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|---------------------------------|---|--|---|--|--|---|
| | 計算科学コース Computational Science Course | 高度先端計算科学概論 a 高度先端計算科学概論 b 計算物性科学 計算ナノ科学 a 計算ナノ科学 b 計算バイオ科学 a 計算バイオ科学 b 計算実験科学概論 a 計算実験科学概論 b 離散数学基礎 a 離散数学基礎 b 応用解析学基礎 a 応用解析学基礎 b | Introduction to Frontiers of Computational Science a Introduction to Frontiers of Computational Science b Computational Solid State Physics Computational Nanoscience a Computational Nanoscience b Computational Chemistry and Bioscience a Computational Chemistry and Bioscience b Introduction to Computational Experimentation Science a Introduction to Computational Experimentation Science b Basics of Discrete Mathematics a Basics of Discrete Mathematics b Basics of Applied Analysis a Basics of Applied Analysis b | | 1 1 2 1 1 1 1 1 1 1 1 1 1 | |
| 専門科目群 Specialized Courses | 数学コース Mathematics Course | 代数学 II a 代数学 II b 幾何学 II a 幾何学 II b 解析学 II a 解析学 II b 数学教育 a 数学教育 b | Algebra IIa Algebra IIb Geometry IIa Geometry IIb Analysis IIa Analysis IIb Mathematics Education a Mathematics Education b | | 1 1 1 1 1 1 1 1 | 「北陸先端科学技術大学院大学との連携に関する授業科目の連携科目」及び専門科目から、4単位以上を修得する Required to take more than 4 credits from "Cooperative Studies with JAIST" and "Specialized Courses" |
| | 物理学コース Physics Course | 理論物理学 a 理論物理学 b 固体物理学 a 固体物理学 b 低温物理学 a 低温物理学 b プラズマ物理学 a プラズマ物理学 b 光物性論 a 光物性論 b 生物物理学 a 生物物理学 b 宇宙物理学 a 宇宙物理学 b 物理教育 a 物理教育 b | Theoretical Physics a Theoretical Physics b Solid State Physics a Solid State Physics b Low Temperature Physics a Low Temperature Physics b Plasma Physics a Plasma Physics b Optical Physics a Optical Physics b Biophysics a Biophysics b Astrophysics a Astrophysics b Physics Education a Physics Education b | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| | 計算科学コース Computational Science Course | 計算実験科学 a 計算実験科学 b 応用計算科学 a 応用計算科学 b 離散数学 a 離散数学 b 応用解析学 a 応用解析学 b | Computational Experimentation Science a Computational Experimentation Science b Applied Computational Science a Applied Computational Science b Discrete Mathematics a Discrete Mathematics b Applied Analysis a Applied Analysis b | | 1 1 1 1 1 1 1 1 | |
| 発展科目群 Applied Courses | 数学コース Mathematics Course | 数学特別講義※3 科学方法論 A 科学機器活用法 A サイエンスプレゼンテーション A 課題研究 A 博士研究調査* | Special Lectures on Mathematics※3 Methodology of Science A Utilization of Scientific instruments A Scientific Presentation A Research Work A Ph.D. Qualifying Examination * | | 1 4 4 4 8 8 | 数学コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、課題研究 A に替えて*を履修すること。) Compulsory for Mathematics Course(In case of summarizing research activities as Ph.D.Qualifying Examination, students are required to take Ph.D.Qualifying Examination instead of Research Work A) |
| | 物理学コース Physics Course | 物理学特別講義※3 科学方法論 B 科学機器活用法 B サイエンスプレゼンテーション B 課題研究 B 博士研究調査* | Special Lectures on Physics※3 Methodology of Science B Utilization of Scientific instruments B Scientific Presentation B Research Work B Ph.D. Qualifying Examination * | | 1 4 4 4 8 8 | 物理学コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、課題研究 B に替えて*を履修すること。) Compulsory for Physics Course(In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Research Work B) |
| | 計算科学コース Computational Science Course | 計算科学特別講義※3 科学方法論 A 科学機器活用法 A サイエンスプレゼンテーション A 課題研究 A 博士研究調査* | Special Lectures on Computational Science※3 Methodology of Science A Utilization of Scientific instruments A Scientific Presentation A Research Work A Ph.D. Qualifying Examination * | | 1 4 4 4 8 8 | 計算科学コース A 又は B のいずれか 20 単位必修 ただし、研究の取りまとめを博士研究調査により行う場合は、課題研究 A 又は課題研究 B に替えて*を履修すること。 Required to take 20 credits from either Computational Science Course A or B |

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| | 科学方法論 B | Methodology of Science B | | 4 | B | Computational Science Course B (In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Research Work A or Research Work B) |
| | 科学機器活用法 B | Utilization of Scientific instruments B | | 4 | | |
| | サイエンスプレゼンテーション B | Scientific Presentation B | | 4 | | |
| | 課題研究 B | Research Work B | | 8 | | |
| | 博士研究調査 * | Ph.D. Qualifying Examination * | | 8 | | |

※ 1 国際交流科目, 特別講義, 学域で開講される授業科目, 他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は, 別に定める。

※ 1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are stipulated separately.

2.物質化学専攻
2.Division of Material Chemistry

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | | |
|---|--|---|--|----------------|--|--|--|
| | | | 必修 Requirement | 選択 Elective | | | |
| 研究科共通科目 Graduate School Common Courses | 大学院 G S 基盤科目 GS Basic Courses for Postgraduates | 異分野研究探査Ⅰ | Laboratory Rotation I | 0.5 | | | |
| | | 異分野研究探査Ⅱ | Laboratory Rotation II | 0.5 | | | |
| | | 研究者倫理 | Research Ethics | 1 | | | |
| | 知識集約型社会とデータサイエンス | Data Science and Society 5.0 | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | | |
| | 次世代の先端科学技術 | Advanced Science and Technology in the Next Generation | | 1 | | | |
| | スマート創成科学 | Smart Science and Technology for Innovation | | 1 | | | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | | | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | | | |
| | 数理・データサイエンス・AⅠ基盤 | Mathematical, Data Science, and AI Basic | | 1 | | | |
| | 人間と社会の課題 | Human and Social Challenges | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | | |
| | 技術経営論 A | Management of Technology A | | 1 | | | |
| | 技術経営論 B | Management of Technology B | | 1 | | | |
| | ヘルスケア・イノベーション | Innovation in Healthcare | | 1 | | | |
| | 破壊的イノベーションに向けた技術経営論 | MoT as for Disruptive Innovation | | 1 | | | |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | | | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | | | |
| | 数理学 a | Topics in Mathematical Science a | | 1 | | | |
| | 数理学 b | Topics in Mathematical Science b | | 1 | | | |
| | 理論物理学基礎 a | Introduction to Theoretical Physics a | | 1 | | | |
| | 生物・分子物理学 a | Introduction to Molecular and Biophysics a | | 1 | | | |
| | 凝縮系物理学基礎 a | Introduction to Condensed Matter Physics a | | 1 | | | |
| | 宇宙・プラズマ物理学 a | Introduction to Plasma and Astrophysics a | | 1 | | | |
| | 振動・波動物理学 a | Physics of Oscillations and Waves a | | 1 | | | |
| | 計算理学概論 a | Topics in Computational Science a | | 1 | | | |
| | 計算理学概論 b | Topics in Computational Science b | | 1 | | | |
| | 先端物質化学概論 A | Advanced Material Chemistry A | | 1 | | | |
| | 先端物質化学概論 B | Advanced Material Chemistry B | | 1 | | | |
| | 応用物質化学概論 A | Applied Material Chemistry A | | 1 | | | |
| | 応用物質化学概論 B | Applied Material Chemistry B | | 1 | | | |
| | 生物科学基礎 A | Fundamentals of Biological Science A | | 1 | | | |
| | 生物科学基礎 B | Fundamentals of Biological Science B | | 1 | | | |
| | バイオ工学特論 A | Advanced Bioengineering A | | 1 | | | |
| | バイオ工学特論 B | Advanced Bioengineering B | | 1 | | | |
| 地球惑星科学基礎 A | Fundamentals of Earth and Planetary Science A | | 1 | | | | |
| 地球惑星科学基礎 B | Fundamentals of Earth and Planetary Science B | | 1 | | | | |
| 環境・エネルギー工学総論 A | Introduction to Environmental and Energy Engineering A | | 1 | | | | |
| 環境・エネルギー工学総論 B | Introduction to Environmental and Energy Engineering B | | 1 | | | | |
| 北陸先端科学技術大学院大学との 連携科目 Cooperative Studies with JAIST | 連携科目 | Cooperative Studies with Jaist | | 2 | | | |
| 創成研究科目 Creative Research Courses | 創成研究Ⅰ 創成研究Ⅱ | Creative Research 1 Creative Research 2 | | 2 2 | | | |
| 国際交流科目※1 International Studies Courses※1 | 国際プレゼンテーション演習 国際研究インターンシップ | Practice on International Presentation International Research Internship | | 2 2 | | | |
| 基盤科目 Basic Courses | 化学コース Chemistry Course | 物質創成化学Ⅰ | Material Creation Chemistry I | | | 1 | 化学コース4単位以上修得 Required to take more than 4 credits for Chemistry Course |
| | | 物質創成化学Ⅱ | Material Creation Chemistry II | | | 1 | |
| | | 物質創成化学Ⅲ | Material Creation Chemistry III | | 1 | | |
| | | 物質創成化学Ⅳ | Material Creation Chemistry IV | | 1 | | |
| | | 物質解析化学Ⅰ | Material Analysis Chemistry I | | 1 | | |
| | | 物質解析化学Ⅱ | Material Analysis Chemistry II | | 1 | | |
| | | 物質解析化学Ⅲ | Material Analysis Chemistry III | | 1 | | |
| | | 物質解析化学Ⅳ | Material Analysis Chemistry IV | | 1 | | |
| | 応用化学コース Applied Chemistry Course | エネルギー・環境プログラム序論 | Introduction of Energy and Environmental Program | 1 | | 応用化学コース必修 Compulsory for Applied Chemistry Course | |
| | | マテリアルプログラム序論 | Introduction of Material Program | 1 | | | |
| | | 化学技術英語 | Technical English for Applied Chemistry | 2 | | | |
| | 共通 Common for Course | 専修有機化学 | Organic Chemistry for Education | | 2 | 修了要件に含めることはできない Those subjects cannot be counted toward degree. | |
| | | 専修無機化学 | Inorganic Chemistry for Education | | 2 | | |
| 専修錯体化学 | | Coodination Chemistry for Education | | 2 | | | |
| 専修分析化学 | | Analytical Chemistry for Education | | 2 | | | |
| 専修生物化学 | | Biochemistry for Education | | 2 | | | |
| 専修理論化学 | | Theoretical Chemistry for Education | | 2 | | | |
| 専修放射化学 | | Radiochemistry for Education | | 2 | | | |
| 専修核地球化学 | Nuclear Geochemistry for Education | | 2 | | | | |
| 発展科目 Applied Courses | 化学コース Chemistry Course | 有機合成化学 | Synthetic Organic Chemistry | | 2 | 化学コース2単位以上修得 Required to take more than 2 credits for Chemistry Course | |
| | | 無機構造化学 | Inorganic Structural Chemistry | | 2 | | |
| | | 錯体合成化学 | Synthesis of Metal Complexes | | 2 | | |
| | | 分子酵素化学 | Molecular Enzyme Chemistry | | 2 | | |
| | | 量子化学 | Quantum Chemistry | | 2 | | |
| | | 機器分析化学 | Instrumental Analytical Chemistry | | 2 | | |
| | | 核・放射化学 | Nuclear and Radiochemistry | | 2 | | |
| | | 核地球化学 | Nuclear Geochemistry | | 2 | | |
| | | 化学特別講義※3 | Topics in Chemistry※3 | | 1 | | |
| | 物質創成セミナー | Seminar in Material Creation | | 8 | 化学コース8単位以上修得 Required to take more than 8 credits for Chemistry Course | | |
| 物質解析セミナー | Seminar in Material Analysis | | 8 | | | | |

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| Applied Chemistry Course | エネルギー・環境プログラム Energy・Environment Program | 分子集合系化学 応用化学熱力学 応用電気化学 先端エネルギーデバイス 環境分析化学 環境保全化学 | Physical Chemistry of Self-Assembly Applied Chemical Thermodynamics Applied Electrochemistry Advanced Energy Devices Environmental and Analytical Chemistry Environment Conservation Chemistry | 2 2 2 2 2 2 | 応用化学コース8単位以上修得（ただし、主プログラムから6単位以上、かつ、主プログラム以外から2単位以上修得） Required to take more than 8 credits for Applied Chemistry Course (Necessary to take more than 6 credits from the main program and to take more than 2 credits from the other program.) |
| | マテリアルプログラム Material Program | 機能性高分子材料化学 機能性超分子化学 有機材料合成化学 有機機能化学 精密高分子合成化学 高分子材料合成化学 生物有機化学 不斉有機反応化学 | Functional Polymer Materials Functional Supramolecular Chemistry Synthetic Chemistry of Organic Materials Organic Functional Chemistry Fine Synthetic Polymer Chemistry Synthetic Chemistry of Polymeric Materials Bio-Organic Chemistry Asymmetric Organic Reactions | 2 2 2 2 2 2 2 2 | |
| Advanced Practice Courses | 化学コース Chemistry Course | 化学演習Ⅰ | Seminar in Chemistry I | 2 | 化学コース必修 Compulsory for Chemistry Course |
| | 専攻共通 Common for Division | 課題研究 | Research Work | 10 | 全コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、課題研究に替えて*を履修すること。) Compulsory for All Courses(In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Research Work) |
| | | 博士研究調査* | Ph.D. Qualifying Examination * | 10 | |
| | | 先端化学 | Advanced Chemistry | 1 | |
| | | プレゼンテーションⅠ プレゼンテーションⅡ プレゼンテーションⅢ プレゼンテーションⅣ | Presentation I Presentation II Presentation III Presentation IV | 1 1 1 1 | 2単位まで修了要件に含めることができる Up to 2 credits that can be counted towards degree |
| | | インターンシップⅠ インターンシップⅡ 新機能材料設計学 | Internship I Internship II New Functional Material Design | 1 2 2 | |
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※1 国際交流科目、特別講義、学域で開講される授業科目、他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は、別に定める。

※1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are stipulated separately.

