Curriculum List (Undergraduate program)

Classification	Course No.	Computer Code	Course Name	Lecture;Lab.; Credit (Assignment)	Semester	Note
Mandatory Major	BiS200	41.200	Bioengineering Fundamentals	3:0:3(6)	Spring	
	BiS222	41.222	Molecular & Cellular Biology	3:0:3(6)	Fall	
	BiS301	41.301	Bioengineering Laboratory I	1:9:4(4)	Spring	
	BiS350	41.350	Bioengineering Laboratory II	1:9:4(4)	Fall	
Major Elective	BiS202	41.202	Cell Biology	3:0:3(4)	Fall	*BS202
	BiS208	41.208	Biochemistry II	3:0:3(3)	Fall	*BS208
	BiS221	41.221	General Biochemistry	3:0:3(6)	Spring	
	BiS223	41.223	Physical Principles in Biological Engineering	3:0:3(6)	Spring	
	BiS225	41.225	Anatomy & Physiology	3:0:3(6)	Spring	
	BiS232	41.232	Bio-Data Structures	3:0:3(6)	Fall	*CS206
	BiS252	41.252	Bioinstrumentation Fundamentals	3:0:3(6)	Fall	
	BiS321	41.321	Systems Biotechnology	3:0:3(6)	Spring	
	BiS328	41.328	Brain Science Fundamentals	3:0:3(6)	Fall	
	BiS332	41.332	Bio-Information Processing	3:0:3(6)	Spring,Fall	
	BiS335	41.335	Biomedical Statistics & Statistical Learning	3:0:3(6)	Spring,Fall	
	BiS340	41.340	Interdisciplinary Approach to Network Science	3:0:3(6)	Fall	
	BiS351	41.351	Bio-Signal Processing	3:0:3(6)	Spring	
	BiS352	41.352	System Modeling in Bioengineering	3:0:3(6)	Fall	
	BiS354	41.354	Analog Microelectronics Circuits	3:0:3(6)	Fall	
	BiS355	41.355	Digital Systems Laboratory and Bio-applications	3:0:3(6)	Fall	
	BiS371	41.371	Biofluidics	3:0:3(6)	Fall	
	BiS372	41.372	Dynamic Motion and Response	3:0:3(6)	Fall	
	BiS377	41.377	Biomechanics	3:0:3(6)	Spring	
	BiS400	41.400	Special Topics in Bio and Brain Engineering	3:0:3(6)	Spring,Fall	
	BiS401	41.401	Special Topics in Bio and Brain Engineering (1)	1:0:1(2)	Spring,Fall	
	BiS402	41.402	Special Topics in Bio and Brain Engineering (2)	2:0:2(4)	Spring,Fall	
	BiS410	41.410	Bioengineering Senior Project	1:6:3(3)	Spring	
	BiS422	41.422	Science Communication & Leadership	3:0:3(6)	Fall	
	BiS423	41.423	Molecular Biology	3:0:3(4)	Spring	*BS433
	BiS424	41.424	Instrumental Analysis for Biomaterials	3:0:3(6)	Fall	*CH463
	BiS425	41.425	Biotechnology Laboratory	1:6:3(3)	Spring,Fall	
	BiS427	41.427	Computational Neuroscience	3:0:3(6)	Spring	
	BiS428	41.428	Introduction to Clinical Neuroscience	3:0:3(6)	Spring,Fall	
	BiS437	41.437	Bio-Data Engineering	3:0:3(6)	Spring	
	BiS438	41.438	Bioinformatics	3:0:3(6)	Fall	
	BiS451	41.451	Cognitive Neuroscience	3:0:3(6)	Fall	
	BiS452	41.452	Biomedical Imaging	3:0:3(6)	Fall	
	BiS456	41.456	Methods for Neuroimaging	3:0:3(6)	Spring,Fall	
	BiS470	41.470	BioNano Engineering	3:0:3(6)	Spring	
	BiS471	41.471	Bio-inspired Systems	3:0:3(6)	Spring	
	BiS472	41.472	Micro Heat & Mass Transfer	3:0:3(4)	Fall	
	BiS473	41.473	BioNano Laboratory	0:9:3(6)	Fall	
	BiS481	41.481	Collective Intelligence in Biomedical Applications	3:0:3(6)	Fall	
Research	BiS490	41.490	Graduation Research	0:6:3		
	BiS495	41.495	Individual Study	0:6:1		
	BiS496	41.496	Seminar	1:0:1		

※ Notes 1) 400 level courses open to graduate students. (except 41.410)

2) * stands for substitutable courses

Curriculum List (graduate program)

