Master's Program Subject and Completion Requirements 2019 (Partially revised on October 1, 2019)

Department of Computer Science

Code	Classification	A completion requirements item name and subject name	Instructor	Unit	School hour a week				Unit multiplication method	Necessary lower limit units	Necessary lower limit units
					1st.Grade		2nd.Grade				
					Spring and Summer Terms	Fall and Winter Terms	Spring and Summer Terms	Fall and Winter Terms			
		Total							1+2	30	
		1.Advanced Liberal Arts Educational subjects (select from the attached list "「高度教養教育科目リスト(コンピュータサイエンス専攻)」)								2	
		2.Major Subjects・Advanced Global Literacy Educational subjects							(1)+(2)	28	
		(1)Core Subjects							(1,1)+(1,2)+(1,3)	22	
		(1,1)Core Subjects(Required)							Σ	4	
331321	M	Research on Computer Science Ia	All Staff	2	6						
331322	M	Research on Computer Science Ib	All Staff	2		6					
		(1,2)Core Subjects(Required Elective)							(1,2,1)or(1,2,2)	4	
		(1,2,1)Required Elective Subjects 1							Σ	0	
331312	M	Exercises on Computer science I	All Staff	2	4						
331313	M	Exercises on Computer science II	All Staff	2		4					
		(1,2,2)Required Elective Subjects 2							Σ	0	
331426	M	Introduction to Exercises on Information Engineering for Interactive Creation A	Taro Maeda Haruo Takemura Toru Fujiwara Hideyuki Ando Susumu Date Yuichi Ito	4	4	4					
		(1,3)Core Subjects(Elective)							Σ	0	
331003	M	Special Lectures on Information Science & Technology I	(Nobuyuki Shibano) (Hideharu Nakajima) (Yasue Kishino) (Hiroaki Sugiyama) (Masakazu Ishihata) (Masaya Hirashima) (Hiroshi Ban) (Yasushi Naruse)	2	2						
331004	M	Special Lectures on Information Science & Technology II	(Toshiyuki Kano) (Norihiko Taya)	2		2					
331303	M	Parallel Programming	Fumihiko Ino	2	2						
331304	M	Theory of Parallel Algorithms		2							
331305	M	Theory of Software Development	Katsuro Inoue Makoto Matsushita	2		2					
331307	M	Algorithm Design		2							
331308	M	Theory of Distributed System Software	Toshimitsu Masuzawa	2		2					
331310	M	Seminar on Computer Science I	All Staff	2	2						
331311	M	Seminar on Computer Science II	All Staff	2		2					
331318	M	Introduction to Intelligent System	Yasushi Makihara Daigo Muramatsu	2		2					
331319	M	Theory of Software Design	Shinji Kusumoto Yoshiki Higo	2	2						
331337	M	Image Recognition		2							
331323	M	Research on Computer Science IIa	All Staff	2			6				
331324	M	Research on Computer Science IIb	All Staff	2				6			
331325	G・M	Fundamentals of Computer Science	All Staff	2	2						
331326	M	Internship on Computer Science	All Staff (Except Collaborative Division)	2	3	3					
		(2)Elective subject							(2,1)+(2,2)+(2,3)	0	
		(2,1)Inter-disciplinary Subjects							Σ	0	
331005	M	Informartion Technology and Ethics	Staffs of dept. of Information Systems Engineering Staffs of dept. of Multimedia Engineering (Michio Nakanish)	2	2						
331006	G・M	English Presentation Skills	Bettina Wutzl	2	*2	*2					
331014	M	The Foundation of Intellectual Property (Focusing on Computer Science)	(Shuuichi Mukai) (Tsuyoshi Masuda) & Other	2		2					
331030	M	Innovation Management	Minoru Eto Yuko Sasahara	2	2						
331135	M	Topics in Frontiers of Mathematics	Susumu Ariki	2		2					
331222	M	Advenced Introduction to Information Pysicscal Science	All staff of dept. of Information and Physical Sciences	2	2						
331427	M	Embedded System Design		2							
331408	M	Concurrent Systems	Tatsuhiro Tsuchiya Hiroyuki Nakagawa	2	2						
331420	M	Dependable Systems		2							
331501	M	Information Network Design	Morito Matsuoka Shinichi Arakawa	2	2						
331507	M	Mobile Computing		2							
331508	M	Mobile Communication Protocols	Teruo Higashino Hirozumi Yamaguchi	2		2					
331511	M	Economics of Information Network	Teruo Higashino Hirozumi Yamaguchi (Keita Arai)	2	2						
331525	M	Advanced Introduction to Information Networking	All staff of dept. of Information Networking	2		2					
331635	M	Big Data Engineering	Makoto Onizuka Yuna Sasaki	2	2						
331636	M	Big Data Analytics		2							
331621	M	Information Security	Toru Fujiwara Kenji Yasunaga	2	2						
331622	M	Content Security		2							
331639	G・M	Studies on International Integrated Sciences	Leibnitz Kenji Ferdinand Peper Cruz Jason Paul	2	2						
331701	M	Bio-database Engineering	Hideo Matsuda	2	2						

