Attached Table No. 2 (Related to Article 5) Specialized Courses

(For students who enroll therein after AY2022)

Notes : shaded Courses shaded in the table are "SR (strongly recommended courses)"
※1 Academic Credits, etc. of "07 Graduate School Courses" are set by the Graduate School Regulation on the Completion of University of Aizu Graduate School Studies.

● Required Number of Credits for Graduation is allowed up to atotal of 4 credits

Fields
CS Computer Science
SY Computer Systems
CN Computer Network Systems
IT(SPR,CMV) Information Technologies
SE-DE Software Engineering

Classification of Courses (Categories)			Code	Course Name	SR	Academic Credits			Field recommend						Standard Year of Course Completion (num. of slots) 50min/slot												Note Opning Class for Retake
															1st year				2nd Year				3rd Year				4th Year			
Category	Sub-category					Required	Elective	Optional	CS	SY	CN	IT-SPR	IT-CMV	SE-DE	S1		S2		S1		S2		S1		S2		S1		S2		
															Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Specialized Courses	Specialized Fundamental Courses	Mathematics (MA)	MA01	Linear Algebra I	○		2								6(Q1/2)															Q3
			MA02	Linear Algebra II	○		2										6(Q3/4)													Q1
			MA03	Calculus I	○		2								6(Q1/2)															Q4
			MA04	Calculus II	○		2										6(Q3/4)													Q2
			MA05	Fourier Analysis			2												4											-
			MA06	Complex Analysis			2															4								-
			MA07	Probability and Statistics	○		2												4											-
			MA08	Applied Algebra			2		○			○	○											4						-
			MA09	Mathematical Logic			2		○														4							-
			MA10	Introduction to Topology			2																		4					-
			MA11	Applied Geometry and Topology			2																			4				-
		Natural Science (NS)	NS01	Dynamics	○		2									8														Q3
			NS02	Electromagnetism	○		2											8												-
			NS03	Quantum Mechanics			2												4											-
			NS04	Semiconductor Devices			2														4									-
			NS05	Thermodynamics and Statistical Mechanics			2													4										-
		Computer Fundamentals (LI)	LI01	Computer Literacy	○		4								8															-
			LI03	Guidance of Computer Science and Engineering	○		2								4															-
			LI04	Introduction to Computer Systems	○		2										4													-
			LI06	Information Security	○		2										4													-
			LI07	Information and Occupations				2																				4(Int)			-
			LI08	Information Ethics	○		2								4															-
			LI09	Fundamentals of System Development and Project Management			2																					4			-
			LI10	Introduction to Multimedia Systems	○		2															4									-
			LI11	Introduction to Computer Network	○		2														4										-
			LI12	Creativity Studio			2												2(Int)												
			LI13	CSE Exercise I			3												3(S)												-
			LI14	CSE Exercise II			3														3(S)										-
		Programming Languages (PL)	PL01	Introduction to Programming	○		4									8															-
			PL02	C Programming	○		4										8														-
			PL03	Java Programming I	○		4												8												Q4
			PL04	C++ Programming			3		○			○	○	○											6						-
			PL05	Computer Languages			3																					6			-
			PL06	Java Programming II			3							○									6								-
		Foundations of Computer Science & Engineering (FU)	FU01	Algorithms and Data Structures I	○		4											8													-
			FU02	Information Theory and Data Compression			3		○		○	○	○												6						-
			FU03	Discrete Systems	○		3													6											-
			FU04	Logic Circuit Design	○		4														8										-
			FU05	Computer Architecture	○		4																8								-
			FU06	Operating Systems	○		4															8									-
			FU08	Automata and Languages	○		3															6									-
			FU09	Algorithms and Data Structures II			3		○	○	○	○	○	○										6							-
			FU10	Language Processing Systems			3																					6			-
			FU11	Numerical Analysis			3		○			○	○													6					-
			FU14	Introduction to Software Engineering	○		3																6								-
			FU15	Introduction to Data Management	○		3													6											-

