Master's Program Subject and Completion Requirements 2021

Department of Bioinformatic Engineering

Code	Classification	A completion requirements item name and subject name	Instructor	Unit	School hour a week 1st.Grade Spring and Summer Terms	1st.Grade Fall and Winter Terms	2nd.Grade Spring and Summer Terms	2nd.Grade Fall and Winter Terms	Unit multiplication method	Necessary lower limit units	Necessary lower limit units
		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（バイオ情報工学専攻）」")								2	
		2.Major Subjects・Advanced Global Literacy Educational subjects							(1)+(2)	28	
		(1)Core Subjects							(1,1)+(1,2)	22	
		(1,1)Core Subjects（Required）							Σ	4	
331725	M	Research on Bioinformatic Engineering Ia	All Staff	2	6						
331726	M	Research on Bioinformatic Engineering Ib	All Staff	2		6					
		(1,2)Core Subjects（Elective）							Σ	0	
331003	M	Special Lectures on Information Science & Technology I	(Nobuyuki Shibano) (Hideharu Nakajima) (Hiroaki Sugiyama) (Masakazu Ishihata) (Takashi Hattori) (Masaya Hirashima) (Hiroshi Ban) (Yasushi Naruse)	2	2						
331004	M	Special Lectures on Information Science & Technology II	(Toshiyuki Kano) (Norihiko Taya)	2		2					
331701	M	Bio-database Engineering	Hideo Matsuda Shigeto Senoo	2	4 (Spring)						
331702	M	Molecular Bio-information Analysis		2							
331703	M	Metabolic Information Engineering	Hiroshi Shimizu Yoshihiro Toya	2	2						
331707	M	Advanced Biosystems	Fumio Matsuda Nobuyuki Okahashi	2	2						
331709	M	Human Information Processing		2							
331711	M	Seminar on Bioinformatic Engineering I	All Staff	2	2						
331712	G・M	Seminar on Bioinformatic Engineering II	All Staff	2		2					
331713	M	Exercises on Bioinformatic Engineering I	All Staff	2	4						
331714	M	Exercises on Bioinformatic Engineering II	All Staff	2		4					
331426	M	Introduction to Exercises on Information Engineering for Interactive Creation A	Taro Maeda Haruo Takemura Toru Fujiwara Yuki Uranishi Susumu Date Yuichi Ito Masahiro Furukaw	4	4	4					
331719	M	Bioprocess Engineering		2							
331720	M	Bio-network Engineering		2							
331721	M	Basic Theory of Bio-networks	Naoki Wakamiya Masaki Ogura	2	2						
331722	M	Advanced Evolutional Systems		2							
331723	M	Human Information Engineering	Taro Maeda Masahiro Furukawa	2		2					
331724	M	Introduction to Bioinformatic Engineering	All Staff	2	2						
331732	M	Introduction to Integrated Biological and Information Engineering	Hiroshi Shimizu Fumio Matsuda Yoshihiro Toya Nobuyuki Okahashi	2	2						
331727	M	Research on Bioinformatic Engineering IIa	All Staff	2			6				
331728	M	Research on Bioinformatic Engineering IIb	All Staff	2				6			
331729	M	Internship on Bioinformatic Engineering	All Staff	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	2	2						
331006	G・M	English Presentation Skills	Bettina Wutzl	2	*2	*2					
331014	M	The Foundation of Intellectual Property (Focusing on Computer Science)	(Shuichi Mukai) (Tsuyoshi Masuda) & Other	2		2					
331030	M	Innovation Management	Minoru Eto Yuko Sasahara	2	2						
331135	M	Topics in Frontiers of Mathematics	Masaaki Wada	2		2					
331203	M	Computational Informatics	Takayuki Wada	2		2					