3.機械科学専攻
3.Division of Mechanical Science and Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | | |
|---|---|--|---|----------------|-----------------------------------|---|--|
| | | | 必修 Requirement | 選択 Elective | | | |
| 研究科共通科目 Graduate School Common Courses | 大学院GS基礎科目 GS Basic Courses for Postgraduates | 異分野研究探査Ⅰ | Laboratory Rotation I | 0.5 | | | |
| | | 異分野研究探査Ⅱ | Laboratory Rotation II | 0.5 | | | |
| | 研究者倫理 | Research Ethics | 1 | | | | |
| | | 知識集約型社会とデータサイエンス | Data Science and Society 5.0 | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | |
| | | 次世代の先端科学技術 | Advanced Science and Technology in the Next Generation | | 1 | | |
| | | スマート創成科学 | Smart Science and Technology for Innovation | | 1 | | |
| | | イノベーション方法論A | Innovation Methodology A | | 1 | | |
| | | イノベーション方法論B | Innovation Methodology B | | 1 | | |
| | | 数理・データサイエンス・AI基礎 | Mathematical, Data Science, and AI Basic | | 1 | | |
| | | 人間と社会の課題 | Human and Social Challenges | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | |
| | | 技術経営論A | Management of Technology A | | 1 | | |
| | | 技術経営論B | Management of Technology B | | 1 | | |
| | | ヘルスケア・イノベーション | Innovation in Healthcare | | 1 | | |
| | | 破壊的イノベーションに向けた技術経営論 | MoT as for Disruptive Innovation | | 1 | | |
| | | 技術マネジメント基礎論A | Fundamentals of Management of Technology A | | 1 | | |
| | | 技術マネジメント基礎論B | Fundamentals of Management of Technology B | | 1 | | |
| | | 数理科学a | Topics in Mathematical Science a | | 1 | | |
| | | 数理科学b | Topics in Mathematical Science b | | 1 | | |
| | | 理論物理学基礎a | Introduction to Theoretical Physics a | | 1 | | |
| | | 生物・分子物理学a | Introduction to Molecular and Biophysics a | | 1 | | |
| | | 凝縮系物理学基礎a | Introduction to Condensed Matter Physics a | | 1 | | |
| | | 宇宙・プラズマ物理学a | Introduction to Plasma and Astrophysics a | | 1 | | |
| | | 振動・波動物理学a | Physics of Oscillations and Waves a | | 1 | | |
| | | 計算科学概論a | Topics in Computational Science a | | 1 | | |
| | | 計算科学概論b | Topics in Computational Science b | | 1 | | |
| | | 先端物質化学概論A | Advanced Material Chemistry A | | 1 | | |
| | | 先端物質化学概論B | Advanced Material Chemistry B | | 1 | | |
| | | 応用物質化学概論A | Applied Material Chemistry A | | 1 | | |
| | | 応用物質化学概論B | Applied Material Chemistry B | | 1 | | |
| | | 生物科学基礎A | Fundamentals of Biological Science A | | 1 | | |
| | | 生物科学基礎B | Fundamentals of Biological Science B | | 1 | | |
| | | バイオ工学分論A | Advanced Bioengineering A | | 1 | | |
| | | バイオ工学分論B | Advanced Bioengineering B | | 1 | | |
| | 地球惑星科学基礎A | Fundamentals of Earth and Planetary Science A | | 1 | | | |
| | 地球惑星科学基礎B | Fundamentals of Earth and Planetary Science B | | 1 | | | |
| | 環境・エネルギー工学総論A | Introduction to Environmental and Energy Engineering A | | 1 | | | |
| | 環境・エネルギー工学総論B | Introduction to Environmental and Energy Engineering B | | 1 | | | |
| | 北陸先端科学技術大学院大学との連携科目 Cooperative Studies with JAIST | 連携科目 | | 2 | | | |
| | 創成研究科目 Creative Research Courses | 創成研究Ⅰ 創成研究Ⅱ | Creative Research 1 Creative Research 2 | 2 2 | | | |
| | 国際交流科目※1 International Studies Courses※1 | 国際プレゼンテーション演習 国際研究インターンシップ | Practice on International Presentation International Research Internship | 2 2 | | | |
| 基礎科目 Basic Courses | 機械数理系科目 Mathematical Courses | フーリエ解析の方法と応用A | Methods of Applied Fourier Analysis A | | 1 | | 2単位以上習得 Required to take more than 2 credits. |
| | | フーリエ解析の方法と応用B | Methods of Applied Fourier Analysis B | | 1 | | |
| | | 統計力学A | Statistical Mechanics A | | 1 | | |
| | | 統計力学B | Statistical Mechanics B | | 1 | | |
| | | 偏微分方程式とその応用A | Partial differential equations and its application A | | 1 | | |
| | | 偏微分方程式とその応用B | Partial differential equations and its application B | | 1 | | |
| | | 工学とトポロジーA | Engineering and Topology A | | 1 | | |
| | | 工学とトポロジーB | Engineering and Topology B | | 1 | | |
| | 機械系科目 Mechanical Engineering Courses | 構造解析と材料力学A | Structural Analysis and Strength of Material A | | 1 | 6単位以上習得 Required to take more than 6 credits. | |
| | | 構造解析と材料力学B | Structural Analysis and Strength of Material B | | 1 | | |
| | | 材料力学と弾性論A | Mechanics of Materials and Theory of Elasticity A | | 1 | | |
| | | 材料力学と弾性論B | Mechanics of Materials and Theory of Elasticity B | | 1 | | |
| | | 熱流体解析学A | Analysis of Thermo-Fluid Systems A | | 1 | | |
| | | 熱流体解析学B | Analysis of Thermo-Fluid Systems B | | 1 | | |
| | | 熱・物質移動現象論A | Heat and mass transfer phenomena A | | 1 | | |
| | | 熱・物質移動現象論B | Heat and mass transfer phenomena B | | 1 | | |
| 機械力学と制御A | Dynamics and Control A | | 1 | | | | |
| 機械力学と制御B | Dynamics and Control B | | 1 | | | | |
| | 機械の動的モデリングA | Mechanical System Dynamics Modeling A | | 2 | | | |
| | 機械の動的モデリングB | Mechanical System Dynamics Modeling B | | 1 | | | |

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| 応用科目 Applied Courses | 設計生産システムプログラム Design and Manufacturing System Program | メカニズムの運動解析と設計 A | Kinematics and Design in Mechanism A | 1 | |
| | | メカニズムの運動解析と設計 B | Kinematics and Design in Mechanism B | 1 | |
| | | 特殊加工学特論 A | Non-traditional machining A | 1 | |
| | | 特殊加工学特論 B | Non-traditional machining B | 1 | |
| | | 電気加工学特論 A | Electrical Machining A | 1 | |
| | | 電気加工学特論 B | Electrical Machining B | 1 | |
| | | 工学系の最適設計法 A | Design Optimization for Engineering A | 1 | |
| | | 工学系の最適設計法 B | Design Optimization for Engineering B | 1 | |
| | | C A D / C A M 生産システム A | Applied Manufacturing System A | 1 | |
| | | C A D / C A M 生産システム B | Applied Manufacturing System B | 1 | |
| | | 形状創成論 A | Form Shaping Theory A | 1 | |
| | | 形状創成論 B | Form Shaping Theory B | 1 | |
| | | 成形加工 A | Forming Technology A | 1 | |
| | 成形加工 B | Forming Technology B | 1 | | |
| | 先端材料プログラム Advanced Materials Program | 機械材料学 A | Material Science for Engineers A | 1 | |
| | | 機械材料学 B | Material Science for Engineers B | 1 | |
| | | トライボロジー特論 A | Advanced Tribology A | 1 | |
| | | トライボロジー特論 B | Advanced Tribology B | 1 | |
| | | 金属組織制御学 A | Microstructural Control for Metallic Materials A | 2 | |
| 金属組織制御学 B | | Microstructural Control for Metallic Materials B | 1 | | |
| 金属材料の結晶学 A | | Crystallography of metallic materials A | 1 | | |
| 金属材料の結晶学 B | | Crystallography of metallic materials B | 1 | | |
| 応用数理プログラム Applied Mathematical Science Program | 材料プロセス工学 A | Materials Processing Technology A | 1 | | |
| | 材料プロセス工学 B | Materials Processing Technology B | 1 | | |
| | 計算流体力学 A | Computational Fluid Dynamics A | 1 | | |
| | 計算流体力学 B | Computational Fluid Dynamics B | 1 | | |
| | 連成解析論 A | Multiphysics Analysis A | 1 | | |
| | 連成解析論 B | Multiphysics Analysis B | 1 | | |
| | 実験流体力学 A | Experimental Fluid Dynamics A | 1 | | |
| | 実験流体力学 B | Experimental Fluid Dynamics B | 1 | | |
| | 機械学習 A | Machine Learning A | 1 | | |
| | 機械学習 B | Machine Learning B | 1 | | |
| | 量子論 A | Quantum Theory A | 1 | | |
| 量子論 B | Quantum Theory B | 1 | | | |
| プロセス革新プログラム Sustainable Process Innovation Program | 統計物理学特論 A | Advanced Statistical Physics A | 1 | | |
| | 統計物理学特論 B | Advanced Statistical Physics B | 1 | | |
| | 燃焼工学特論 A | Combustion theory A | 1 | | |
| | 燃焼工学特論 B | Combustion theory B | 1 | | |
| | 熱移動工学特論 A | Advanced Heat Transfer Engineering A | 1 | | |
| | 熱移動工学特論 B | Advanced Heat Transfer Engineering B | 1 | | |
| | エネルギー変換工学特論 A | Advanced Energy Conversion Engineering A | 1 | | |
| | エネルギー変換工学特論 B | Advanced Energy Conversion Engineering B | 1 | | |
| | 分離工学特論 A | Separation and Purification Technology A | 1 | | |
| | 分離工学特論 B | Separation and Purification Technology B | 1 | | |
| | プロセス工学特論 A | Advanced Chemical Process Engineering A | 1 | | |
| プロセス工学特論 B | Advanced Chemical Process Engineering B | 1 | | | |
| 専攻共通科目 Common Courses for Division | 熱エネルギープロセス解析 A | Analysis of Thermal energy process A | 1 | | |
| | 熱エネルギープロセス解析 B | Analysis of Thermal energy process B | 1 | | |
| | 機械科学特別講義 I | Topics in Mechanical Sciences 1 | 1 | | |
| | 機械科学特別講義 II | Topics in Mechanical Sciences 2 | 1 | | |
| 課題研究 Master Thesis Report | 機械科学特別講義 III | Topics in Mechanical Sciences 3 | 2 | | |
| | 学位プログラム特論 | Project Planning for Master's Degree | 2 | | |
| 博士研究調査 Ph.D. Qualifying Examination | 課題研究 | Master Thesis Report | 10 | | |
| | 博士研究調査 * | Ph.D. Qualifying Examination * | 10 | | |

※ 1 国際交流科目、特別講義、学域で開講される授業科目、他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は、別に定める。

※ 1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are stipulated separately.

主プログラムの科目から6単位以上及び他プログラムの科目から2単位以上修得
(Necessary to take more than 6 credits from the main program and to take more than 2 credits from the other program.)

全コース必修
(ただし、研究の取りまとめを博士研究調査により行う場合は、課題研究に替えて*を履修すること。)
Compulsory for all courses
(In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Master Thesis Report)

4.フロンティア工学専攻

4.Division of Frontier Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | | |
|---|--|--|--|--------------------------------|---|---|---|
| | | | 必修 Require ment | 選択 Elective | | | |
| 研究科共通科目 Graduate School Common Courses | 大学院 G S 基盤科目 GS Basic Courses for Postgraduates | 異分野研究探査Ⅰ | Laboratory Rotation I | 0.5 | | | |
| | | 異分野研究探査Ⅱ | Laboratory Rotation II | 0.5 | | | |
| | 研究者倫理 | Research Ethics | 1 | | | | |
| | 知識集約型社会とデータサイエンス | Data Science and Society 5.0 | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | | |
| | 次世代の先端科学技術 | Advanced Science and Technology in the Next Generation | | 1 | | | |
| | スマート創成科学 | Smart Science and Technology for Innovation | | 1 | | | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | | | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | | | |
| | 数理・データサイエンス・AI 基盤 | Mathematical, Data Science, and AI Basic | | 1 | | | |
| | 人間と社会の課題 | Human and Social Challenges | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | | |
| | 技術経営論 A | Management of Technology A | | 1 | | | |
| | 技術経営論 B | Management of Technology B | | 1 | | | |
| | ヘルスケア・イノベーション | Innovation in Healthcare | | 1 | | | |
| | 破壊的イノベーションに向けた技術経営論 | MoT as for Disruptive Innovation | | 1 | | | |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | | | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | | | |
| | 数理学 a | Topics in Mathematical Science a | | 1 | | | |
| | 数理学 b | Topics in Mathematical Science b | | 1 | | | |
| | 理論物理学基礎 a | Introduction to Theoretical Physics a | | 1 | | | |
| | 生物・分子物理学 a | Introduction to Molecular and Biophysics a | | 1 | | | |
| | 凝縮系物理学基礎 a | Introduction to Condensed Matter Physics a | | 1 | | | |
| | 宇宙・プラズマ物理学 a | Introduction to Plasma and Astrophysics a | | 1 | | | |
| | 振動・波動物理学 a | Physics of Oscillations and Waves a | | 1 | | | |
| | 計算理学概論 a | Topics in Computational Science a | | 1 | | | |
| | 計算理学概論 b | Topics in Computational Science b | | 1 | | | |
| | 先端物質化学概論 A | Advanced Material Chemistry A | | 1 | | | |
| | 先端物質化学概論 B | Advanced Material Chemistry B | | 1 | | | |
| 応用物質化学概論 A | Applied Material Chemistry A | | 1 | | | | |
| 応用物質化学概論 B | Applied Material Chemistry B | | 1 | | | | |
| 生物科学基礎 A | Fundamentals of Biological Science A | | 1 | | | | |
| 生物科学基礎 B | Fundamentals of Biological Science B | | 1 | | | | |
| バイオ工学特論 A | Advanced Bioengineering A | | 1 | | | | |
| バイオ工学特論 B | Advanced Bioengineering B | | 1 | | | | |
| 地球惑星科学基礎 A | Fundamentals of Earth and Planetary Science A | | 1 | | | | |
| 地球惑星科学基礎 B | Fundamentals of Earth and Planetary Science B | | 1 | | | | |
| 環境・エネルギー工学総論 A | Introduction to Environmental and Energy Engineering A | | 1 | | | | |
| 環境・エネルギー工学総論 B | Introduction to Environmental and Energy Engineering B | | 1 | | | | |
| 北陸先端科学技術大学院大学との 連携科目 Cooperative Studies with JAIST | 連携科目 | Cooperative Studies with Jaist | | 2 | | | |
| 創成研究科目 Creative Research Courses | 創成研究Ⅰ | Creative Research 1 | | 2 | | | |
| | 創成研究Ⅱ | Creative Research 2 | | 2 | | | |
| 国際交流科目※1 International Studies Courses※1 | 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | | | |
| | 国際研究インターンシップ | International Research Internship | | 2 | | | |
| フロンティア基 盤科目 Frontier Basic Courses | 機械系科目 Mechanical Engineering Courses | 材料力学と弾性論 A | Mechanics of Materials and Theory of Elasticity A | | 1 | 機械系科目、化学工学系科目、計測制御 系科目からそれぞれ1単位以上を含む計6 単位以上を修得 Required to take 6 credits including more than 1 credit from Mechanical Engineering Subjects, more than 1 credit from Chemical Engineering Subjects and more than 1 credit from Measurement and Control subjects | |
| | | 材料力学と弾性論 B | Mechanics of Materials and Theory of Elasticity B | | 1 | | |
| | | 機械力学と制御 A | Dynamics and Control A | | 1 | | |
| | | 機械力学と制御 B | Dynamics and Control B | | 1 | | |
| | | 熱流体解析学 A | Analysis of Thermo-Fluid Systems A | | 1 | | |
| | | 熱流体解析学 B | Analysis of Thermo-Fluid Systems B | | 1 | | |
| | | 機械の動的モデリング A | Mechanical System Dynamics Modeling A | | 1 | | |
| | | 機械の動的モデリング B | Mechanical System Dynamics Modeling B | | 1 | | |
| | | 有限要素法 A | Finite Element Method A | | 1 | | |
| | | 有限要素法 B | Finite Element Method B | | 1 | | |
| | | 構造解析と材料力学 A | Structural Analysis and Strength of Material A | | 1 | | |
| | | 構造解析と材料力学 B | Structural Analysis and Strength of Material B | | 1 | | |
| | | 化学工学系科目 Chemical Engineering Courses | プロセス工学特論 A | Advanced Process Engineering A | | | 1 |
| | | | プロセス工学特論 B | Advanced Process Engineering B | | | 1 |
| | 物理化学特論 A | | Advanced Physical Chemistry A | | 1 | | |
| | 物理化学特論 B | | Advanced Physical Chemistry B | | 1 | | |
| | 熱輸送論 A | | Advanced Heat Transfer A | | 1 | | |
| | 熱輸送論 B | | Advanced Heat Transfer B | | 1 | | |
| | 計測制御系科目 Measurement and Control Courses | ナノ計測制御基礎論 A | Fundamentals of Nanoscale Measurements and Control A | | 1 | | |
| | | ナノ計測制御基礎論 B | Fundamentals of Nanoscale Measurements and Control B | | 1 | | |
| | | 計測システム工学 A | Measurement System Engineering A | | 1 | | |
| | | 計測システム工学 B | Measurement System Engineering B | | 1 | | |
| | | 光工学 A | Optical Engineering A | | 1 | | |
| | | 光工学 B | Optical Engineering B | | 1 | | |
| | | 計測制御 A | Measurement and control A | | 1 | | |
| | | 計測制御 B | Measurement and control B | | 1 | | |
| | フロンティア先 端科目 Frontier Advanced Courses | 知能機械プログラム Intelligent Mechanical Engineering Program | 実世界ロボティクス特論 A | Real-world robotics A | | 1 | |
| 実世界ロボティクス特論 B | | | Real-world robotics B | | 1 | | |
| 航空宇宙システム特論 A | | | Aeronautical Systems A | | 1 | | |
| 航空宇宙システム特論 B | | | Aeronautical Systems B | | 1 | | |
| インテリジェントロボット A | | | Intelligent Robot A | | 1 | | |
| インテリジェントロボット B | | | Intelligent Robot B | | 1 | | |
| メカニズムの運動解析と設計 A | | | Kinematics and Design in Mechanism A | | 1 | | |
| メカニズムの運動解析と設計 B | | | Kinematics and Design in Mechanism B | | 1 | | |