Classification of Courses (Categories)			Code	Course Name	SR	Academic Credits			Field recommend						Standard Year of Course Completion (num. of slots) 50min/slot												Note Opning Class for Retake
															1st year				2nd Year				3rd Year				4th Year			
Category	Sub-category					Required	Elective	Optional	CS	SY	CN	IT-SPR	IT-CMV	SE-DE	S1		S2		S1		S2		S1		S2		S1		S2		
															Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Courses	Advanced Courses	Computer Systems (SY)	SY02	Electronics			4			○																8					-
			SY04	Embedded Systems			4			○																8					-
			SY05	Parallel Computer Systems			3			○															6						-
			SY06	VLSI Design			2			○													4								-
			SY07	Advanced Logic Circuit Design			3			○													6								-
		Computer Network Systems (CN)	CN02	Network Security			3				○												6								-
			CN03	Network Programming			3				○														6						-
			CN04	Wireless Networking			2				○															4					-
			CN05	Computer and Network System Modeling and Simulation			3				○															6					-
		Applications (IT)	IT01	Artificial Intelligence			4					○	○												8						-
			IT02	Computer Graphics			3		○			○	○											6							-
			IT03	Image Processing			3					○	○																6			-
			IT05	Robotics and Automatic Control			3						○															6				-
			IT06	Human Interface and Virtual Reality			3					○	○															6				-
			IT08	Signal Processing and Linear System			4		○	○		○										8									-
			IT09	Sound and Audio Processing			3					○															6					-
			IT10	Geometory for Visual Computing			3						○									6										-
			IT11	Information Retrieval and Natural Language Processing			3		○			○														6						-
		Software Engineering (SE)	SE01	Web Engineering			3							○									6								-
			SE04	Advanced Software Engineering			3							○												6						-
			SE05	Software Studio			3							○													3(S)					-
			SE06	Concurrent and distributed systems			3							○												6						-
			SE07	Introduction to Data Science with Python			3							○									6									-
			SE08	Introduction to Big Data Analytics			3							○											6							-
		Others (OT)	OT01	Basic Knowledge Course on Starting Up Ventures I, II			2 each												4												-
			OT02	Ventures Experience Workshops ①~④			1 each												2(S)												-
			OT03	SCCP				1 each							2(S)																-
			OT05	Career Design I				1							2(S)																-
			OT06	Career Design II				1																	2(S)						-
			OT07	Graduate School Courses ※				※1																					※		-
			OT08	TOEIC Preparation Course(S1, S2)				1 each							2(S)																-
			OT09	Extracurricular Activity Course I			●1 each								2(Int)																-
			OT10	Extracurricular Activity Course II			●2 each								4(Int)																
			OT11	ICT Ventures Startup and Management			2								4(Q3)																-
	Practical Projects (PP)		IE01	Integrated Exercise for Systems I			3		○	○	○	○	○	○								3(S)									-
			IE02	Integrated Exercise for Systems II			3		○	○	○	○	○	○									3(S)								-
			IE03	Integrated Exercise for Software I			3		○	○	○	○	○	○								3(S)									-
			IE04	Integrated Exercise for Software II			3		○	○	○	○	○	○									3(S)								-
Graduation Thesis (GT)			GT01	Graduation Thesis		8																									

Attached Table No. 2 (Related to Article 5) Specialized Courses

(For students who enroll therein before AY2021)

Notes : shaded Courses shaded in the table are "SR (strongly recommended courses)"
※1 Academic Credits, etc. of "07 Graduate School Courses" are set by the Graduate School Regulation on the Completion of University of Aizu Graduate School Studies.
※2 To take two courses out of Integrated Exercise

● Required Number of Credits for Graduation is allowed up to atotal of 4 credits

Fields
CS Computer Science
SY Computer Systems
CN Computer Network Systems
IT(SPR,CMV) Information Technologies
SE-DE Software Engineering