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					Spring and Summer Terms	Fall and Winter Terms	Spring and Summer Terms	Fall and Winter Terms			
331204	M	Mathematical Programming		2							
331225	M	Topics on Nonlinear Phenomena	Hideyuki Suzuki	2		2					
331208	M	Advanced Statistical Analysis	Hiroshi Morita	2		2					
331222	M	Advenced Introduction to Information Pysicscal Science	All staff of dept. of Information and Physical Sciences	2	2						
331303	M	Parallel Programming	Fumihiko Ino Masao Okita	2	2						
331308	M	Theory of Distributed System Software	Toshimitsu Masuzawa Taisuke Izumi	2		2					
331325	M	Fundamentals of Computer Science	All staff of dept. of Computer Science	2	2						
331404	M	Computer-Aided System-on-a-Chip Design	Takao Onoye Ittetsu Taniguchi Norio Ito Kimihiko Imamura Shohei Yamada	2	2						
331409	M	System Interface Design	Haruo Takemura	2	2						
331502	M	Multimedia Network	Shigeto Matsuoka Shin-ichi Arakawa	2		2					
331511	M	Economics of Information Network	Hirozumi Yamaguchi (Keita Arai)	2	2						
331525	M	Advanced Introduction to Information Networking	All staff of dept. of Information	2		2					
331635	M	Big Data Engineering	Makoto Onizuka Chuan Xiao	2	2						
331636	M	Big Data Analytics		2							
331621	M	Information Security	Toru Fujiwara Atsuo Inomata Kenji Yasunaga	2	2						
331639	G·M	Studies on International Integrated Sciences	Leibnitz Kenji Ferdinand Peper Cruz Jason Paul Miranda	2	2						
331730	M	Seminar on Biomedical Engineering	All staff of dept. of Bioinformatic Engineering	2	2						
331731	M	Exercises on Biomedical Informatics	All staff of dept. of Bioinformatic Engineering	1	2						
331031	M	Humanware Fundamentals I M	MAHZOON HAMED Satoru Iwasaki Taisuke Izumi Hiroshi Shimizu Takahiro Hara	2	2						
331032	M	Humanware Fundamentals II M	Satoru Iwasaki Taisuke Izumi Yusuke Ogura Ittetsu Taniguchi Shin-ichi Arakawa Kenji Yasunaga Nobuyuki Okahashi Takahiro Hara	2		2					
331033	M	Humanware Innovation Creation M	Toshimitsu Masuzawa Takahiro Hara Shigeru Kondo Hiroshi Ishiguro	2		2					
331034	M	Humanware Seminar M	Nobuyuki Okahashi Ittetsu Taniguchi Fumihiko Ino MAHZOON HAMED Shin-ichi Arakawa Satoru Iwasaki Hiroshi Shimizu	2	1	1					
331035	M	Humanware Innovation Introduction M	Tatsuhiro Tsuchiya Naoki Wakamiya	2	1	1					
331036	M	Humanware Communication M	Yusuke Ogura Shin-ichi Arakawa Takahiro Hara	2			1	1			
331037	M	Humanware Laboratory Rotation M	Fumihiko Ino Hiroshi Shimizu	2	1	1					
331038	M	Internship (Short Term) M	Kenji Yasunaga Naoki Wakamiya Satoru Iwasaki	2	3	3					
331039	M	Internship (Long Term) M	Kenji Yasunaga Naoki Wakamiya Satoru Iwasaki	4	6	6					

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					Spring and Summer Terms	Fall and Winter Terms	Spring and Summer Terms	Fall and Winter Terms			
		(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	Toru Fujiwara Satoru Iwasaki	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	Toru Fujiwara Satoru Iwasaki	4	6	6					
		(2,3,3)								0	
331027	G・M	Academic Internship Abroad M(L)	All Staff	8	12	12	(※12)				

Note1)

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, and pass a final evaluation of their master's thesis. In the 30 credits, students must include 27 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 Bioinformatic Engineering can be included for Requirements for Completion up to 2 credits for Advanced Liberal Arts Educational subjects and 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（バイオ情報工学専攻）」「高度国際性涵養教育科目リスト（バイオ情報工学専攻）」".
10. Only Humanware Innovation Program students can register subjects from 331037 to 331041.