					34	1					100
Specialized Education	Data Science Seminar II	1	4semester-2T			33	1							33	1					34	1					100
Specialized Education	Informatics Seminar I	1	4semester-1T					33	1							33	1					34	1			100
Specialized Education	Informatics Seminar II	1	4semester-2T					33	1							33	1					34	1			100
Specialized Education	Graduation thesis	3	8 semester											50	1									50	1	100

Sheet 4

Curriculum Map of Informatics and Data Science Program

Academic Achievement		year		year	3rc	l year	4th	year
Evaluation Itemas	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
(1) C1. Knowledge and	(1T)Introduction to University Education							
capabilities required for solving	(1T)Introductory Seminar for First-Year Students							
problems, while understanding	(1T)Area courses							
that various problems of human	(1T)Health and Sports Courses							
beings, societies, and individuals	(2T)Peace Science Courses							
can be interpreted in different								
ways according social conditions, cultures, etc.								
(2) D1. Knowledge and skills		(m) 7	(1T)Inferential Statistics	(2T)Ml	(1T)Data Mining		(1T)Data Science Seminar I	
required for understanding the		(4T)Fundamentals of Probability Theory	(1T)Statistical Test	(3T)Multivariate Analysis		(3T)Informatics and data science, Exercise		
theoretical system of statistics and					(2T)Nonparametric analysis	(4T)Informatics and data science, Exercise	(2TData Science Seminar	
data analysis, and for precisely			(2T)Linear Regression Model		(2T)Behaviormetrics			
and efficiently analyzing								
စ္က qualitative/quantitative								
information in big data. (3) II.Knowledge and ability				(->-				
required for collecting and			(1T)Theory of Automata and Languages	(4T)Fourier Analysis	(1T)Theory of Computing	(3T)Artificial Intelligence and Machine Learning	(1T)Informatics Seminar	
processing high-dimensional data			(1T)Information Theory	(4T)Databases	(2T)Natural Language Processing		(2T)Informatics Seminar	
using information processing			(2T)Differential Equations					
technologies based on scientific								
logic, while understanding the								
theoretical system that forms the								
hasis of informatics	a		D	D				
(1) A. Skills related to the	Seminar in Mathematics	Seminar in Mathematics	Programming	Programming	(1T)Informatics and data science, Exercise I	(3T)Informatics and data science, Exercise		
development of an information	Programming (1T)Elements of Calculus	Programming (3T)Calculus	(1T)Theory of Automata and Languages (1T)Inferential Statistics	(3T)Digital Circuit Design	(1T)Theory of Computing (1T)Data Mining	(4T)Informatics and data science, Exercise (4T)Computer Network		
infrastructure, information	(11) Elements of Calculus (11) Introductory Seminar for First-Year Students	(3T)Linear Algebra	(1T)Statistical Test	(3T)Algorithms and Data Structures		(4T)Big Data		
processing techniques, and	(1T)Statistical Data Analysis	(3T)Discrete MathematicsII	(2T)Linear Regression Model	(4T)Programming Languages	(2T)Informatics and data science, Exercise	(41)Dig Data		
technology for producing new	(2T)Calculus	(4T)Fundamentals of Probability Theory	(21)Linear Regression Model		(2T)Nonparametric analysis			
added value through data	(2T)Linear Algebra	(4T)Fundamentals of Probability Theory						
analysis.	(2T)Discrete MathematicsI							
	Seminar in Mathematics	Seminar in Mathematics	Programming	Programming	(1T)Informatics and data science, Exercise	(970) of the state		
(2) B. Ability to identify and solve	Programming Programming	Programming Programming	(1T)Theory of Automata and Languages	(3T)Digital Circuit Design	(2T)Informatics and data science, Exercise (2T)Informatics and data science, Exercise	(3T)Informatics and data science, Exercise (4T)Informatics and data science, Exercise		
new problems on their own by quantitative and logical thinking	(1T)Elements of Calculus	(3T)Calculus	(1T)Inferential Statistics	(3T)Algorithms and Data Structures	A SCIENCE PARTIES	and that Science, Exercise		
quantitative and logical thinking	(1T)Introductory Seminar for First-Year Students	(3T)Linear Algebra	(1T)Statistical Test	(4T)Programming Languages				
based on data, diverse	·		(2T)Linear Regression					
ದ nerspectives and advanced skills	(1T)Statistical Data Analysis	(3T)Discrete MathematicsII	Model					
for information processing and	(2T)Calculus	(4T)Fundamentals of Probability Theory						
for information processing and analysis.	(2T)Linear Algebra							
Ab	(2T)Discrete MathematicsI							
(3) D2. Ability to develop				(3T)Generalized Linear Model	(1T)Survey design	(3T)Time Series Analysis	(1T)Data Science Seminar	
strategies and plans for an				(4T)Stochastic Modeling		(4T)Data Analysis for Medical and Welfare Policies	(2T)Data Science Seminar	
organization based on statistical						(4T)Education Policy and Data Analysis		

kı	vidence by using a wide range of nowledge and skills related to ata science.								
(4	4) I3. Knowledge related to				(3T)Digital Circuit Design	(1T)Informatics and data science, Exercise	(3T)Visual Computing	(1T)Informatics Seminar	
	ardware and software, and the				(3T)Operating Systems	(2T)Informatics and data science, Exercise	(3T)Human Computer Interaction	(2T)Informatics Seminar	
	rogramming skills required for				(4T)Programming Languages	(2T)Image Processing	(3T)Parallel and Distributed Processing		
ef	fficiently processing data.				(4T)Computer Architecture		(4T)Computer Network		
(1	1) C2. Skills for communication,	Basic English Usage	Basic English Usage	Communication		(1T)Practical English I	(3T)Practical English		Graduation Thesis
	9,	Communication	Communication	Communication					
		Communication	Communication	Communication					
		Basic Foreign Languages							
	ocumentation and								
	ommunication skills that								
	ontribute to active discussion.								
	2) D3. Ability to examine social			(2T)Basic and practice in Categorical data analysis		(2T)Econometrics	(3T)Biomedical Statistics	(1T)Data Science Seminar	
	eeds and issues which are					(2T)Biostatistics	(3T)Society and Data Analysis	(2T)Data Science Seminar	
	nterlinked in a complex manner,						(3T)Total Quality Management and Data Analysis		
is us	sing a top-down view to solve the roblems through quantitative						(4T)Big Data		
	nd logical thinking based on						(4T)Stochastic Processes		
A A	ata, diverse perspectives, and								
e a	dvanced skills in information						(4T)Financial Engineering		
is c	rocessing and analysis.								
le (5	B) I2. Ability to provide the most			Mathematical Programming	(3T)Algorithms and Data Structures	(2T)Software Management		(1T)Informatics Seminar	
Comprehensive	ppropriate system solution to a			(2T)Software Engineering	(3T)System Optimization	(2T)Information Society and Security		(2T)Informatics Seminar	
E cr	ross-sectional problem in the			(21)Boltware Engineering	(4T)Numerical Computation	(21) Information Society and Security		(21) mormanes Demmar	
දි di	iversified and complicated				(41)/Vallierical Computation				
ir	nformation society based on the								
	nany forms of cutting edge								
in	nformation technology.								
	4) E. Creative and logical	(1T)Introductory Seminar for First-Year Students							Graduation Thesis
	hinking ability for analyzing								
	ractical issues and challenges in								
	rder to provide rational solutions								
	hat match social needs, as well as								
tl									
	he capability to realize these olutions.								

Ex Liberal Arts Education Specialized Core Subject Specialized Subjects

Graduation Thesis

Type of course registration in parenthesis is as Data Science and Informatics