

**総合理工学位プログラム <学士(工学)> コンピテンス一覧**  
**Bachelor's Program in Interdisciplinary Engineering Competence List**  
**<Bachelor of Engineering>**

■汎用コンピテンス(学士課程) Generic Competences(Bachelor Program)

1	コミュニケーション能力 Communication ability	母語や外国語を適切に用いるとともに、各種メディアを利用したプレゼンテーション等を行うコミュニケーション能力 Communication ability to use the mother tongue and foreign languages properly and make presentations, etc. using various media
2	批判的・創造的思考力 Ability for critical and creative thinking	一般的・専門的知識の体系的理解をベースに批判的・創造的に思考する能力 Ability to think critically and creatively based on systematic understanding of general and specialized knowledge
3	データ・情報リテラシー Data and information literacy	様々な事象や情報を数量的手法やコンピュータ等を用いて適切に解析・処理する能力 Ability to properly analyze and process various events and information using quantitative methods, computers, etc
4	広い視野と国際性 Broad perspective and international character	自身の専門に留まらず文化・社会と自然・物質に関して幅広く理解し、異文化を理解・尊重する能力 Ability to broadly understand culture, society, nature, and materials and understand and respect different cultures and be not only involved in one's own expertise
5	心身の健康と人間性・倫理性 Mental and physical health, humanity, and ethics	芸術やスポーツへの理解と実践等を通して心と身体の健康を保ち、人間性と倫理性を有する市民としての責任を自覚して実践する能力 Ability to maintain mental and physical health through the understanding, practice, etc. of arts and sports and be conscious of one's responsibility and put it into practice as a citizen with humanity and ethics
6	協働性・主体性・自律性 Cooperative, independent, and autonomous attitudes	チームワークやリーダーシップを通して様々な物事に対処し自己を管理しながら自律的に学び続け行動する能力 Ability to keep learning and act autonomously while dealing with a situation through team work and leadership and practicing self-management

■専門コンピテンス Specific Competences

1	数学的な論理力と計算力 Mathematical logic and calculation skills	解析学や線形代数を基礎とした数学的な思考力と物理的課題の解決に向けた計算力 Mathematical thinking skills based on analysis and linear algebra, and computational skills to solve physical problems
2	物理現象の理解 Understanding of phenomena in Physics	量子力学から電磁気学、熱力学にいたる広範な物理現象の理解 Understanding of a wide range of physical phenomena, from mechanics to electromagnetism to thermodynamics
3	化学・生物現象の理解物理学実験・システム工学実験の分析力 Understanding of phenomena in chemistry and biology, and analytical skills for physics and systems engineering experiments	広物理学・工学実験を分析かつ批判的に評価する能力、多文化・異分野の人の中での協調性 Ability to analyze and critically evaluate a wide range of physics and engineering experiments, and to work well in a multicultural and interdisciplinary environment
4	マイクロ工学・ナノ科学の能力 Ability in micro-engineering and nano-science	マイクロ工学・ナノ科学に関する幅広い知識と多様な研究手法についての理解 Broad knowledge of micro-engineering and nanoscience and an understanding of diverse research methods
5	マクロ工学・システム工学の能力 Ability in macro-engineering and systems engineering	マクロ工学・システム工学に関する幅広い知識と多様な研究手法についての理解 Broad knowledge of macro-engineering and systems engineering and an understanding of diverse research methods
6	課題探求・解決能力 Problem exploration and problem solving skills	分野横断的課題を探求して原理的視点で解決、意思疎通・プレゼンする能力 Ability to explore cross-disciplinary issues and solve them from a principled perspective, and to communicate and present information



総合理工学位プログラム <学士(工学)> カリキュラム・マップ  
Bachelor's Program in Interdisciplinary Engineering <Bachelor of Engineering> Curriculum Map

\*科目により異なります \*Varies by subject.