| | | | | | |
|---|---------------|--|----|---|---|
| | コンピュータビジョン特論A | Computer Vision A | | 1 | |
| | コンピュータビジョン特論B | Computer Vision B | | 1 | |
| 人間機械共生プログラム Human-machine Symbiotic Systems Program | 医用生体工学概論A | Introduction to Medical and Biological Engineering A | | 1 | |
| | 医用生体工学概論B | Introduction to Medical and Biological Engineering B | | 1 | |
| | 生体運動制御A | Motor control of human movement A | | 1 | |
| | 生体運動制御B | Motor control of human movement B | | 1 | |
| | 生体力学基礎論 | Fundamentals of Biomechanics | | 2 | |
| | バイオメカニクス特論A | Biomechanics A | | 1 | |
| | バイオメカニクス特論B | Biomechanics B | | 1 | |
| | 生体機械工学特論A | Advanced Biomechanical Engineering A | | 1 | 各プログラムが指定するフロンティア先 端科目から4単位以上を修得 |
| | 生体機械工学特論B | Advanced Biomechanical Engineering B | | 1 | |
| | 応用人間工学特論A | Applied Ergonomics A | | 1 | Required to take more than 4 credits from Frontier Advanced Subjects |
| | 応用人間工学特論B | Applied Ergonomics B | | 1 | specified by the program which students have selected |
| 化学工学プログラム Advanced Chemical Engineering Program | 環境生物化学工学A | Environmental and Biochemical Engineering A | | 1 | |
| | 環境生物化学工学B | Environmental and Biochemical Engineering B | | 1 | |
| | レオロジー要論A | Applied Rheology A | | 1 | |
| | レオロジー要論B | Applied Rheology B | | 1 | |
| | 拡散分離工学特論A | Diffusional Separation Engineering A | | 1 | |
| | 拡散分離工学特論B | Diffusional Separation Engineering B | | 1 | |
| | エアロゾル科学A | Aerosol Science and Technology A | | 1 | |
| | エアロゾル科学B | Aerosol Science and Technology B | | 1 | |
| | 大気環境科学特論A | Atmospheric Environmental Science A | | 1 | |
| | 大気環境科学特論B | Atmospheric Environmental Science B | | 1 | |
| | 化学反応工学特論A | Advanced Chemical Reaction Engineering A | | 1 | |
| | 化学反応工学特論B | Advanced Chemical Reaction Engineering B | | 1 | |
| スマート計測制御プログラム Smart Measurement and Control Program | 制御工学特論A | Advanced Topics in Control Engineering A | | 1 | |
| | 制御工学特論B | Advanced Topics in Control Engineering B | | 1 | |
| | ロバスト制御 | Robust Control | | 2 | |
| | メディアプロセッサA | Media Processors A | | 1 | |
| | メディアプロセッサB | Media Processors B | | 1 | |
| | コンピュータビジョン特論A | Computer Vision A | | 1 | |
| | コンピュータビジョン特論B | Computer Vision B | | 1 | |
| 課題研究 Master Thesis Report | フロンティア課題研究 | Master Thesis Report for Frontiers | 10 | | 研究の取りまとめを博士研究調査により 行う場合は、フロンティア課題研究に替 えて*を履修すること。 (In case of summarizing research activities as Ph.D. Qualifying |
| | フロンティア工学演習A | Exercise on Frontier Engineering A | 1 | | |
| | フロンティア工学演習B | Exercise on Frontier Engineering B | 1 | | |
| | フロンティア工学演習C | Exercise on Frontier Engineering C | 1 | | |
| | フロンティア工学演習D | Exercise on Frontier Engineering D | 1 | | |
| 博士研究調査 Ph.D. Qualifying Examination | 博士研究調査* | Ph.D. Qualifying Examination* | 10 | | Examination, students are required to take Ph.D. Qualifying Examination instead of Master Thesis Report for Frontiers) |

※ 1 国際交流科目、特別講義、学域で開講される授業科目、他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は、別に定める。

※ 1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are stipulated separately.

5.電子情報通信学専攻

5.Division of Electrical, Information and Communication Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|--|--|-------------------|----------------|---------------------------------------|
| | | | 必修 Requirement | 選択 Elective | |
| 研究科共通科目 Graduate School Common Courses | 大学院 G S 基盤科目 GS Basic Courses for Postgraduates | 異分野研究探査 I Laboratory Rotation I | 0.5 | | |
| | | 異分野研究探査 II Laboratory Rotation II | 0.5 | | |
| | | 研究者倫理 Research Ethics | 1 | | |
| | 知識集約型社会とデータサイエンス Data Science and Society 5.0 | Data Science and Society 5.0 | | 1 | 選択必修1単位以上 |
| | 次世代の先端科学技術 Advanced Science and Technology in the Next Generation | Advanced Science and Technology in the Next Generation | | 1 | Required to take more than 1 credit. |
| | スマート創成科学 Smart Science and Technology for Innovation | Smart Science and Technology for Innovation | | 1 | |
| | イノベーション方法論 A Innovation Methodology A | Innovation Methodology A | | 1 | |
| | イノベーション方法論 B Innovation Methodology B | Innovation Methodology B | | 1 | |
| | 数理・データサイエンス・A I 基盤 Mathematical, Data Science, and AI Basic | Mathematical, Data Science, and AI Basic | | 1 | |
| | 人間と社会の課題 Human and Social Challenges | Human and Social Challenges | | 1 | 選択必修1単位以上 |
| | 技術経営論 A Management of Technology A | Management of Technology A | | 1 | Required to take more than 1 credit. |
| | 技術経営論 B Management of Technology B | Management of Technology B | | 1 | |
| | ヘルスケア・イノベーション Innovation in Healthcare | Innovation in Healthcare | | 1 | |
| | 破壊的イノベーションに向けた技術経営論 MoT as for Disruptive Innovation | MoT as for Disruptive Innovation | | 1 | |
| | 技術マネジメント基礎論 A Fundamentals of Management of Technology A | Fundamentals of Management of Technology A | | 1 | |
| | 技術マネジメント基礎論 B Fundamentals of Management of Technology B | Fundamentals of Management of Technology B | | 1 | |
| | 数理科学 a Topics in Mathematical Science a | Topics in Mathematical Science a | | 1 | |
| | 数理科学 b Topics in Mathematical Science b | Topics in Mathematical Science b | | 1 | |
| | 理論物理学基礎 a Introduction to Theoretical Physics a | Introduction to Theoretical Physics a | | 1 | |
| | 生物・分子物理学 a Introduction to Molecular and Biophysics a | Introduction to Molecular and Biophysics a | | 1 | |
| | 凝縮系物理学基礎 a Introduction to Condensed Matter Physics a | Introduction to Condensed Matter Physics a | | 1 | |
| | 宇宙・プラズマ物理学 a Introduction to Plasma and Astrophysics a | Introduction to Plasma and Astrophysics a | | 1 | |
| | 振動・波動物理学 a Physics of Oscillations and Waves a | Physics of Oscillations and Waves a | | 1 | |
| | 計算理学概論 a Topics in Computational Science a | Topics in Computational Science a | | 1 | |
| | 計算理学概論 b Topics in Computational Science b | Topics in Computational Science b | | 1 | |
| | 先端物質化学概論 A Advanced Material Chemistry A | Advanced Material Chemistry A | | 1 | |
| | 先端物質化学概論 B Advanced Material Chemistry B | Advanced Material Chemistry B | | 1 | |
| | 応用物質化学概論 A Applied Material Chemistry A | Applied Material Chemistry A | | 1 | |
| | 応用物質化学概論 B Applied Material Chemistry B | Applied Material Chemistry B | | 1 | |
| | 生物科学基礎 A Fundamentals of Biological Science A | Fundamentals of Biological Science A | | 1 | |
| | 生物科学基礎 B Fundamentals of Biological Science B | Fundamentals of Biological Science B | | 1 | |
| | バイオ工学特論 A Advanced Bioengineering A | Advanced Bioengineering A | | 1 | |
| | バイオ工学特論 B Advanced Bioengineering B | Advanced Bioengineering B | | 1 | |
| | 地球惑星科学基礎 A Fundamentals of Earth and Planetary Science A | Fundamentals of Earth and Planetary Science A | | 1 | |
| | 地球惑星科学基礎 B Fundamentals of Earth and Planetary Science B | Fundamentals of Earth and Planetary Science B | | 1 | |
| | 環境・エネルギー工学総論 A Introduction to Environmental and Energy Engineering A | Introduction to Environmental and Energy Engineering A | | 1 | |
| | 環境・エネルギー工学総論 B Introduction to Environmental and Energy Engineering B | Introduction to Environmental and Energy Engineering B | | 1 | |
| | 北陸先端科学技術大学院大学との連携科目 Cooperative Studies with JAIST | 連携科目 Cooperative Studies with Jaist | | 2 | |
| | 創成研究科目 Creative Research Courses | 創成研究 I Creative Research 1 | | 2 | |
| | | 創成研究 II Creative Research 2 | | 2 | |
| | 国際交流科目※1 International Studies Courses※3 | 国際プレゼンテーション演習 Practice on International Presentation | | 2 | |
| | | 国際研究インターンシップ International Research Internship | | 2 | |
| 基礎科目 Basic Courses | 離散力学系入門 A An Introduction to Discrete Dynamical Systems A | An Introduction to Discrete Dynamical Systems A | | 1 | 2単位以上修得 |
| | 離散力学系入門 B An Introduction to Discrete Dynamical Systems B | An Introduction to Discrete Dynamical Systems B | | 1 | Required to take more than 2 credits. |
| | 非線形波動概論 A Nonlinear Wave Equations A | Nonlinear Wave Equations A | | 1 | |
| | 非線形波動概論 B Nonlinear Wave Equations B | Nonlinear Wave Equations B | | 1 | |
| | トポロジー概論 A Topology A | Topology A | | 1 | |
| | トポロジー概論 B Topology B | Topology B | | 1 | |
| | 適応信号処理 A Adaptive Signal Processing A | Adaptive Signal Processing A | | 1 | |
| | 適応信号処理 B Adaptive Signal Processing B | Adaptive Signal Processing B | | 1 | |
| | 暗号の数理 A Mathematics in Cryptography A | Mathematics in Cryptography A | | 1 | |
| | 暗号の数理 B Mathematics in Cryptography B | Mathematics in Cryptography B | | 1 | |
| | SoC設計基礎論 A SoC Design Fundamentals A | SoC Design Fundamentals A | | 1 | |
| | SoC設計基礎論 B SoC Design Fundamentals B | SoC Design Fundamentals B | | 1 | |
| | 通信工学特論 A Advanced Communication Engineering A | Advanced Communication Engineering A | | 1 | |
| | 通信工学特論 B Advanced Communication Engineering B | Advanced Communication Engineering B | | 1 | |
| | 固体物性評価基礎論 Fundamentals of Materials Characterization | Fundamentals of Materials Characterization | | 1 | |
| | 次世代電気エネルギー変換概論 A Introduction to Advanced Electric Power Conversion Engineering A | Introduction to Advanced Electric Power Conversion Engineering A | | 1 | |
| | 次世代電気エネルギー変換概論 B Introduction to Advanced Electric Power Conversion Engineering B | Introduction to Advanced Electric Power Conversion Engineering B | | 1 | |
| | 宇宙機力学入門 A Introduction to Spacecraft Dynamics A | Introduction to Spacecraft Dynamics A | | 1 | |
| | 宇宙機力学入門 B Introduction to Spacecraft Dynamics B | Introduction to Spacecraft Dynamics B | | 1 | |
| | 自然環境計測データ工学 A Natural Signal Measurement and Data Engineering Techniques A | Natural Signal Measurement and Data Engineering Techniques A | | 1 | |
| | 自然環境計測データ工学 B Natural Signal Measurement and Data Engineering Techniques B | Natural Signal Measurement and Data Engineering Techniques B | | 1 | |
| | 科学技術英語特論 A Advanced Scientific English A | Advanced Scientific English A | | 1 | |
| | 科学技術英語特論 B Advanced Scientific English B | Advanced Scientific English B | | 1 | |
| | 企業体験実習 Exercise for Technical Intern | Exercise for Technical Intern | | 2 | |

