

Course List (Specialized Courses)

(For students who will remain enrolled therein after AY2018 onwards)

Notes: shaded Courses shaded in the table are "SR (strongly recommended courses)"
※1 Academic Credits, etc. of "O7 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
※3 Open in AY2018 only
※4 Not open in AY2018
● Required Number of Credits for Graduation is allowed up to total 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)			Course Name	SR	Academic Credits			Field recommend										Standard Year of Course Completion (num. of slots) 50min/slot																Items		Note(1) Opening Class in AY2018 (Retake)	Note(2)
Category	Sub-category				Required	Elective	Optional	CS	SY	CN	IT-S	P	R	IT-C	M	V	SE-DE	1st year				2nd Year				3rd year				4th Year				Lec	Ex		
Specialized Courses	Mathematics (MA)	MA01 Linear Algebra I	○	2														6 (Q1/2)										4	2	Q3							
		MA02 Linear Algebra II	○	2																6 (Q3/4)								4	2	Q1							
		MA03 Calculus I	○	2															6 (Q1/2)									4	2	Q4							
		MA04 Calculus II	○	2																	6 (Q3/4)								4	2	Q2						
		MA05 Fourier Analysis		2																			4						4	—	—						
		MA06 Complex Analysis		2																				4					4	—	—						
		MA07 Probability and Statistics	○	2																				4					4	—	—						
		MA08 Applied Algebra※4		2				○				○		○													4			4	—	—					
		MA09 Mathematical Logic		2				○																			4			4	—	—					
		MA10 Introduction to Topology※4		2																							4			4	—	—					
		MA11 Applied Geometry and Topology		2																							4			4	—	—					
	Natural Science (NS)	NS01 Dynamics	○	2															8										4	4	Q3						
		NS02 Electromagnetism	○	2																	8								4	4	—						
		NS03 Quantum Mechanics		2																	4								4	—	—						
		NS04 Semiconductor Devices		2																		4							4	—	—						
		NS05 Thermodynamics and Statistical Mechanics		2																		4							4	—	—						
		NS07 Introduction to Optoelectronics※4		2																						4			4	—	—						
		LI01 Computer Literacy	○	4															8										2	6	—						
	Computer Fundamentals (LI)	LI03 Guidance of Computer Science and Engineering	○	2															4										4	—	—						
		LI04 Introduction to Computer Systems	○	2																	4								4	—	—						
		LI06 Information Security	○	2																	4								4	—	—						
		LI07 Information and Occupations			2																					4 (Int)			4	—	—						
		LI08 Information Ethics	○	2															4									4	—	—							
		LI09 Fundamentals of System Development and Project Management		2																							4		4	—	—						
		LI10 Introduction to Multimedia Systems	○	2																		4						4	—	—							
		LI11 Introduction to Computer Network	○	2																		4						4	—	—							
		LI12 Creativity Studio		2																									—	—	—						
		LI13 CSE Exercise I		3																		3 (S)							—	3	—						
		LI14 CSE Exercise II		3																									—	3	—						
	Programming Languages (PL)	PL01 Introduction to Programming	○	4															8										4	4	—						
		PL02 C Programming	○	4																8									4	4	—						
		PL03 Java Programming I	○	4																	8								4	4	Q4						
		PL04 C++ Programming※4		3				○				○		○		○										6			4	2	—						
		PL05 Computer Languages		3																						6			4	2	—						
		PL06 Java Programming II		3																						6			4	2	—						
	Foundations of Computer Science & Engineering (FU)	FU01 Algorithms and Data Structures I	○	4																8									4	4	—						
		F01 Algorithms and Data Structures(Interim)※3	○	4																		8							4	4	—						
		FU02 Information Theory and Data Compression※4		3				○			○		○		○												6			4	2	—					
		FU03 Discrete Systems	○	3																	6								4	2	—						
		FU04 Logic Circuit Design	○	4																		8							4	4	—						
		FU05 Computer Architecture	○	4																			8						4	4	—						
		FU06 Operating Systems	○	4																									4	4	Q1						
		F07 Database Systems(Interim)※3																											4	2	—	Applicants must be enrolled before 2015.					
		FU08 Automata and Languages	○	3																								6		4	2	—					
		F08 Automata and Languages(Interim)※3	○	3																								6		4	2	—					
		FU09 Algorithms and Data Structures II		3				○	○		○		○		○		○									6			4	2	—						
		FU10 Language Processing Systems		3																							6		4	2	—						
		FU11 Numerical Analysis		3				○				○		○													6		4	2	—						
		FU14 Introduction to Software Engineering	○	3																						6			4	2	—						
		FU15 Introduction to Data Management	○	3																						6			4	2	—						
	Computer Systems (SY)	SY02 Electronics		4					○																		8			4	4	—					
		SY04 Embedded Systems		4					○																		8			4	4	—					
		S04 Embedded Systems(Interim)※3		3																								8		4	4	—					
		SY05 Parallel Computer Systems		3					○																	6			4	2	—						
		SY06 VLSI Design		2					○																	4			2	2	—						
		SY07 Advanced Logic Circuit Design		3					○																				4	2	—						
		CN02 Network Security		3							○																		4	2	—						
	Computer Network Systems (CN)	CN03 Network Programming		3							○																		4	2	—						
		N03 Computer Network Organization and Design		3																									4	2	—						
		CN04 Wireless Networking		2								○																4	—	—	—						
		CN05 Computer and Network System Modeling and Simulation		3								○																	4	2	—						
		Applications (IT)	IT01 Artificial Intelligence		4																									4	4	—					
	IT02 Computer Graphics			3				○																					4	2	—						
	IT03 Image Processing			3																									4	2	—						
A04 Biomedical Information Technology(Interim)※3			3																									4	2	—							
IT05 Robotics and Automatic Control			3																									4	2	—							
IT06 Human Interface and Virtual Reality			3																									4	2	—							
IT08 Signal Processing and Linear System			4				○	○																			4	4	—								
IT09 Sound and Audio Processing			3																								6		4	2	—						
IT10 Geometry for Visual Computing			3																								6		4	2	—						
IT11 Information Retrieval and Natural Language Processing			3				○				○																6		4	2	—						
Software Engineering (SE)	SE01 Web Engineering			3																									4	2	—						
	SE02 Web Data Modeling		3																									4	2	—							
	SE04 Advanced Software Engineering																																				