Classification of Courses (Categories)			Code	Course Name	SR	Academic Credits			Field recommend						Standard Year of Course Completion (num. of slots) 50min/slot												Note Opning Class for Retake
															1st year				2nd Year				3rd year				4th Year			
Category	Sub-category					Required	Elective	Optional	CS	SY	CN	IT-SPR	IT-CMV	SE-DE	S1		S2		S1		S2		S1		S2		S1		S2		
															Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Specialized Courses	Specialized Fundamental Courses	Mathematics (MA)	MA01	Linear Algebra I	○		2								6(Q1/2)															Q3
			MA02	Linear Algebra II	○		2										6(Q3/4)													Q1
			MA03	Calculus I	○		2								6(Q1/2)															Q4
			MA04	Calculus II	○		2										6(Q3/4)													Q2
			MA05	Fourier Analysis			2												4											-
			MA06	Complex Analysis			2															4								-
			MA07	Probability and Statistics	○		2												4											-
			MA08	Applied Algebra			2		○			○	○											4						-
			MA09	Mathematical Logic			2		○														4							-
			MA10	Introduction to Topology			2																		4					-
			MA11	Applied Geometry and Topology			2																			4				-
		Natural Science (NS)	NS01	Dynamics	○		2									8														Q3
			NS02	Electromagnetism	○		2											8												-
			NS03	Quantum Mechanics			2												4											-
			NS04	Semiconductor Devices			2														4									-
			NS05	Thermodynamics and Statistical Mechanics			2													4										-
		Computer Fundamentals (LI)	LI01	Computer Literacy	○		4								8															-
			LI03	Guidance of Computer Science and Engineering	○		2								4															-
			LI04	Introduction to Computer Systems	○		2										4													-
			LI06	Information Security	○		2										4													-
			LI07	Information and Occupations				2																				4(Int)			-
			LI08	Information Ethics	○		2								4															-
			LI09	Fundamentals of System Development and Project Management			2																					4			-
			LI10	Introduction to Multimedia Systems	○		2															4									-
			LI11	Introduction to Computer Network	○		2														4										-
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			LI14	CSE Exercise II			3														3(S)										-
		Programming Languages (PL)	PL01	Introduction to Programming	○		4									8														-
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			PL03	Java Programming I	○		4												8											Q4
			PL04	C++ Programming			3		○			○	○	○											6					-
			PL05	Computer Languages			3																					6			-
			PL06	Java Programming II			3							○									6								-
		Foundations of Computer Science & Engineering (FU)	FU01	Algorithms and Data Structures I	○		4											8												-
			FU02	Information Theory and Data Compression			3		○		○	○	○												6					-
			FU03	Discrete Systems	○		3													6										-
			FU04	Logic Circuit Design	○		4														8									-
			FU05	Computer Architecture	○		4																8							-
			FU06	Operating Systems	○		4															8								-
			FU08	Automata and Languages	○		3															6								-
			FU09	Algorithms and Data Structures II			3		○	○	○	○	○	○										6							-
			FU10	Language Processing Systems			3																					6			-
			FU11	Numerical Analysis			3		○			○	○													6					-
			FU14	Introduction to Software Engineering	○		3																6								-
			FU15	Introduction to Data Management	○		3													6											-

Classification of Courses (Categories)			Code	Course Name	SR	Academic Credits			Field recommend						Standard Year of Course Completion (num. of slots) 50min/slot												Note Opning Class for Retake
															1st year				2nd Year				3rd year				4th Year			
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															Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Courses	Advanced Courses	Computer Systems (SY)	SY02	Electronics			4			○																8					-
			SY04	Embedded Systems			4			○																8					-
			SY05	Parallel Computer Systems			3			○															6						-
			SY06	VLSI Design			2			○														4							-
			SY07	Advanced Logic Circuit Design			3			○														6							-
		Computer Network Systems (CN)	CN02	Network Security			3				○													6							-
			CN03	Network Programming			3				○														6						-
			CN04	Wireless Networking			2				○															4					-
			CN05	Computer and Network System Modeling and Simulation			3				○															6					-
		Applications (IT)	IT01	Artificial Intelligence			4					○	○													8					-
			IT02	Computer Graphics			3		○			○	○												6						-
			IT03	Image Processing			3					○	○																6			-
			IT05	Robotics and Automatic Control			3						○																6			-
			IT06	Human Interface and Virtual Reality			3					○	○																6			-
			IT08	Signal Processing and Linear System			4		○	○		○											8								-
			IT09	Sound and Audio Processing			3					○																6				-
			IT10	Geometory for Visual Computing			3						○										6									-
			IT11	Information Retrieval and Natural Language Processing			3		○			○															6					-
		Software Engineering (SE)	SE01	Web Engineering			3							○											6							-
			SE04	Advanced Software Engineering			3							○													6					-
			SE05	Software Studio			3							○														3(S)				-
			SE06	Concurrent and distributed systems			3							○													6					-
			SE07	Introduction to Data Science with Python			3							○											6							-
			SE08	Introduction to Big Data Analytics			3							○												6						-
		Integrated Exercise(IE)	IE01	Integrated Exercise for Systems I			3		○	○	○	○※2	○※2	○									3(S)									-
			IE02	Integrated Exercise for Systems II			3		○	○	○	○※2	○※2	○												3(S)						-
			IE03	Integrated Exercise for Software I			3		○	○	○	○※2	○※2	○									3(S)									-
			IE04	Integrated Exercise for Software II			3		○	○	○	○※2	○※2	○												3(S)						-
		Others (OT)	OT01	Basic Knowledge Course on Starting Up Ventures I, II			2 each												4													-
			OT02	Ventures Experience Workshops ①~④			1 each												2(S)													-
			OT03	SCCP				1 each							2(S)																	-
			OT05	Career Design I				1							2(S)																	-
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			OT07	Graduate School Courses ※				※1																			※					-
			OT08	TOEIC Preparation Course(S1, S2)				1 each							2(S)																	-
			OT09	Extracurricular Activity Course I			●1 each								2(Int)																	-
			OT10	Extracurricular Activity Course II			●2 each								4(Int)																	
			OT11	ICT Ventures Startup and Management			2								4(Q3)																	-
Graduation Thesis (GT)			GT01	Graduation Thesis		8																									