| | | | | | | |
|--|--------------------------------|--|---|--|---|--|
| 応用科目 Applied Courses | 電子システム Electronic System | デバイスプロセス工学A | Devices Process Engineering A | | 1 | |
| | | デバイスプロセス工学B | Devices Process Engineering B | | 1 | |
| | | 表面・界面工学A | Surface and Interface Engineering A | | 1 | |
| | | 表面・界面工学B | Surface and Interface Engineering B | | 1 | |
| | | 応用プラズマ工学A | Applied Plasma Engineering A | | 1 | |
| | | 応用プラズマ工学B | Applied Plasma Engineering B | | 1 | |
| | | プラズマ流体解析入門A | Introduction to Numerical Analysis of Plasma Flow A | | 1 | |
| | | プラズマ流体解析入門B | Introduction to Numerical Analysis of Plasma Flow B | | 1 | |
| | 情報システム Information System | テクノロジートレンド工学A | Technology Trend Engineering A | | 1 | |
| | | テクノロジートレンド工学B | Technology Trend Engineering B | | 1 | |
| | | ミクストシグナルLSI工学A | Mixed-Signal LSI Design A | | 1 | |
| | | ミクストシグナルLSI工学B | Mixed-Signal LSI Design B | | 1 | |
| | | 映像情報処理学A | Information Processing in Video Systems A | | 1 | |
| | | 映像情報処理学B | Information Processing in Video Systems B | | 1 | |
| | | 情報セキュリティ特論 | Advanced Course on Information Security | | 2 | |
| | | 圏論と関数型プログラミングA | Category Theory and Functional Programming A | | 1 | |
| | 圏論と関数型プログラミングB | Category Theory and Functional Programming B | | 1 | | |
| | 通信システム Communication System | 電磁波工学特論A | Electromagnetic Wave Engineering A | | 1 | |
| | | 電磁波工学特論B | Electromagnetic Wave Engineering B | | 1 | |
| | | 電磁波計測工学特論 | Advanced Course on Electromagnetic Wave Measurement Engineering | | 2 | |
| 光波工学A | | Lightwave Engineering A | | 1 | | |
| 光波工学B | | Lightwave Engineering B | | 1 | | |
| 量子電子工学A | | Quantum Electronics A | | 1 | | |
| 量子電子工学B | | Quantum Electronics B | | 1 | | |
| 情報ネットワーク特論A | | Advanced Network by Design A | | 1 | | |
| 情報ネットワーク特論B | Advanced Network by Design B | | 1 | | | |
| 知能システム Intelligent System | 解析特論A | Topics in Mathematical Analysis A | | 1 | | |
| | 解析特論B | Topics in Mathematical Analysis B | | 1 | | |
| | データマイニング論A | Data Mining A | | 1 | | |
| | データマイニング論B | Data Mining B | | 1 | | |
| | 並列計算理論A | Theory of Parallel Computation A | | 1 | | |
| | 並列計算理論B | Theory of Parallel Computation B | | 1 | | |
| | 知能ソフトウェア理論A | Theory of Artificial Intelligence Software A | | 1 | | |
| | 知能ソフトウェア理論B | Theory of Artificial Intelligence Software B | | 1 | | |
| 課題研究 Master Thesis Report | ゼミナール・演習 | Seminar and Exercise | 4 | 研究の取りまとめを博士研究調査により行う場合は、課題研究に替えて*を履修すること。 (In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Master's Research) | | |
| | 課題研究 | Master's Research | 10 | | | |
| 博士研究調査 Ph.D. Qualifying Examination | 博士研究調査* | Ph.D. Qualifying Examination * | 10 | | | |

※1 国際交流科目、特別講義、学域で開講される授業科目、他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は、別に定める。

※1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are

6.地球社会基盤学専攻

6. Division of Geosciences and Civil Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|--|---|---|--|----------------|--------------------------------------|---|
| | | | 必修 Require ment | 選択 Elective | | |
| 研究科共通科目 Graduate School Common Courses | 大学院 G S 基盤科目 GS Basic Courses for Postgraduates | 異分野研究探査 I | Laboratory Rotation I | 0.5 | | |
| | | 異分野研究探査 II | Laboratory Rotation II | 0.5 | | |
| | | 研究者倫理 | Research Ethics | 1 | | |
| | | 知識集約型社会とデータサイエンス | Data Science and Society 5.0 | | 1 | 選択必修1単位以上 |
| | | 次世代の先端科学技術 | Advanced Science and Technology in the Next Generation | | 1 | Required to take more than 1 credit. |
| | | スマート創成科学 | Smart Science and Technology for Innovation | | 1 | |
| | | イノベーション方法論 A | Innovation Methodology A | | 1 | |
| | | イノベーション方法論 B | Innovation Methodology B | | 1 | |
| | | 数理・データサイエンス・A I 基盤 | Mathematical, Data Science, and AI Basic | | 1 | |
| | | 人間と社会の課題 | Human and Social Challenges | | 1 | 選択必修1単位以上 |
| | | 技術経営論 A | Management of Technology A | | 1 | Required to take more than 1 credit. |
| | | 技術経営論 B | Management of Technology B | | 1 | |
| | | ヘルスケア・イノベーション | Innovation in Healthcare | | 1 | |
| | | 破壊的イノベーションに向けた技術経営論 | MoT as for Disruptive Innovation | | 1 | |
| | | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | |
| | | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | |
| | | 数理科学 a | Topics in Mathematical Science a | | 1 | |
| | | 数理科学 b | Topics in Mathematical Science b | | 0.5 | |
| | | 理論物理学基礎 a | Introduction to Theoretical Physics a | | 1 | |
| | | 生物・分子物理学 a | Introduction to Molecular and Biophysics a | | 1 | |
| | | 凝縮系物理学基礎 a | Introduction to Condensed Matter Physics a | | 1 | |
| | | 宇宙・プラズマ物理学 a | Introduction to Plasma and Astrophysics a | | 1 | |
| | | 振動・波動物理学 a | Physics of Oscillations and Waves a | | 1 | |
| | | 計算理学概論 a | Topics in Computational Science a | | 1 | |
| | | 計算理学概論 b | Topics in Computational Science b | | 1 | |
| | | 先端物質化学概論 A | Advanced Material Chemistry A | | 1 | |
| | | 先端物質化学概論 B | Advanced Material Chemistry B | | 1 | |
| | | 応用物質化学概論 A | Applied Material Chemistry A | | 1 | |
| | | 応用物質化学概論 B | Applied Material Chemistry B | | 1 | |
| | | 生物科学基礎 A | Fundamentals of Biological Science A | | 1 | |
| | 生物科学基礎 B | Fundamentals of Biological Science B | | 1 | | |
| | バイオ工学特論 A | Advanced Bioengineering A | | 1 | | |
| | バイオ工学特論 B | Advanced Bioengineering B | | 1 | | |
| | 地球惑星科学基礎 A | Fundamentals of Earth and Planetary Science A | | 1 | | |
| | 地球惑星科学基礎 B | Fundamentals of Earth and Planetary Science B | | 1 | | |
| | 環境・エネルギー工学総論 A | Introduction to Environmental and Energy Engineering A | | 1 | | |
| | 環境・エネルギー工学総論 B | Introduction to Environmental and Energy Engineering B | | 1 | | |
| | 北陸先端科学技術大学院大学との 連携科目 Cooperative Studies with JAIST | 連携科目 Cooperative Studies with Jaist | | | 2 | |
| | 創成研究科目 Creative Research Courses | 創成研究 I Creative Research 1 | | | 2 | |
| | | 創成研究 II Creative Research 2 | | | 2 | |
| | 国際交流科目※ 1 International Studies Courses※ 3 | 国際プレゼンテーション演習 Practice on International Presentation | | | 2 | |
| | | 国際研究インターンシップ International Research Internship | | | 2 | |
| 専攻共通科目 Common Subjects for Division | 地球社会基盤ゼミナール | Seminar on Geosciences and Civil Engineering | 2 | | 地球社会基盤ゼミナールを含み4単位以上 | |
| | 地球惑星進化化学 A | Evolution of the Earth and Planets A | | 1 | Required to take more than 4 credits | |
| | 進化古生物学 A | Evolutionary Paleontology A | | 1 | including credits of Seminar on | |
| | 地球環境進化化学 A | Evolution of Earth Environments A | | 1 | Geosciences and Civil Engineering | |
| | 地球表層環境学 A | Earth Surface Environment A | | 1 | | |
| | 地震学 A | Seismology A | | 1 | | |
| | 地球惑星物質科学 A | Earth and Planetary Materials Science A | | 1 | | |
| | 結晶解析学 A | Crystal Structure Analysis A | | 1 | | |
| | 地球惑星ダイナミクス A | Earth and Planetary Dynamics A | | 1 | | |
| | 進化古生態学 A | Evolutionary Paleoecology A | | 1 | | |
| | 地表プロセス A | Earth surface processes A | | 1 | | |
| | 水質地球惑星化学 A | Aquatic Geochemistry A | | 1 | | |
| | 大気環境変動論 A | Atmospheric environment Dynamics A | | 1 | | |
| | プレート運動 A | Plate motions A | | 1 | | |
| | 河川・海岸のデータ解析学 | Data Analysis in Coastal and River Engineering | | 1 | | |
| | 流体物理の数値モデリング | Computational Fluid Mechanics | | 1 | | |
| | 構造工学特論 A | Advanced Structural Engineering A | | 1 | | |
| | コンクリート工学特論 A | Advanced concrete engineering A | | 1 | | |
| | 地盤力学特論 A | Advanced Geotechnical Engineering A | | 1 | | |
| | 都市の地震防災 A | Urban Earthquake Disaster Mitigation A | | 1 | | |
| | 水環境保全工学 A | Water Pollution Control Engineering A | | 1 | | |
| | 大気環境保全工学 A | Air Pollution Control Engineering A | | 1 | | |
| | 大気環境科学 | Science in Atmospheric Environment | | 1 | | |
| | 都市システム計画学 | Urban Planning System | | 1 | | |
| | 交通理論概論 | Introduction to Transportation and Traffic Theory | | 1 | | |
| | 地球社会基盤キャリア実習 | Practice in Career Development | | 1 | | |
| コース専門科目 Specialized Courses | 専門科目 Specialized Courses | 地球惑星進化化学 B | Evolution of the Earth and Planets B | | 1 | 実践科目2単位以上を含み専門科目との 合計4単位以上 Required to take more than 4 credits from Specialized Subjects and Practical Subjects with taking more than 2 credits from Practical Subjects |
| | | 進化古生物学 B | Evolutionary Paleontology B | | 1 | |
| | | 地球環境進化化学 B | Evolution of Earth Environments B | | 1 | |
| | | 地球表層環境学 B | Earth Surface Environment B | | 1 | |
| | | 地震学 B | Seismology B | | 1 | |
| | | 地球惑星物質科学 B | Earth and Planetary Materials Science B | | 1 | |
| | | 結晶解析学 B | Crystal Structure Analysis B | | 1 | |
| | | 地球惑星ダイナミクス B | Earth and Planetary Dynamics B | | 1 | |
| | | 進化古生態学 B | Evolutionary Paleoecology B | | 1 | |
| | | 地表プロセス B | Earth surface processes B | | 1 | |
| | | 水質地球惑星化学 B | Aquatic Geochemistry B | | 1 | |
| | | 大気環境変動論 B | Atmospheric environment Dynamics B | | 1 | |
| | | プレート運動 B | Plate motions B | | 1 | |

| | | | | | | |
|--|---------------------------|--|---|---|----|--|
| | | 地球環境のデータ解析学 | Data Analysis in Hydrology and Earth Science | | 1 | |
| | | 海岸・海洋の数値モデリング | Coastal and Ocean Modeling | | 1 | |
| | | 構造工学特論B | Advanced Structural Engineering B | | 1 | |
| | | コンクリート工学特論B | Advanced concrete engineering B | | 1 | |
| | | 地盤力学特論B | Advanced Geotechnical Engineering B | | 1 | |
| | | 都市の地震防災B | Urban Earthquake Disaster Mitigation B | | 1 | |
| | | 水環境保全工学B | Water Pollution Control Engineering B | | 1 | |
| | | 大気環境保全工学B | Air Pollution Control Engineering B | | 1 | |
| | | 環境システム計画学 | Environmental Planning System | | 1 | |
| | | 交通システム計画学 | Transportation Systems Planning | | 1 | |
| | | 環境リスク論 | Environmental Risk Assessment | | 1 | |
| | 実践科目 Practical Courses | リサーチスキルA | Research Skills A | | 1 | |
| | | リサーチスキルB | Research Skills B | | 1 | |
| | | 地球惑星科学総合演習A | Exercise of Earth and Planetary Science A | | 1 | |
| | | 地球惑星科学総合演習B | Exercise of Earth and Planetary Science B | | 1 | |
| | | 地球惑星科学総合演習C | Exercise of Earth and Planetary Science C | | 1 | |
| | | 地球惑星科学総合演習D | Exercise of Earth and Planetary Science D | | 1 | |
| | | フィールド実習A | Earth Science Field Work A | | 1 | |
| | | フィールド実習B | Earth Science Field Work B | | 2 | |
| | | 地球惑星科学特別講義※3 | Special Lecture on Earth and Planetary Science※3 | | 1 | |
| | | マグマ進化学I | Magmatology 1 | | 2 | |
| | | 海洋リソスフェア構造進化学 | Ocean Lithospheric Sciences | | 2 | |
| | | 水工学演習 | Exercises on hydraulic engineering | | 1 | |
| | | 構造・材料工学演習 | Exercises in structural engineering and materials | | 1 | |
| | | 地盤・防災工学演習 | Exercise on Geotechnical and Earthquake Engineering | | 1 | |
| | | 環境工学演習 | Exercise on Environmental Engineering | | 1 | |
| | | 都市・交通デザイン演習 | Exercise on Urban and Transportation Design | | 1 | |
| | 社会基盤工学特別講義※1 | Special Lecture on Civil Engineering※1 | | 1 | | |
| 課題研究 Master Thesis Report | | 地球惑星科学課題研究 | Research Work of Earth and Planetary Science | | 10 | 地球惑星科学コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、地球惑星科学課題研究に替えて*を履修すること。) Compulsory for Course in Earth & Planetary Sciences (In case of summarizing research activities as Ph.D.Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Research Work of Earth and Planetary Science) |
| | | 社会基盤工学課題研究 | Thesis Research on Civil Engineering | | 10 | 社会基盤工学コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、社会基盤工学課題研究に替えて*を履修すること。) Compulsory for Course in Civil Engineering (In case of summarizing research activities as Ph.D.Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Thesis Research on Civil Engineering) |
| 博士研究調査 Ph.D. Qualifying Examination | | 博士研究調査* | Ph.D. Qualifying Examination* | | 10 | |

※1 国際交流科目、特別講義、学域で開講される授業科目、他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は、別に定める。

※1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are stipulated separately.