Classification	Course No.	Computer Code	Course Name	Lecture;Lab.; Credit (Assignment)	Semester	Note
	BiS500	41.500	Bioinformation and Bioelectronics	3:0:3(3)	Spring	
	BiS502	41.502	Bioanalytical Technology	3:0:3(6)	Fall	
	BiS510	41.510	Technology Commercialization and Venture Business	3:0:3(6)	Spring	
	BiS521	41.521	Biology for Engineers	3:0:3(6)	Spring	
	BiS522	41.522	Genomics and Proteomics	3:0:3(4)	Fall	
	BiS523	41.523	Information and Electronics for Scientists	3:0:3(6)	Spring	
	BiS524	41.524	Biopharmaceuticals	3:0:3(6)	Fall	
	BiS525	41.525	Brain Dynamics	3:0:3(6)	Spring	
	BiS526	41.526	Methods in Neuroscience	3:0:3(6)	Spring	
	BiS527	41.527	Theory of Brain Function	3:0:3(6)	Spring,Fall	
	BiS528	41.528	Cognitive Design and Interface	3:0:3(6)	Fall	
	BiS531	41.531	Genome Bioinformatics	3:0:3(6)	Spring	
	BiS532	41.532	Bioinformatics Laboratory	2:3:3(6)	Fall	
	BiS533	41.533	Computing Technology	3:0:3(6)	Spring,Fall	
	BiS534	41.534	Systems Biology	3:0:3(6)	Spring	
	BiS536	41.536	Proteome Bioinformatics	3:0:3(6)	Fall	
	BiS551	41.551	Medical Image Processing	3:0:3(3)	Spring	
	BiS552	41.552	Digital Biomedical Signal Processing	3:0:3(6)	Fall	
	BiS553	41.553	Biophotonics	3:0:3(6)	Spring,Fall	
	BiS554	41.554	Neural Networks	3:0:3(6)	Fall	*EE538
	BiS571	41.571	BioElectroMechanics	3:0:3(6)	Spring	
	BiS572	41.572	Microtransducers and Laboratory	2:3:3(6)	Fall	
Elective	BiS575	41.575	Nanobiophysics	3:0:3(6)	Fall	
	BiS622	41.622	Metabolic Engineering	3:0:3(3)	Fall	
	BiS627	41.627	Clinical Neuroscience	3:0:3(3)	Spring	
	BiS628	41.628	Learning and Memory Systems	3:0:3(6)	Spring,Fall	
	BiS631	41.631	Data Mining	3:0:3(6)	Spring	
	BiS632	41.632	Biostatistics	3:0:3(6)	Spring,Fall	
	BiS633	41.633	Bio-Intelligence	3:0:3(6)	Spring	
	BiS634	41.634	Database Construction	3:0:3(6)	Fall	
	BiS651	41.651	Hearing and Auditory Model	3:0:3(6)	Spring	
	BiS652	41.652	Human Visual Model	3:0:3(6)	Fall	
	BiS653	41.653	Advanced MRI Techniques	3:0:3(6)	Spring	*EE737
	BiS671	41.671	Nanomaterial Process and Behavior	3:0:3(4)	Spring	
	BiS672	41.672	Nano Electro Mechanical Systems	3:0:3(4)	Fall	
	BiS673	41.673	Bioelectronic Devices	3:0:3(6)	Spring	
	BiS675	41.675	Biomimetics in Biomedical Engineering	3:0:3(6)	Fall	
	BiS721	41.721	Computational Cell Biology	3:0:3(6)	Spring	
	BiS722	41.722	Cell Signaling Network	3:0:3(6)	Fall	
	BiS723	41.723	Advanced Cognitive Neuroscience	3:0:3(6)	Fall	
	BiS731	41.731	Bio-Pattern Recognition	3:0:3(6)	Spring	
	BiS732	41.732	Bio-Network	3:0:3(6)	Spring,Fall	
	BiS735	41.735	Computer Graphics and Bio-Application	2:3:3(6)	Spring	*CS580
	BiS752	41.752	Neural Engineering	3:0:3(6)	Spring	
	BiS771	41.771	Nanobiotechnology	3:0:3(4)	Spring	

Classification	Course No.	Computer Code	Course Name	Lecture;Lab.; Credit (Assignment)	Semester	Note
Elective	BiS772	41.772	Nano-Micro-Machining Process Laboratory	2:3:3(4)	Fall	
	BiS773	41.773	Nanotechnology in Medicine	3:0:3	Fall	
	BiS800	41.800	Special Lectures in Bio and Brain Engineering	3:0:3(6)	Spring,Fall	
	BiS801	41.801	Special Lectures in Bio and Brain Engineering (1)	1:0:1(2)	Spring,Fall	
	BiS802	41.802	Special Lectures in Bio and Brain Engineering (2)	2:0:2(4)	Spring,Fall	
	BiS810	41.810	Leadership & Communication	3:0:3(6)	Fall	
Research	BiS960	41.960	Thesis/Dissertation Research (Master)			
	BiS965	41.965	Individual Study (Master)			
	BiS966	41.966	Seminar (Master)	1:0:1		
	BiS980	41.980	Thesis/Dissertation Research (Doctoral)			
	BiS986	41.986	Seminar (Doctoral)	1:0:1		
	BiS987	41.987	Biofusion Seminar	1:0:1		

※ Notes: 1) 500 level courses open to undergraduate students

2) * stands for substitutable courses

Alternative Course List

Alternative courses in the department

Category	Courses currently offered		Courses not currently offered		
	Course no.	Course title	Course no	Course title	Remark
Undergraduate	BiS437	Bio-Data Engineering	BiS331	Bio Computer Engineering	course abolished
Undergraduate	BiS438	Bioinformatics	BiS331	Bio Computer Engineering	course abolished

Alternative courses offered by other departments

Category	Courses offered by the department		Courses offered by other departments		
	Course no.	Course no.	Course no.	Course no.	Remark
Undergraduate	BiS202	Cell Biology	BS202	Cell Biology	Bidirectional substitution
Undergraduate	BiS208	Biochemistry II	BS208	Biochemistry II	Bidirectional substitution
Undergraduate	BiS232	Bio-Data Structures	CS206	Data Structure	unidirectional substitution
Undergraduate	BiS423	Molecular Biology	BS433	Molecular Biology of Gene Regulation	unidirectional substitution
Undergraduate	BiS424	Instrumental Analysis for Biomaterials	CH463	Introduction to Analytical Chemistry	unidirectional substitution
Graduate	BiS554	Neural Networks	EE538	Neural Networks	unidirectional substitution
Graduate	BiS653	Advanced MRI Techniques	EE737	Medical Imaging Technology	unidirectional substitution
Graduate	BiS735	Computer Graphics and Bio-Application	CS580	Interactive Computer Graphics	unidirectional substitution