科目区分 Course Category	科目番号 Course Number	授業科目の名称 Course Name	主要授業科目 Essential Subjects	単位数 Credits	標準履修 年次 Standard registration year	汎用コンピテンス Generic Competences						専門コンピテンス Specific Competences						必修/選択 /自由の別 Required, Elective, or Free						
						1	2	3	4	5	6	1	2	3	4	5	6	必修 Required	選択 Core Electives	自由 Free Electives				
						コミュニケーション能力 Communication ability	批判的・創造 的思考力 Ability for critical and creative thinking	データ・情報 リテラシー Data and information literacy	広い視野と国 際性 Broad perspective and international character	心身の健康と 人間性・倫理 性 Mental and physical health, humanity, and ethics	協働性・主体 性・自律性 Cooperative, independent, and autonomous attitudes	数学的な論理 力と計算力 Mathematical logic and calculation skills	物理現象の理 解 Understanding of phenomena in Physics	化学・生物現 象の理解物理 学実験・シス テム工学実験 の分析力 Understanding of phenomena in chemistry and biology, and analytical skills for physics and systems engineering experiments	マイクロ工学・ ナノ科学の能 力 Ability in micro- engineering and nano- science	マクロ工学・ システム工学 の能力 Ability in macro- engineering and systems engineering	課題探求・解 決能力 Problem exploration and problem solving skills							
専門科目 Major Subjects	Required		FJ11001	Engineering Ethics	Engineering Ethics	○	1.0	4					0.34				0.33	0.33		○				
			FJ11101	Introduction to Interdisciplinary Engineering I	Introduction to Interdisciplinary Engineering I	○	1.0	1				0.25			0.25			0.25	0.25		○			
			FJ11111	Introduction to Interdisciplinary Engineering II	Introduction to Interdisciplinary Engineering II	○	1.0	1				0.25			0.25			0.25	0.25		○			
			FJ10001	Complex Analysis	Complex Analysis	○	3.0	2						0.5							○			
			FJ10101	Applied Mathematics	Applied Mathematics	○	3.0	2						0.5							○			
			FJ12001	Modern Physics	Modern Physics	○	3.0	2				0.5				0.5					○			
			FJ15001	System Modeling	System Modeling	○	2.0	2											0.5		○			
			FJ15101	Electronic Circuits	Electronic Circuits	○	2.0	2											0.33	0.33	○			
			FJ18003	Advanced Labs I	Advanced Labs I	○	2.0	3	0.25	0.25					0.25			0.25			○			
			FJ18013	Advanced Labs II	Advanced Labs II	○	2.0	3	0.25	0.25					0.25			0.25			○			
			FJ19003	Interdisciplinary Engineering PBL I	Interdisciplinary Engineering PBL I	○	6.0	3	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○			
			FJ19013	Interdisciplinary Engineering PBL II	Interdisciplinary Engineering PBL II	○	6.0	3	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○			
			FJ19023	Interdisciplinary Engineering PBL III	Interdisciplinary Engineering PBL III	○	6.0	4	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○			
			FJ19033	Interdisciplinary Engineering PBL IV	Interdisciplinary Engineering PBL IV	○	6.0	4	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○			
	Core Electives	Group A		FJ12101	Statistical Physics I	Statistical Physics I	○	1.0	3									0.5				○		
				FJ12111	Statistical Physics II	Statistical Physics II	○	1.0	3										0.5				○	
				FJ12121	Statistical Physics III	Statistical Physics III	○	1.0	3										0.5				○	
				FJ12231	Quantum Mechanics I	Quantum Mechanics I	○	1.0	3										0.5				○	
				FJ12241	Quantum Mechanics II	Quantum Mechanics II	○	1.0	3										0.5				○	
				FJ12251	Quantum Mechanics III	Quantum Mechanics III	○	1.0	3										0.5				○	
				FJ12301	Advanced Electromagnetism I	Advanced Electromagnetism I	○	1.0	3							0.33	0.33						○	
				FJ12311	Advanced Electromagnetism II	Advanced Electromagnetism II	○	1.0	3							0.33	0.33						○	
				FJ12321	Advanced Electromagnetism III	Advanced Electromagnetism III	○	1.0	4							0.33	0.33						○	
				FJ12401	Solid State Physics I	Solid State Physics I	○	1.0	3								0.33			0.33			○	
			FJ12411	Solid State Physics II	Solid State Physics II	○	1.0	3								0.33			0.33			○		
			FJ12421	Solid State Physics III	Solid State Physics III	○	1.0	4								0.33			0.33			○		
			FJ15011	Control Systems I	Control Systems I	○	2.0	3							0.33					0.33		○		
			FJ15021	Control Systems II	Control Systems II	○	2.0	3							0.33					0.33		○		
			FJ16011	Fluid Dynamics	Fluid Dynamics	○	1.0	3								0.33				0.33		○		
			FJ16021	Mechanics of Materials	Mechanics of Materials	○	1.0	3								0.33				0.33		○		
			FJ16031	Energy Engineering	Energy Engineering	○	1.0	3								0.33				0.33		○		
				FJ19101	IDE特別研究発表演習I	Research Paper Presentation Workshop in IDE I	○	1.0	1-4	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○		
				FJ19111	IDE特別研究発表演習I	Research Paper Presentation Workshop in IDE I	○	1.0	1-4	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○		
				FJ19121	IDE特別研究発表演習II	Research Paper Presentation Workshop in IDE II	○	1.0	1-4	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○		
			FJ19131	IDE特別研究発表演習II	Research Paper Presentation Workshop in IDE II	○	1.0	1-4	0.15	0.15		0.14			0.14			0.14	0.14	0.14	○			
	Core Electives	Group B		E002211	Chemistry I	Chemistry I	○	1.0	1										0.5			○		
				E002221	Chemistry II	Chemistry II	○	1.0	1											0.5			○	
				E002231	Chemistry III	Chemistry III	○	1.0	1											0.5			○	