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					Spring and Summer Terms	Fall and Winter Terms	Spring and Summer Terms	Fall and Winter Terms			
331702	M	Molecular Bio-information Analysis		2							
331720	M	Bio-network Engineering		2							
331721	M	Basic Theory of Bio-networks	Naoki Wakamiya	2	2						
331724	M	Introduction to Bioinformatic Engineering	All staff of dept. of Bioinformatic Engineering	2	2						
331732	M	Introduction to Integrated Biological and Information Engineering	Hiroshi Shimizu Fumio Matsuda Yoshihiro Toya Nobuyuki Okahashi	2	2						
331031	M	Humanware Fundamentals I M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2	2						
331032	M	Humanware Fundamentals II M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2		2					
331033	M	Humanware Innovation Creation M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2		2					
331034	M	Humanware Seminar M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2	1	1					
331035	M	Humanware Innovation Introduction M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2	1	1					
331036	M	Humanware Communication M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2			1	1			
331037	M	Humanware Laboratory Rotation M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2	1	1					
331038	M	Internship (Short Term) M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2	3	3					
331039	M	Internship (Long Term) M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	4	6	6					
		(2,2)Others								0	
		(2,3)Academic Internship Abroad							MAX{(2,3,1),(2,3,2),(2,3,3)}	0	
		(2,3,1)								0	
331040	G・M	Overseas Internship (Short Term) M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	2	3	3					
		(2,3,2)									
331025	G・M	Academic Internship Abroad M(S)	All Staff	4	6	6	(※6)				
331041	G・M	Overseas Internship (Long Term) M	Hiroshi Shimizu Naoki Wakamiya Takahiro Hara Kazufumi Hosoda MAHZOON HAMED	4	6	6					
		(2,3,3)								0	
331027	G・M	Academic Internship Abroad M(L)	All Staff	8	12	12	(※12)				

Note)

1. Σ= Integrate the total number of credits for subjects with a slant line directly below.
2. MAX= Integrate only one subject with the maximum number of credits.
3. The class with * is held twice a year. However, registration is limited according to the department.
4. The class is not offered this year when the instructor's name field is blank.
5. Requirements for Completion; Students must receive 30 credits or more from ~~this table~~ subjects designated by each department, and pass a final evaluation of their master's thesis.
   In the 30 credits, students must include ~~27~~ 22 credits of Major subjects, 1 credit of Advanced Global Literacy Educational subjects, and 2 credits of Advanced Liberal Arts Educational subjects.
6. M1 students can register Academic Internship AbroadM(S),M(L) from "fall and winter terms" through "spring and summer terms".
7. "M" in the classification column represents Major subjects, "G" represents Advanced Global Literacy Educational subjects, and "G・M" represents subjects with both Advanced Liberal Arts Educational and Major subjects' characteristics.
8. If you have acquired subjects with both Advanced Liberal Arts Educational and Major subjects' characteristics, the credits will be included preferentially for Advanced Global Literacy Educational subjects. If 1 credit of Advanced Global Literacy Educational subjects is already fulfilled, the credits will be included for Major subjects.
9. With regard to Advanced Liberal Arts Educational subjects and Advanced Global Literacy Educational subjects offered by other graduates schools (or other institutions) in Osaka university, the subjects approved by Department of Computer Science can be included for Requirements for Completion up to 2 credits for Advanced Liberal Arts and up to 1 credit for Advanced Global Literacy Educational subjects.
   For details, please refer the attached "「高度教養教育科目リスト(コンピュータサイエンス専攻)」「高度国際性涵養教育科目リスト(コンピュータサイエンス専攻)」.
10. Only Humanware Innovation Program students can register subjects from 331037 to 331041.