7.生命理工学専攻
7.Division of Biological Science and Technology

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|---|---|---|--|----------------|---|--|
| | | | 必修 Requirement | 選択 Elective | | |
| 研究科共通科目 Graduate School Common Courses | 大学院 G S 基礎科目 GS Basic Courses for Postgraduates | 異分野研究探査 I | Laboratory Rotation I | 0.5 | | |
| | | 異分野研究探査 II | Laboratory Rotation II | 0.5 | | |
| | 研究者倫理 | Research Ethics | 1 | | | |
| | 知識集約型社会とデータサイエンス | Data Science and Society 5.0 | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | |
| | 次世代の先端科学技術 | Advanced Science and Technology in the Next Generation | | 1 | | |
| | スマート創成科学 | Smart Science and Technology for Innovation | | 1 | | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | | |
| | 数理・データサイエンス・A I 基礎 | Mathematical, Data Science, and AI Basic | | 1 | | |
| | 人間と社会の課題 | Human and Social Challenges | | 1 | 選択必修1単位以上 Required to take more than 1 credit. | |
| | 技術経営論 A | Management of Technology A | | 1 | | |
| | 技術経営論 B | Management of Technology B | | 1 | | |
| | ヘルスケア・イノベーション | Innovation in Healthcare | | 1 | | |
| | 破壊的イノベーションに向けた技術経営論 | MoT as for Disruptive Innovation | | 1 | | |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | | |
| | 数理科学 a | Topics in Mathematical Science a | | 1 | | |
| | 数理科学 b | Topics in Mathematical Science b | | 1 | | |
| | 理論物理学基礎 a | Introduction to Theoretical Physics a | | 1 | | |
| | 生物・分子物理学 a | Introduction to Molecular and Biophysics a | | 1 | | |
| | 凝縮系物理学基礎 a | Introduction to Condensed Matter Physics a | | 1 | | |
| | 宇宙・プラズマ物理学 a | Introduction to Plasma and Astrophysics a | | 1 | | |
| | 振動・波動物理学 a | Physics of Oscillations and Waves a | | 1 | | |
| | 計算科学概論 a | Topics in Computational Science a | | 1 | | |
| | 計算科学概論 b | Topics in Computational Science b | | 1 | | |
| | 先端物質化学概論 A | Advanced Material Chemistry A | | 1 | | |
| | 先端物質化学概論 B | Advanced Material Chemistry B | | 1 | | |
| | 応用物質化学概論 A | Applied Material Chemistry A | | 1 | | |
| | 応用物質化学概論 B | Applied Material Chemistry B | | 1 | | |
| | 生物科学基礎 A | Fundamentals of Biological Science A | | 1 | | |
| | 生物科学基礎 B | Fundamentals of Biological Science B | | 1 | | |
| | バイオ工学特論 A | Advanced Bioengineering A | | 1 | | |
| | バイオ工学特論 B | Advanced Bioengineering B | | 1 | | |
| | 地球惑星科学基礎 A | Fundamentals of Earth and Planetary Science A | | 1 | | |
| 地球惑星科学基礎 B | Fundamentals of Earth and Planetary Science B | | 1 | | | |
| 環境・エネルギー工学総論 A | Introduction to Environmental and Energy Engineering A | | 1 | | | |
| 環境・エネルギー工学総論 B | Introduction to Environmental and Energy Engineering B | | 1 | | | |
| 北陸先端科学技術大学院大学との連携科目 Cooperative Studies with JAIST | 連携科目 | Cooperative Studies with Jaist | | 2 | | |
| 創成研究科目 Creative Research Courses | 創成研究 I | Creative Research 1 | | 2 | | |
| | 創成研究 II | Creative Research 2 | | 2 | | |
| | 国際交流科目※1 | 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | |
| 国際研究インターンシップ | 国際研究インターンシップ | International Research Internship | | 2 | | |
| 専攻共通科目 Common Subjects for Division | 基礎・総合科目 Basic・Comprehensive Courses | 生命理工キャリア実習 | Research Internship | | 1 | |
| | スキル科目 Skill Courses | リサーチスキル 1 | Research Skills 1 | | 4 | 生物科学コース必修 Compulsory for Biological Sciences Course |
| | | リサーチスキル 2 | Research Skills 2 | | 4 | バイオ工学コース必修 Compulsory for Bioengineering Course |
| 専門科目 Specialized Courses | 細胞生命システム学 発生遺伝学 ゲノム生命システム学 生命構造機能システム学 A 生命構造機能システム学 B 生態システム学 A 生態システム学 B 生命高次システム学 A 生命高次システム学 B 環境生命システム学 A 環境生命システム学 B 生物科学基礎演習 生物科学演習 1 A 生物科学演習 1 B 生物科学演習 2 A 生物科学演習 2 B 生物科学特別講義※3 がん進展制御学 1 A がん進展制御学 1 B がん進展制御学 2 A がん進展制御学 2 B 水圏生理学 水圏発生学 水圏比較内分泌学 水圏増殖学 生命情報と先端バイオ A 生命情報と先端バイオ B 反応工学特論 A 反応工学特論 B 生物生産工学特論 A 生物生産工学特論 B 分子機能学特論 A 分子機能学特論 B ゲノム生物学特論 A | Systems Cell Biology | | 1 | 各コース必修2単位を含む計12単位以上修得 Required to take more than 12 credits including 2 credits from compulsory subjects | |
| | | Developmental Genetics | | 1 | | |
| | | Genomic Systems Biology | | 1 | | |
| | | Systems structure and function in biomolecules A | | 1 | | |
| | | Systems structure and function in biomolecules B | | 1 | | |
| | | Systems Ecology A | | 1 | | |
| | | Systems Ecology B | | 1 | | |
| | | Integrated Systems Biology A | | 1 | | |
| | | Integrated Systems Biology B | | 1 | | |
| | | Physiological systems responding to environmental stimuli A | | 1 | | |
| | | Physiological systems responding to environmental stimuli B | | 1 | | |
| | | Basic Exercise in Biological Science | | 2 | 生物科学コース必修 Compulsory for Biological Sciences Course | |
| | | Research Seminar in Biological Science 1A | | 1 | | |
| | | Research Seminar in Biological Science 1B | | 1 | | |
| | | Research Seminar in Biological Science 2A | | 1 | | |
| | | Research Seminar in Biological Science 2B | | 1 | | |
| | | Special Lecture on Biological Science※3 | | 1 | | |
| | | Biology of Cancer 1A | | 1 | | |
| | | Biology of Cancer 1B | | 1 | | |
| | | Biology of Cancer 2A | | 1 | | |
| | | Biology of Cancer 2B | | 1 | | |
| | | Physiology in fish and invertebrates | | 1 | | |
| | | Developmental biology in aquatic animals | | 1 | | |
| | | Comparative endocrinology of aquatic animals | | 1 | | |
| | | Aquaculture science | | 1 | | |
| | | Bioinformatics and Recent Advances in Biology A | | 1 | | |
| | | Bioinformatics and Recent Advances in Biology B | | 1 | | |
| | | Reaction Engineering A | | 1 | | |
| | | Reaction Engineering B | | 1 | | |
| | | Advanced Bioproduction Engineering A | | 1 | | |
| | | Advanced Bioproduction Engineering B | | 1 | | |
| | | Biomolecular function A | | 1 | | |
| | | Biomolecular function B | | 1 | | |
| | | Advanced Genome Biology A | | 1 | | |

| | | | | | |
|--|---|--|--|--|--|
| | ゲノム生物学特論B 融合化学A 融合化学B 応用微生物学特論 合成生物学特論 生体機能工学特論A 生体機能工学特論B バイオ工学総合演習 バイオ工学演習1A バイオ工学演習1B バイオ工学演習2A バイオ工学演習2B | Advanced Genome Biology B Interdisciplinary Chemistries A Interdisciplinary Chemistries B Advanced Applied Microbiology Advanced Synthetic Biology Advanced Biofunctional Engineering A Advanced Biofunctional Engineering B Exercise in Bioengineering Seminar in Bioengineering 1 A Seminar in Bioengineering 1 B Seminar in Bioengineering 2 A Seminar in Bioengineering 2 B | | 1 1 1 1 1 1 1 2 1 1 1 1 | バイオ工学コース必修 Compulsory for Bioengineering Course |
| 課題研究 Research work | 生物科学課題研究 | Research work in Biological Science | | 10 | 生物科学コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、生物科学課題研究に替えて*を履修すること。) Compulsory for Biological Sciences Course (In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Research work in Biological Science) |
| | バイオ工学課題研究 | Research work in Bioengineering | | 10 | バイオ工学コース必修 (ただし、研究の取りまとめを博士研究調査により行う場合は、バイオ工学課題研究に替えて*を履修すること。) Compulsory for Bioengineering Course (In case of summarizing research activities as Ph.D. Qualifying Examination, students are required to take Ph.D. Qualifying Examination instead of Research work in Bioengineering) |
| 博士研究調査 Ph.D. Qualifying Examination | 博士研究調査* | Ph.D. Qualifying Examination* | | 10 | |

※1 国際交流科目、特別講義、学域で開講される授業科目、他専攻で開講される授業科目及び他の研究科で開講される授業科目の履修に関する事項は、別に定める。

※1 About the registration of International Studies Courses, Special Lectures, courses offered within the college, courses offered by other division and courses offered by other graduate schools are stipulated separately.

別表第4 博士後期課程の授業科目及び単位数等
 Table 4. Subjects and Credits of Doctoral Program
 1.数物科学専攻
 1.Division of Mathematical and Physical Sciences

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|---|---|-------------------|----------------|--|
| | | | 必修 Requirement | 選択 Elective | |
| 大学院 G S 発展科目 GS Advanced Courses for Postgraduates | 次世代研究者倫理 | Research Ethics for Ph.D. Researchers | 1 | | |
| | 次世代エッセンシャル実践 | Transferable Skills for Ph.D. Researchers | 1 | | |
| | 次世代イノベーション開拓 | Unleashing the Potential of Innovation for Future | | 1 | 選択必修1単位以上 |
| | 数理・データサイエンス・AI 発展 | Mathematical, Data Science, and AI Advanced | | 1 | |
| | 国際研究実践 | International Collaborative Research for Innovation | 1 | | |
| 総合科目 Common Course | 数理学概論 | Surveys in Mathematical Science | | 2 | 1科目2単位以上必修 Required to take more than 1 subjects(2credits). |
| | 計算科学概論 | Surveys in Computational Science | | 2 | |
| | 物理学概論 | Surveys of Physics | | 2 | |
| 専門科目 Specialized Courses | 整数論特論 | Topics in Number Theory | | 2 | |
| | 代数幾何学特論 | Topics in Algebraic Geometry | | 2 | |
| | 微分幾何学 | Differential Geometry | | 2 | |
| | 幾何解析学 | Geometric Analysis | | 2 | |
| | 双曲幾何学 | Hyperbolic Geometry | | 2 | |
| | 複素解析幾何学 | Complex analytic geometry | | 2 | |
| | 特殊関数論 | Theory of special functions | | 2 | |
| | 数理物理特論 | Special Topics in Mathematical Physics | | 2 | |
| | 数学特別講義 | Special Lecture on Mathematics | | 2 | |
| | 素粒子論的宇宙論 | Particle cosmology | | 2 | |
| | 計算素粒子物理学 | computational elementary particle physics | | 2 | |
| | 素粒子現象論 | Particle phenomenology | | 2 | |
| | 超低温物理学 | Ultra Low Temperature Physics | | 2 | |
| | 超低温実験学 | Ultra Low Temperature Experimental Physics | | 2 | |
| | 低量子物性学 | Low Temperature Physics | | 2 | |
| | 極限環境物性物理学 | Physics Of Condensed Matter At Extreme Conditions | | 2 | |
| | 表面科学特論 | Surface Science | | 2 | |
| | プラズマ波動論 | Physics of Plasma Waves | | 2 | |
| | 非線形物理学 | Nonlinear Physics | | 2 | |
| | 気体分子構造論 | Structural Theory of Gaseous Molecules | | 2 | |
| | ナノバイオロジー | Nanobiology | | 2 | |
| | 生体分子構造動態論 | Structure and dynamics of biological molecules | | 2 | |
| | 精密X線分光学 | X-Ray Spectroscopy of Astronomical Objects | | 2 | |
| | X線・γ線天文学 | X-ray and gamma-ray astronomy | | 2 | |
| | 物理学特別講義 | Special Lecture on Physics | | 2 | |
| | 代数的組合せ論 | Algebraic combinatorics | | 2 | |
| | トポロジー | Topology | | 2 | |
| | 現象数理学 | Phenomenological Mathematics | | 2 | |
| | 計算代数学特論 | Special Topics on Computer Algebra | | 2 | |
| | 流れ問題の数値解析 | Numerical Analysis of Flow Problems | | 2 | |
| | 応用代数学 | Applied Algebra | | 2 | |
| | 偏微分方程式特論 | Special topics in partial differential equations | | 2 | |
| | 高度先端マテリアルシミュレーション | Frontiers of Material Simulation | | 2 | |
| | 計算物質設計学 | Computational Materials Design | | 2 | |
| | 計算物質科学 | Computational Physics of Materials | | 2 | |
| | 計算実験科学特論 | Special Topics in Computational Experimentation Science | | 2 | |
| | 計算凝縮系科学 | Computational Condensed Matter Science | | 2 | |
| | 計算生命科学 | Computational Life Science | | 2 | |
| | 高度先端計算科学特論 | Special Topics in Frontiers of Computational Science | | 2 | |
| | 計算結晶成長学 | Computational Physics of Crystal Growth | | 2 | |
| 応用計算科学特論 | Special Topics in Applied Computational Science | | 2 | | |
| 非線形反応システム特論 | Special Topics in Chemical Waves and Patterns | | 2 | | |
| 強相関電子物理学 | Strongly correlated electron physics | | 2 | | |
| 計算科学特別講義 | Special Lecture on Computational Science | | 2 | | |
| 数物科学国際特別インターンシップ | International Internship for Mathematical and Physical Sciences | | 2 | | |
| 専攻共通科目 Common for Division | 自然科学特別研究 | Advanced Seminar | 2 | | |
| | 自然科学特別演習 | Advanced Practice | | 2 | |
| | ジョブ型研究インターンシップ | Cooperative Education through Research Internships | | 2 | |

