

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)

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|---|---|---|
| 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 physical phenomena | 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 chemical and biological phenomena, 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 Micro-engineering and nanoscience capabilities | 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 Macro-engineering and systems engineering capabilities | 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 Ability to explore and solve problems | 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 | 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 physical phenomena | 化学・生物現象の理解 物理実験・システム工学実験の分析力 Understanding of chemical and biological phenomena, and analytical skills for physics and systems engineering experiments | マイクロ工学・ナノ科学の能力 Micro-engineering and nanoscience capabilities | マクロ工学・システム工学の能力 Macro-engineering and systems engineering capabilities | 課題探求・解決能力 Ability to explore and solve problems | | | | | | | | |
| 専門科目 Major Subjects | | FJ10001 | Complex Analysis | Complex Analysis | 3.0 | 2 | | | ○ | | | | ○ | | | | | | ○ | | | | | |
| | | FJ10101 | Applied Mathematics | Applied Mathematics | 3.0 | 2 | | | ○ | | | | ○ | | | | | | | ○ | | | | |
| | | FJ12001 | Modern Physics | Modern Physics | 3.0 | 2 | | | | | | | | ○ | | | | | | ○ | | | | |
| | | FJ15001 | System Modeling | System Modeling | 2.0 | 2 | | | | | | | | | | | | | | ○ | | | | |
| | | FJ15101 | Electronic Circuits | Electronic Circuits | 2.0 | 2 | | | | | | | | | | | | | | ○ | | | | |
| | | FJ18003 | Advanced Labs I | Advanced Labs I | 2.0 | 3 | | | | | | | | | | | | | | ○ | | | | |
| | | FJ18013 | Advanced Labs II | Advanced Labs II | 2.0 | 3 | | | | | | | | | | | | | | ○ | | | | |
| | | FJ19003 | Interdisciplinary Engineering PBL I | Interdisciplinary Engineering PBL I | 6.0 | 3 | | | | ○ | | | | | | | | | | ○ | | | | |
| | | FJ19013 | Interdisciplinary Engineering PBL II | Interdisciplinary Engineering PBL II | 6.0 | 3 | | | | ○ | | | | | | | | | | ○ | | | | |
| | | FJ19023 | Interdisciplinary Engineering PBL III | Interdisciplinary Engineering PBL III | 6.0 | 4 | | | | ○ | | | | | | | | | | ○ | | | | |
| | | FJ19033 | Interdisciplinary Engineering PBL IV | Interdisciplinary Engineering PBL IV | 6.0 | 4 | | | | ○ | | | | | | | | | | ○ | | | | |
| | Core Electives | Group A | FJ12101 | Statistical Physics I | Statistical Physics I | 1.0 | 3 | | | | | | | | | | | | | | | ○ | | |
| | | | FJ12111 | Statistical Physics II | Statistical Physics II | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12121 | Statistical Physics III | Statistical Physics III | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12201 | Quantum Mechanics I | Quantum Mechanics I | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12211 | Quantum Mechanics II | Quantum Mechanics II | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12221 | Quantum Mechanics III | Quantum Mechanics III | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12301 | Advanced Electromagnetism I | Advanced Electromagnetism I | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12311 | Advanced Electromagnetism II | Advanced Electromagnetism II | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12321 | Advanced Electromagnetism III | Advanced Electromagnetism III | 1.0 | 4 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12401 | Solid State Physics I | Solid State Physics I | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12411 | Solid State Physics II | Solid State Physics II | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | |
| | | | FJ12421 | Solid State Physics III | Solid State Physics III | 1.0 | 4 | | | | | | | | | | | | | | | | ○ | |
| | FJ15011 | Control Systems I | Control Systems I | 2.0 | 3 | | | | | | | | | | | | | | | | ○ | | | |
| | FJ15021 | Control Systems II | Control Systems II | 2.0 | 3 | | | | | | | | | | | | | | | | ○ | | | |
| | FJ16011 | Fluid Dynamics | Fluid Dynamics | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | | | |
| | FJ16021 | Mechanics of Materials | Mechanics of Materials | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | | | |
| | FJ16031 | Energy Engineering | Energy Engineering | 1.0 | 3 | | | | | | | | | | | | | | | | ○ | | | |
| | Core Electives | Group B | EG02211 | Chemistry I | Chemistry I | 1.0 | 1 | | | | | | | | | | | | | | | ○ | | |
| | | | EG02221 | Chemistry II | Chemistry II | 1.0 | 1 | | | | | | | | | | | | | | | ○ | | |
| | | | EG02231 | Chemistry III | Chemistry III | 1.0 | 1 | | | | | | | | | | | | | | | ○ | | |