2.物質化学専攻

2.Division of Material Chemistry

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|---|--|-------------------|----------------|-----------------------------------|
| | | | 必修 Requirement | 選択 Elective | |
| 大学院GS発展科目 GS Advanced Courses for Postgraduates | 次世代研究者倫理 | Research Ethics for Ph.D. Researchers | 1 | | |
| | 次世代エッセンシャル実践 | Transferable Skills for Ph.D. Researchers | 1 | | |
| | 次世代イノベーション開拓 数理・データサイエンス・AI発展 | Unleashing the Potential of Innovation for Future Mathematical, Data Science, and AI Advanced | | 1 1 | 選択必修1単位以上 |
| | 国際研究実践 | International Collaborative Research for Innovation | 1 | | |
| 総合科目 (Common Course) | 先進物質化学総論 | Advanced Material Chemistry | 2 | | |
| 専門科目 Specialized Courses | 有機合成反応論 | Synthetic Organic Reactions | | 2 | |
| | 天然物合成化学 | Synthetic Natural Products Chemistry | | 2 | |
| | 無機合成化学 | Inorganic Synthetic Chemistry | | 2 | |
| | 機能性分子化学 | Functional Molecule Chemistry | | 2 | |
| | 錯体機能化学 | Functional Coordination Chemistry | | 2 | |
| | 生体模倣錯体化学 | Biomimetic Coordination Chemistry | | 2 | |
| | 超分子錯体化学 | Supramolecular Coordination Chemistry | | 2 | |
| | タンパク質機能化学 | Functions of Proteins | | 2 | |
| | タンパク質工学 | Protein Engineering | | 2 | |
| | 物性物理化学 | Materials Physical Chemistry | | 2 | |
| | 量子物理化学 | Quantum Physical Chemistry | | 2 | |
| | 界面計測化学 | Surface and Interface Analysis | | 2 | |
| | レーザー計測化学 | Laser Spectral Analysis | | 2 | |
| | 重元素核化学 | Nuclear Chemistry of Heavy Elements | | 2 | |
| | 凝縮系核物性特論 | Nuclear Condensed Matter Physics and Chemistry | | 2 | |
| | 応用環境放射能学 | Applied Chemistry of Environmental Radioactivity | | 2 | |
| | 生物地球化学特論 | Advanced Course in Biogeochemistry | | 2 | |
| | 計算地球化学 | Computational Geochemistry | | 2 | |
| | 応用地球システム科学 | Geosystem and Energy Sciences | | 2 | |
| | 強磁場科学 | High Magnetic Field Science | | 2 | |
| | 強磁場物性 | Physical Properties in High Magnetic Field | | 2 | |
| | 高分子精密合成論 | Precision Macromolecular Synthesis | | 2 | |
| | 高分子材料化学概論 | Polymer and Material Chemistry | | 2 | |
| | 高機能性材料化学 | Functional Material Chemistry | | 2 | |
| | 有機薄膜物性評価 | Characterization of Organic Thin Film for Electrical Device Application | | 2 | |
| | 電気化学反応論 | Electrochemical Kinetics | | 2 | |
| | 高分子半導体設計学 | Designs for Polymer semiconductors | | 2 | |
| | 水圏地球化学 | Hydrosphere Geochemistry | | 2 | |
| | 有機光化学 | Organic Photochemistry | | 2 | |
| | 有機機能分子化学 | Chemistry of Functional Organic Materials | | 2 | |
| | 界面物理化学特論 | Physical Chemistry for Interface | | 2 | |
| | 表面分析化学 | Surface Analytical Chemistry | | 2 | |
| 有機反応機構論 | Organic Reaction Mechanism | | 2 | | |
| 先端計測と鉄鋼表面化学 | Advanced Measurement and Surface Chemistry of Iron and Steels | | 2 | | |
| 鉄鋼分析化学 | Analytical Chemistry of Steelmaking Processes | | 2 | | |
| 化学産業特論 | The present and past of the chemical industry | | 2 | | |
| 産学連携実践化学 | Industry-University collaborative chemistry | | 2 | | |
| 分子機能設計・プロセス設計工学Ⅰ | Molecular Function Design・Process Design EngineeringⅠ | | 2 | | |
| 分子機能設計・プロセス設計工学Ⅱ | Molecular Function Design・Process Design EngineeringⅡ | | 2 | | |
| 法科学概論 | Introduction to forensic science | | 2 | | |
| 法科学分析 | Analytical techniques in forensic science | | 2 | | |
| 専攻共通科目 Common for Division | 自然科学特別研究 | Advanced Seminar | 2 | | |
| | 自然科学特別演習 | Advanced Practice | | 2 | |
| | ジョブ型研究インターンシップ | Cooperative Education through Research Internships | | 2 | |

3.機械科学専攻

3.Division of Mechanical Science and Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|--|---|--|-----------------------|----------------|--|
| | | | 必修 Require ment | 選択 Elective | |
| 大学院 G S 発展科目 GS Advanced Courses for Postgraduates | 次世代研究者倫理 | Research Ethics for Ph.D. Researchers | 1 | | |
| | 次世代エッセンシャル実践 | Transferable Skills for Ph.D. Researchers | 1 | | |
| | 次世代イノベーション開拓 数理・データサイエンス・AI 発展 | Unleashing the Potential of Innovation for Future Mathematical, Data Science, and AI Advanced | | 1 | 選択必修1単位以上 |
| | 国際研究実践 | International Collaborative Research for Innovation | 1 | 1 | |
| 総合科目 (Common Courses) | 機能創成システム学 | Systems Engineering and Mechanics | | 2 | 1科目2単位以上必修 Required to take more than 1 subjects(2credits). |
| | 知的システム創成学 | Intellectual System Creation Study | | 2 | |
| 専門科目 Specialized Courses | 材料強度の物理学 | Streth of Materials and Physical Metallurgy | | 2 | |
| | 知的自律移動ロボット | Intelligent Vehicle | | 2 | |
| | 知能システム工学 | Intelligent System | | 2 | |
| | 応用トライボロジー特論 | Advanced Applied Tribology | | 2 | |
| | 航空宇宙機の制御 | Advanced Flight Control | | 2 | |
| | テキスタイル物性論 | Physical Properties of Textiles | | 2 | |
| | ロボットテクノロジー特論 | Robot Technology | | 2 | |
| | 繊維機械システム論 | Textile Machines System | | 2 | |
| | 計算材料力学特論 | Advanced Computational Mechanics of Materials | | 2 | |
| | 燃焼応用工学特論 | Applied Combustion | | 2 | |
| | 環境流動計測論 | Measurement of Environmental Fluid Flows | | 2 | |
| | 界面熱力学特論 | Interfacial Thermodynamics | | 2 | |
| | 数値流体力学特論 | Advanced Computational Fluid Dynamics | | 2 | |
| | 低次元トポロジー | Low dimensional topology | | 2 | |
| | 偏微分方程式とその応用 | Partial differential equations and their applications | | 2 | |
| | 生産加工特論 | Manufacturing Technology | | 2 | |
| | 最適工学 | Engineering Optimization | | 2 | |
| | 臨床バイオメカニクス特論 | Advanced Clinical Biomechanics | | 2 | |
| | 身体運動ダイナミクス特論 | Dynamics of Human Body Motion | | 2 | |
| | ティッシュエンジニアリング特論 | Tissue Engineering | | 2 | |
| | 聴覚メカニクス特論 | Advanced Mechanics of Hearing | | 2 | |
| | 知的構造システム特論 | Smart Structures and Intelligent Systems | | 2 | |
| | 知的情報機械システム論 | Advanced intellectual informative and Mechanical System | | 2 | |
| | 人間機能定式化論 | Human Function Formulation theory | | 2 | |
| | 環境負荷低減工学特論 | Environmental Load Reduction Engineering | | 2 | |
| | 熱エネルギーシステム論 | Advanced Thermal Energy System | | 2 | |
| | 動的熱システム解析特論 | Dynamic Analysis on Thermal Energy System | | 2 | |
| | 輸送現象解析 | Analysis of transport phenomena | | 2 | |
| | 流体材料熱物性特論 | Fluid material thermophysical properties | | 2 | |
| | 金属材料物性特論 | Advanced Metallic Science | | 2 | |
| | 金属材料組織制御特論 | Advanced Metallic Microstructure Control | | 2 | |
| | 鉄鋼材料科学 II | Steel Science 2 | | 2 | |
| | 鉄鋼製造プロセス論 II | Advanced Process Matullurgy of Iron and Steel | | 2 | |
| | 内燃機関の燃焼と熱力学 | Internal combustion engine and thermodynamics | | 2 | |
| | 排出ガス浄化と電気工学 | Engine exhaust treatment and electrical engineering | | 2 | |
| | 衝撃工学特論 | Advanced Impact Engineering | | 2 | |
| | 宇宙・航空流体特論 | Advanced fluid dynamics for astrophysics and aeronautics | | 2 | |
| | 光エレクトロニクス特論 | Advanced optoelectronics | | 2 | |
| | 車両用空調・冷却システム概論 | Automobile Air Conditioner and Cooling System | | 2 | |
| | 車両用熱交換器概論 | Heat Exchangers for Automobile | | 2 | |
| 一貫生産工学 | Integrated production engineering | | 2 | | |
| 金型工学 | Die engineering | | 2 | | |
| サイバーフィジカルシステム概論 | Cyber physical system | | 2 | | |
| 非線形物理学特論 | Nonlinear Physics | | 2 | | |
| 量子力学系特論 | Advanced lectures on quantum dynamics | | 2 | | |
| 車室内騒音概論 | Noise in a Cabin | | 2 | | |
| 燃料噴射装置と設計工学 | Internal combustion engine and Design Engineering | | 2 | | |
| 金属付加製造特論 | Metal based Additive Manufacturing | | 2 | | |
| エルゴノミックデザイン特論 | Ergonomic Design | | 2 | | |
| 形状創成特論 | Advanced Form Shaping Technology | | 2 | | |
| 材料加工特論 | Processing Technology | | 2 | | |
| 専攻共通科目 Common for Division | 自然科学特別研究 | Advanced Seminar | 2 | | |
| | 自然科学特別演習 | Advanced Practice | | 2 | |
| | ジョブ型研究インターンシップ | Cooperative Education through Research Internships | | 2 | |

4.電子情報科学専攻

4.Division of Electrical Engineering and Computer Science

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|--|---------------------|---|-----------------------|----------------|--------------------------------------|
| | | | 必修 Require ment | 選択 Elective | |
| 大学院 G S 発展科目 GS Advanced Courses for Postgraduates | 次世代研究者倫理 | Research Ethics for Ph.D. Researchers | 1 | | |
| | 次世代エッセンシャル実践 | Transferable Skills for Ph.D. Researchers | 1 | | |
| | 次世代イノベーション開拓 | Unleashing the Potential of Innovation for Future | | 1 | 選択必修1単位以上 |
| | 数理・データサイエンス・AI 発展 | Mathematical, Data Science, and AI Advanced | | 1 | |
| | 国際研究実践 | International Collaborative Research for Innovation | 1 | | |
| 総合科目 (Common Course) | 電子情報科学概論 | Introduction to Electrical Engineering and Computer Science | 2 | | |
| 専門科目 Specialized Courses | システム制御数理 | Mathematical Systems Control Theory | | 2 | |
| | アドバンスト制御理論 | Advanced Control Theory | | 2 | |
| | 記号力学系とその応用 | Symbolic Dynamics and Its Applications | | 2 | |
| | ネヴァンlinna理論とその応用 | Nevanlinna Theory and its Applications | | 2 | |
| | 発展方程式特論 | Introduction to evolution equations | | 2 | |
| | 代数関数論 | Algebraic Function Theory | | 2 | |
| | データマイニング特論 | Advanced Data Mining | | 2 | |
| | 脳神経計算特論 | Advanced Neural Computation | | 2 | |
| | 分散並列リアルタイムシステム設計検証論 | Verification of Distributed, Parallel and Real-Time Systems | | 2 | |
| | ネットワーク計算論 | Theory of Network Computation | | 2 | |
| | 生命情報特論 | Advanced Bioinformatics | | 2 | |
| | 分子生物学特論 | Topics in Molecular Biology | | 2 | |
| | ナノ計測工学特論 | Advanced Nanoscale Measurement Technology | | 2 | |
| | 新機能集積回路設計特論 | Integrated Circuit Design for Emerging Devices | | 2 | |
| | インタフェースデバイス特論 | Interface Device Technologies | | 2 | |
| | 実時間信号処理 | Real-Time Signal Processing | | 2 | |
| | デジタル映像処理論 | Digital Video Processing | | 2 | |
| | 適応信号処理特論 | Advanced Adaptive Signal Processing | | 2 | |
| | 画像LSI特論 | Advanced VLSI Image Processing | | 2 | |
| | 波動信号処理 | Wave Signal Processing | | 2 | |
| | プラズマ波動工学 | Plasma Wave Engineering | | 2 | |
| | インテリジェント情報処理 | Intelligent Information Processing | | 2 | |
| | 先端セキュリティ技術論 | Advanced Security Technologies | | 2 | |
| | 機能性エネルギー変換学 | Functional Energy Conversion Systems | | 2 | |
| | プラズマ解析学 | Numerical Simulation Method for Plasmas | | 2 | |
| | 光エレクトロニクス特論 | Optical Electronics | | 2 | |
| | 光センシング論 | Optical Sensing | | 2 | |
| | 光集積回路論 | Theory of Optical Integrated Circuits | | 2 | |
| | 非平衡プラズマ工学 | Non-Equilibrium Plasma Engineering | | 2 | |
| | 薄膜電子工学 | Thin Film Electronics | | 2 | |
| | 酸化物デバイスプロセス論 | Oxide Device Processing | | 2 | |
| | 表面制御工学 | Surface Control Engineering | | 2 | |
| | ワイドギャップ半導体特論 | Advanced Wide Gap Semiconductors | | 2 | |
| | 通信用二次電池工学 | Secondary-Battery Technology for Telecommunication Services | | 2 | |
| | グリーンテクノロジー学 | Green Technology | | 2 | |
| | IoTシステム最適化工学 | IoT System Optimization Engineering | | 2 | |
| | LSIアーキテクチャ設計工学 | LSI Architecture Design Engineering | | 2 | |
| | 宇宙機の動力学特論 | Advanced Topics in Spacecraft Dynamics | | 2 | |
| | 科学衛星情報処理特論 | Advanced Spacecraft Onboard Data Processing | | 2 | |
| | 次世代ネットワーク特論 | Future Networks | | 2 | |
| 専攻共通科目 Common for Division | 自然科学特別研究 | Advanced Seminar | 2 | | |
| | 自然科学特別演習 | Advanced Practice | | 2 | |
| | ジョブ型研究インターンシップ | Cooperative Education through Research Internships | | 2 | |

5.環境デザイン学専攻

5.Division of Environmental Design

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|--|--|-----------------------|----------------|--------------------------------------|
| | | | 必修 Require ment | 選択 Elective | |
| 大学院GS発展科目 GS Advanced Courses for Postgraduates | 次世代研究者倫理 | Research Ethics for Ph.D. Researchers | 1 | | |
| | 次世代エッセンシャル実践 | Transferable Skills for Ph.D. Researchers | 1 | | |
| | 次世代イノベーション開拓 数理・データサイエンス・AI発展 | Unleashing the Potential of Innovation for Future Mathematical, Data Science, and AI Advanced | | 1 | 選択必修1単位以上 |
| | 国際研究実践 | International Collaborative Research for Innovation | 1 | | |
| 専門科目 Specialized Courses | 構造設計学 | Structure Design Study | | 2 | |
| | 環境振動学 | Environmental Vibration | | 2 | |
| | セメントコンクリート組織観察 | Cement Concrete Microscopy | | 2 | |
| | コンクリート構造物の診断学 | Diagnosis of Concrete Structure | | 2 | |
| | コンクリート構造の劣化診断工学 | Deterioration diagnosis engineering of concrete structure | | 2 | |
| | コンクリート構造のメンテナンス工学 | Maintenance engineering of concrete structure | | 2 | |
| | 橋梁メンテナンス概論 | Bridge maintenance Introduction | | 2 | |
| | 橋梁メンテナンスマネジメント概論 | Bridge Maintenance Management Introduction | | 2 | |
| | 一般鋼構造デザイン | Steel materials and advanced design of steel structures | | 2 | |
| | 地盤系鋼構造デザイン | Advanced design of steel structures in geotechnical engineering | | 2 | |
| | 地盤解析学 | Numerical Methods in Geomechanics | | 2 | |
| | 地盤情報処理特論 | Advanced information processing in geostatistics | | 2 | |
| | 地震防災工学 | Earthquake Disaster Mitigation Engineering | | 2 | |
| | 沿岸域の水理 | Nearshore Hydrodynamics | | 2 | |
| | 応用水力学 | Applied Hydrodynamics | | 2 | |
| | 地球環境と水循環 | Water Cycle and Global Environment | | 2 | |
| | 計画支援システム学 | Planning support system | | 2 | |
| | 空間経済学 | Spatial Economics | | 2 | |
| | 空間情報学特論 | Advanced Spatial Informatics | | 2 | |
| | 都市・交通システムモデリング | Urban and Transportation System Modeling | | 2 | |
| 建築計画学特論 | Advanced Architectural Planning Theory | | 2 | | |
| 環境微生物学特論 | Advanced Environmental Microbiology | | 2 | | |
| 水環境学特論 | Advanced Water Environmental Engineering | | 2 | | |
| 環境エアロゾル基礎 | Environmental Aerosol Foundation | | 2 | | |
| 極限環境科学概論 | Introduction to Material Science at Extreme Conditions | | 2 | | |
| 環境技術政策概論 | Introduction of environment technology and policy | | 2 | | |
| 都市・環境政策論 | Introduction of urban and environmental policy | | 2 | | |
| スマートシティ・計画支援システム概論 | Introduction of smart city and planning support | | 2 | | |
| 専攻共通科目 Common for Division | 自然科学特別研究 | Advanced Seminar | 2 | | |
| | 自然科学特別演習 | Advanced Practice | | 2 | |
| | ジョブ型研究インターンシップ | Cooperative Education through Research Internships | | 2 | |

6.自然システム学専攻
6.Division of Natural System

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|--|-----------------------------------|--|-------------------|----------------|-----------------------------------|
| | | | 必修 Requirement | 選択 Elective | |
| 大学院 G S 発展科目 GS Advanced Courses for Postgraduates | 次世代研究者倫理 | Research Ethics for Ph.D. Researchers | 1 | | |
| | 次世代エッセンシャル実践 | Transferable Skills for Ph.D. Researchers | 1 | | |
| | 次世代イノベーション開拓 数理・データサイエンス・AI 発展 | Unleashing the Potential of Innovation for Future Mathematical, Data Science, and AI Advanced | | 1 | 選択必修1単位以上 |
| | 国際研究実践 | International Collaborative Research for Innovation | 1 | 1 | |
| 総合科目 (Common Course) | 総合自然システム学特論 | Advanced course for biology,bio and chemical engineerings, and geoscience | 2 | | |
| 専門科目 Specialized Courses | 昆虫分子生物学 | Insect Molecular Biology | | 2 | |
| | 昆虫分子神経科学 | Insect molecular neuroscience | | 2 | |
| | 分子細胞生物学 | Molecular and Cellular Biology | | 2 | |
| | ゲノム時間生物学演習 | Chrnogenomics | | 2 | |
| | 分子微生物学 | Molecular Microbiology | | 2 | |
| | 植物代謝生理学 | Plant Metabolism | | 2 | |
| | 昆虫生態学 | Insect Ecology | | 2 | |
| | 動物行動生態学 | Animal behaviour and ecology | | 2 | |
| | タンパク質科学特論 | Topics in protein science | | 2 | |
| | 生体エネルギー論 | Bioenergetics | | 2 | |
| | 分子環境生物学 | Molecular Environmental Biology | | 2 | |
| | 運動生理学特論 | Advanced Exercise Physiology | | 2 | |
| | 陸水生物多様性学 | Limnological Biodiversity | | 2 | |
| | 神経免疫病理学 | Neuroimmunopathology | | 2 | |
| | ゲノム機能学 | Functional Genomics | | 2 | |
| | 自然環境の保全再生学 | Conservation and Restoration Ecology | | 2 | |
| | 水圏生殖生物学 | Aquatic reproductive biology | | 2 | |
| | 水圏発工生物学 | Biotechnology in Aquaculture Science | | 2 | |
| | 植物細胞生物学 | Plant Cell Biology | | 2 | |
| | 動物成長制御学 | Animal Growth Biology | | 2 | |
| | 幹細胞発生学 | Stem Cell and Developmental Biology | | 2 | |
| | 比較生理学 | Comparative Physiology | | 2 | |
| | ナノ生理学 | Nano Physiology | | 2 | |
| | 放射線生物学 | Radiation Biology | | 2 | |
| | 火山学 | Volcanology | | 2 | |
| | 環境進化生物学 | Evolutionary biology and environments | | 2 | |
| | 古環境変動解析論 | Analysis on paleoenvironmental fluctuations | | 2 | |
| | マントル岩石学 | Mantle Petrology | | 2 | |
| | 鉱物物理化学 | Physics and Chemistry of Minerals | | 2 | |
| | 岩石鉱物磁気学 | Rock and mineral magnetism | | 2 | |
| | 地球及び惑星ダイナミクス | Earth and Planetary Dynamics | | 2 | |
| | 地震活動論 | Seismic activity sciences | | 2 | |
| | 放射線地球学 | Radiation Geoscience | | 2 | |
| | 大気物質循環論 | Atmospheric composition and circulation | | 2 | |
| | 自然地理学 | Physical Geography | | 2 | |
| | 分子反応工学特論 | Molecular Reaction Engineering | | 2 | |
| | 高分子物性特論 | Polymer Physics | | 2 | |
| | 環境システム解析学 | Analyses of Environmental Systems | | 2 | |
| | エネルギー変換工学特論 | Advanced Energy Conversion Engineering | | 2 | |
| | バイオプロセス工学 | Bioprocess Engineering | | 2 | |
| | ナノマテリアル | Nanomaterial | | 2 | |
| | 生物システム工学 | Biosystem Engineering | | 2 | |
| | 先端化学工学特論 | Advanced Chemical Engineering | | 2 | |
| | 大気環境科学特論 | Atmospheric Environmental Science | | 2 | |
| | がん分子病理学 1 | Cancer molecular pathology 1 | | 2 | |
| | がん分子病理学 2 | Cancer molecular pathology 2 | | 2 | |
| | マグマ進化学 II | Magmatology II | | 2 | |
| | 海洋リソスフェア進化学 | Ocean Lithospheric Sciences | | 2 | |
| | 光誘起高分子反応工学特論 | Advanced photo-induced polymerization engineering | | 2 | |
| | 高分子分光計測特論 | Polymer Spectroscopy | | 2 | |
| 専攻共通科目 Common for Division | 自然科学特別研究 | Advanced Seminar | 2 | | |
| | 自然科学特別演習 | Advanced Practice | | 2 | |
| | ジョブ型研究インターンシップ | Cooperative Education through Research Internships | | 2 | |

別表5 MOTコースに関する授業科目及び単位数

Table 5. Subjects and Credits of MOT Course

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|---------------------|--|-------------------|----------------|-----------------------------------|
| | | | 必修 Requirement | 選択 Elective | |
| 技術経営 (MOT) コースに関する科目 MOT Course Subjects | 技術経営論A | Management of Technology A | | 1 | |
| | 技術経営論B | Management of Technology B | | 1 | |
| | 技術マネジメント基礎論A | Fundamentals of Management of Technology A | | 1 | |
| | 技術マネジメント基礎論B | Fundamentals of Management of Technology B | | 1 | |
| | イノベーション方法論A | Innovation Methodology A | | 1 | |
| | イノベーション方法論B | Innovation Methodology B | | 1 | |

別表6-1. サステナブル理工学プログラム（博士前期課程）宇宙工学分野に関する授業科目及び単位数

Table 6-1. Subjects and Credits of Graduate Program on Science and Engineering for Sustainable Development (Master's Program) : Space Science and Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|--|---|-----------------------|----------------|---|
| | | | 必修 Require ment | 選択 Elective | |
| プログラム共通科目 Common Courses for Program | 異分野研究探索Ⅰ | Laboratory Rotation I | 0.5 | | |
| | 異分野研究探索Ⅱ | Laboratory Rotation II | 0.5 | | |
| | 数理・データサイエンス・AI 基盤 | Mathematical, Data Science, and AI Basic | 1 | | |
| | 技術経営論 A | Management of Technology A | | 1 | 1単位以上選択必修 Required to take more than 1 credit |
| | 技術経営論 B | Management of Technology B | | 1 | |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | |
| 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | | |
| 国際研究インターンシップ | International Research Internship | | 2 | | |
| プログラム専門科目 Specialized Courses for Program | 衛星システム | Satellite System | | 1 | |
| | 衛星設計開発 A | Satellite Design and Development A | | 1 | |
| | 衛星設計開発 B | Satellite Design and Development B | | 1 | |
| | 凝縮系物理学基礎 a | Introduction to Condensed Matter Physics a | | 1 | 4単位以上修得 Required to take more than 4 credits |
| | 凝縮系物理学基礎 b | Introduction to Condensed Matter Physics b | | 1 | |
| | 宇宙・プラズマ物理学 a | Introduction to Plasma and Astrophysics a | | 1 | |
| | 宇宙・プラズマ物理学 b | Introduction to Plasma and Astrophysics b | | 1 | |
| | 振動・波動物理学 a | Physics of Oscillations and Waves a | | 1 | |
| | 振動・波動物理学 b | Physics of Oscillations and Waves b | | 1 | |
| | 理論物理学 a | Theoretical Physics a | | 1 | |
| | 理論物理学 b | Theoretical Physics b | | 1 | |
| | 固体物理学 a | Solid State Physics a | | 1 | |
| | 固体物理学 b | Solid State Physics b | | 1 | |
| | 低温物理学 a | Low Temperature Physics a | | 1 | |
| | 低温物理学 b | Low Temperature Physics b | | 1 | |
| | 宇宙物理学 a | Astrophysics a | | 1 | |
| | 宇宙物理学 b | Astrophysics b | | 1 | |
| | 適応信号処理 A | Adaptive Signal Processing A | | 1 | |
| | 適応信号処理 B | Adaptive Signal Processing B | | 1 | |
| | 通信工学特論 A | Advanced Communication Engineering A | | 1 | |
| | 通信工学特論 B | Advanced Communication Engineering B | | 1 | |
| | 映像情報処理学 A | Information Processing in Video Systems A | | 1 | |
| | 映像情報処理学 B | Information Processing in Video Systems B | | 1 | |
| | 電磁波工学特論 A | Electromagnetic Wave Engineering A | | 1 | |
| | 電磁波工学特論 B | Electromagnetic Wave Engineering B | | 1 | |
| | 電磁波計測工学特論 | Advanced Course on Electromagnetic Wave Measurement Engineering | | 2 | |
| | データマイニング論 A | Data Mining A | | 1 | |
| | データマイニング論 B | Data Mining B | | 1 | |
| | 宇宙機力学入門 A | Introduction to Spacecraft Dynamics A | | 1 | |
| | 宇宙機力学入門 B | Introduction to Spacecraft Dynamics B | | 1 | |

プログラム修了要件：別表6-1に定める授業科目のうちから必修6単位を含む合計11単位以上を修得し、プログラム修了のための審査に合格すること。

Degree Credit Requirements: Required to take a total of more than 11 credits including 6 required credits in Attached Table 6-1 and it is necessary to pass the review to complete the program.

別表6-2. サステナブル理工学プログラム（博士前期課程）環境・エネルギー理工学分野に関する授業科目及び単位数

Table 6-2. Subjects and Credits of Graduate Program on Science and Engineering for Sustainable Development (Master Program) : Environmental/Energy Science and Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|---|---------------------------------------|--|-----------------------|----------------|--|--|
| | | | 必修 Require ment | 選択 Elective | | |
| プログラム共通科目 Common Courses for Program | 異分野研究探索Ⅰ | Laboratory Rotation I | 0.5 | | | |
| | 異分野研究探索Ⅱ | Laboratory Rotation II | 0.5 | | | |
| | 数理・データサイエンス・AI 基礎 | Mathematical, Data Science, and AI Basic | 1 | | | |
| | 技術経営論 A | Management of Technology A | | 1 | 1単位以上選択必修 Required to take more than 1 credit | |
| | 技術経営論 B | Management of Technology B | | 1 | | |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | | |
| | 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | | |
| 国際研究インターンシップ | International Research Internship | | 2 | | | |
| プログラム専門科目 Specialized Courses for Program | 環境・エネルギー工学総論 A | Introduction to Environmental and Energy Engineering A | 1 | | | |
| | 環境・エネルギー工学総論 B | Introduction to Environmental and Energy Engineering B | 1 | | | |
| | 環境・エネルギー技術英語基礎 | English for Environmental and Energy Technology | | 1 | 1単位以上選択必修 | |
| | 総合日本語※ | Basic Japanese※ | | 1 | Required to take more than 1 credit | |
| | 環境・エネルギー技術海外研修 | Overseas Training Program on Environmental and Energy Technology | | 2 | 4単位以上修得 | |
| | 環境・エネルギー技術企業研修インターンシップ | Environmental and Energy Technology Internship | | 2 | Required to take more than 4 credits | |
| | 環境・エネルギー技術英語応用 | Advanced English for Environmental and Energy Technology | | 1 | | |
| | エネルギー・環境プログラム序論 | Introduction of Energy and Environmental Program | | 1 | | |
| | マテリアルプログラム序論 | Introduction of Material Program | | 1 | | |
| | 化学技術英語 | Technical English for Applied Chemistry | | 2 | | |
| | 応用化学熱力学 | Applied Chemical Thermodynamics | | 2 | | |
| | 先端エネルギーデバイス | Advanced Energy Devices | | 2 | | |
| | 環境保全化学 | Environment Conservation Chemistry | | 2 | | |
| | 燃焼工学特論 A | Combustion theory A | | 1 | | |
| | 燃焼工学特論 B | Combustion theory B | | 1 | | |
| | 熱移動工学特論 A | Advanced Heat Transfer Engineering A | | 1 | | |
| | 熱移動工学特論 B | Advanced Heat Transfer Engineering B | | 1 | | |
| | エネルギー変換工学特論 A | Advanced Energy Conversion Engineering A | | 1 | | |
| | エネルギー変換工学特論 B | Advanced Energy Conversion Engineering B | | 1 | | |
| | 分離工学特論 A | Separation and Purification Technology A | | 1 | | |
| | 分離工学特論 B | Separation and Purification Technology B | | 1 | | |
| | プロセス工学特論 A | Advanced Process Engineering A | | 1 | | |
| | プロセス工学特論 B | Advanced Process Engineering B | | 1 | | |
| | 熱エネルギープロセス解析 A | Analysis of Thermal energy process A | | 1 | | |
| | 熱エネルギープロセス解析 B | Analysis of Thermal energy process B | | 1 | | |
| | 環境生物化学工学 A | Environmental and Biochemical Engineering A | | 1 | | |
| | 環境生物化学工学 B | Environmental and Biochemical Engineering B | | 1 | | |
| | エアロゾル科学 A | Aerosol Science and Technology A | | 1 | | |
| | エアロゾル科学 B | Aerosol Science and Technology B | | 1 | | |
| | 次世代電気エネルギー変換概論 A | Introduction to Advanced Electric Power Conversion Engineering A | | 1 | | |
| | 次世代電気エネルギー変換概論 B | Introduction to Advanced Electric Power Conversion Engineering B | | 1 | | |
| | 応用プラズマ工学 A | Applied Plasma Engineering A | | 1 | | |
| | 応用プラズマ工学 B | Applied Plasma Engineering B | | 1 | | |
| | プラズマ流体解析入門 A | Introduction to Numerical Analysis of Plasma Flow A | | 1 | | |
| | プラズマ流体解析入門 B | Introduction to Numerical Analysis of Plasma Flow B | | 1 | | |
| | 光波工学 A | Lightwave Engineering A | | 1 | | |
| | 光波工学 B | Lightwave Engineering B | | 1 | | |
| | 水環境保全工学 A | Water Pollution Control Engineering A | | 1 | | |
| | 水環境保全工学 B | Water Pollution Control Engineering B | | 1 | | |
| | 大気環境保全工学 A | Air Pollution Control Engineering A | | 1 | | |
| 大気環境保全工学 B | Air Pollution Control Engineering B | | 1 | | | |
| 大気環境科学 | Science in Atmospheric Environment | | 1 | | | |
| 都市システム計画学 | Urban Planning System | | 1 | | | |
| 環境システム計画学 | Environmental Planning System | | 1 | | | |
| 環境リスク論 | Environmental Risk Assessment | | 1 | | | |
| 環境工学演習 | Exercise on Environmental Engineering | | 1 | | | |

※留学生対象 For International Students

プログラム修了要件：別表6-2に定める授業科目のうちから必修4単位を含む合計10単位以上を修得し、プログラム修了のための審査に合格すること。

Degree Credit Requirements: Required to take a total of more than 10 credits including 4 required credits in Attached Table 6-2 and it is necessary to pass the review to complete the program.

別表6-3. サステナブル理工学プログラム（博士前期課程）数理・ナノ物質理工学分野に関する授業科目及び単位数

Table 6-3. Subjects and Credits of Graduate Program on Science and Engineering for Sustainable Development (Master Program) : Mathematical/Nanomaterial Science and Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|---|-----------------------------------|---|-----------------------|----------------|---|-----------|
| | | | 必修 Require ment | 選択 Elective | | |
| プログラム共通科目 Common Courses for Program | 異分野研究探索Ⅰ | Laboratory Rotation I | 0.5 | | | |
| | 異分野研究探索Ⅱ | Laboratory Rotation II | 0.5 | | | |
| | 数理・データサイエンス・AI 基盤 | Mathematical, Data Science, and AI Basic | 1 | | | |
| | 技術経営論 A | Management of Technology A | | 1 | 1単位以上選択必修 (上限2単位まで修了に必要な 単位数に算入可) Required to take more than 1 credit (Up to 2 credits can be counted towards completion requirements.) | |
| | 技術経営論 B | Management of Technology B | | 1 | | |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | | |
| | 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | | |
| 国際研究インターンシップ | International Research Internship | | 2 | | | |
| プログラム専門科目 Specialized Courses for Program | 数理・ナノ物質理工学概論 | Mathematical/Nanomaterial Science and Engineering | 2 | | | |
| | 数理学物質科学概論 | Introduction to Mathematics and Materials Science | | 1 | | 1単位以上選択必修 |
| | ナノ化学概論 | Introduction to Nanochemistry | | 1 | Required to take more than 1 credit | |
| | ナノ物質科学概論 | Introduction to Nanomaterials Science | | 1 | 1 credit | |
| | 数理学 a | Topics in Mathematical Science a | | 1 | 4単位以上修得 | |
| | 数理学 b | Topics in Mathematical Science b | | 1 | (プログラム共通科目の選択 科目から2単位以上修得した 場合は、3単位以上修得) | |
| | 理論物理学基礎 a | Introduction to Theoretical Physics a | | 1 | Required to take more than 4 credits (Required to take more than 3 credits, if you take 2 credits from the elective subjects of Common Courses for Program.) | |
| | 理論物理学基礎 b | Introduction to Theoretical Physics b | | 1 | | |
| | 生物・分子物理学 a | Introduction to Molecular and Biophysics a | | 1 | | |
| | 生物・分子物理学 b | Introduction to Molecular and Biophysics b | | 1 | | |
| | 凝縮系物理学基礎 a | Introduction to Condensed Matter Physics a | | 1 | | |
| | 凝縮系物理学基礎 b | Introduction to Condensed Matter Physics b | | 1 | | |
| | 宇宙・プラズマ物理学 a | Introduction to Plasma and Astrophysics a | | 1 | | |
| | 宇宙・プラズマ物理学 b | Introduction to Plasma and Astrophysics b | | 1 | | |
| | 振動・波動物理学 a | Physics of Oscillations and Waves a | | 1 | | |
| | 振動・波動物理学 b | Physics of Oscillations and Waves b | | 1 | | |
| | 計算理学概論 a | Topics in Computational Science a | | 1 | | |
| | 計算理学概論 b | Topics in Computational Science b | | 1 | | |
| | 代数学Ⅰ a | Algebra Ia | | 1 | | |
| | 代数学Ⅰ b | Algebra Ib | | 1 | | |
| | 幾何学Ⅰ a | Geometry Ia | | 1 | | |
| | 幾何学Ⅰ b | Geometry Ib | | 1 | | |
| | 解析学Ⅰ a | Analysis Ia | | 1 | | |
| | 解析学Ⅰ b | Analysis Ib | | 1 | | |
| | 高度先端計算科学概論 a | Introduction to Frontiers of Computational Science a | | 1 | | |
| | 高度先端計算科学概論 b | Introduction to Frontiers of Computational Science b | | 1 | | |
| | 計算物性科学 | Computational Solid State Physics | | 2 | | |
| | 計算ナノ科学 a | Computational Nanoscience a | | 1 | | |
| | 計算ナノ科学 b | Computational Nanoscience b | | 1 | | |
| | 計算バイオ科学 a | Computational Chemistry and Bioscience a | | 1 | | |
| | 計算バイオ科学 b | Computational Chemistry and Bioscience b | | 1 | | |
| | 計算実験科学概論 a | Introduction to Computational Experimentation Science a | | 1 | | |
| | 計算実験科学概論 b | Introduction to Computational Experimentation Science b | | 1 | | |
| | 離散数学基礎 a | Basics of Discrete Mathematics a | | 1 | | |
| | 離散数学基礎 b | Basics of Discrete Mathematics b | | 1 | | |
| | 応用解析学基礎 a | Basics of Applied Analysis a | | 1 | | |
| | 応用解析学基礎 b | Basics of Applied Analysis b | | 1 | | |
| | 物質創成化学Ⅰ | Material Creation Chemistry I | | 1 | | |
| | 物質創成化学Ⅱ | Material Creation Chemistry II | | 1 | | |
| | 物質創成化学Ⅲ | Material Creation Chemistry III | | 1 | | |
| | 物質創成化学Ⅳ | Material Creation Chemistry IV | | 1 | | |
| | 物質解析化学Ⅰ | Material Analysis Chemistry I | | 1 | | |
| | 物質解析化学Ⅱ | Material Analysis Chemistry II | | 1 | | |
| | 物質解析化学Ⅲ | Material Analysis Chemistry III | | 1 | | |
| | 物質解析化学Ⅳ | Material Analysis Chemistry IV | | 1 | | |
| | エネルギー・環境プログラム序論 | Introduction of Energy and Environmental Program | | 1 | | |
| | マテリアルプログラム序論 | Introduction of Material Program | | 1 | | |
| | 化学技術英語 | Technical English for Applied Chemistry | | 2 | | |
| | 非線形波動概論 A | Nonlinear Wave Equations A | | 1 | | |
| | 非線形波動概論 B | Nonlinear Wave Equations B | | 1 | | |
| | 固体物性評価基礎論 | Fundamentals of Materials Characterization | | 1 | | |
| | デバイスプロセス工学 A | Devices Process Engineering A | | 1 | | |
| | デバイスプロセス工学 B | Devices Process Engineering B | | 1 | | |
| | 表面・界面工学 A | Surface and Interface Engineering A | | 1 | | |
| | 表面・界面工学 B | Surface and Interface Engineering B | | 1 | | |
| | 光波工学 A | Lightwave Engineering A | | 1 | | |
| | 光波工学 B | Lightwave Engineering B | | 1 | | |

プログラム修了要件：別表6-3に定める授業科目のうちから必修4単位を含む合計10単位以上を修得し、プログラム修了のための審査に合格すること。

Degree Credit Requirements: Required to take a total of more than 10 credits including 4 required credits in Attached Table 6-3 and it is necessary to pass the review to complete the program.

別表6-4. サステナブル理工学プログラム（博士前期課程）超スマート社会理工学分野に関する授業科目及び単位数

Table 6-4. Subjects and Credits of Graduate Program on Science and Engineering for Sustainable Development (Master Program) : Science and Engineering for Super Smart Society

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|---|---|---|-----------------------|----------------|---|--|
| | | | 必修 Require ment | 選択 Elective | | |
| プログラム共通科目 Common Courses for Program | 異分野研究探索Ⅰ | Laboratory Rotation I | 0.5 | | | |
| | 異分野研究探索Ⅱ | Laboratory Rotation II | 0.5 | | | |
| | 数理・データサイエンス・AI 基盤 | Mathematical, Data Science, and AI Basic | 1 | | | |
| | 技術経営論A | Management of Technology A | | 1 | 1単位以上選択必修 Required to take more than 1 credit | |
| | 技術経営論B | Management of Technology B | | 1 | | |
| | 技術マネジメント基礎論A | Fundamentals of Management of Technology A | | 1 | | |
| | 技術マネジメント基礎論B | Fundamentals of Management of Technology B | | 1 | | |
| | イノベーション方法論A | Innovation Methodology A | | 1 | | |
| | イノベーション方法論B | Innovation Methodology B | | 1 | | |
| | 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | | |
| 国際研究インターンシップ | International Research Internship | | 2 | | | |
| プログラム専門科目 Specialized Courses for Program | 超スマート社会理工学概論A | Science and engineering for super smart society A | 1 | | | |
| | 超スマート社会理工学概論B | Science and engineering for super smart society B | 1 | | | |
| | 数理科学 a | Topics in Mathematical Science a | | 1 | プログラム専門科目において 6単位以上修得（所属専攻以 外の専攻開講科目1単位以上 を含む） Required to take more than 6 credits from Specialized Courses for Program (It must includes more than 1 credit from the other divisions' subjects.) | |
| | 数理科学 b | Topics in Mathematical Science b | | 1 | | |
| | 代数学Ⅰ a | Algebra Ia | | 1 | | |
| | 代数学Ⅰ b | Algebra Ib | | 1 | | |
| | 幾何学Ⅰ a | Geometry Ia | | 1 | | |
| | 幾何学Ⅰ b | Geometry Ib | | 1 | | |
| | 解析学Ⅰ a | Analysis Ia | | 1 | | |
| | 解析学Ⅰ b | Analysis Ib | | 1 | | |
| | 離散数学基礎 a | Basics of Discrete Mathematics a | | 1 | | |
| | 離散数学基礎 b | Basics of Discrete Mathematics b | | 1 | | |
| | 応用解析学基礎 a | Basics of Applied Analysis a | | 1 | | |
| | 応用解析学基礎 b | Basics of Applied Analysis b | | 1 | | |
| | メカニズムの運動解析と設計 A | Kinematics and Design in Mechanism A | | 1 | | |
| | メカニズムの運動解析と設計 B | Kinematics and Design in Mechanism B | | 1 | | |
| | 特殊加工学特論 A | Non-traditional machining A | | 1 | | |
| | 特殊加工学特論 B | Non-traditional machining B | | 1 | | |
| | 電気加工学特論 A | Electrical Machining A | | 1 | | |
| | 電気加工学特論 B | Electrical Machining B | | 1 | | |
| | 工学系の最適設計法 A | Design Optimization for Engineering A | | 1 | | |
| | 工学系の最適設計法 B | Design Optimization for Engineering B | | 1 | | |
| | CAD/CAM生産システム A | Applied Manufacturing System A | | 1 | | |
| | CAD/CAM生産システム B | Applied Manufacturing System B | | 1 | | |
| | 連成解析論 A | Multiphysics Analysis A | | 1 | | |
| | 連成解析論 B | Multiphysics Analysis B | | 1 | | |
| | 機械学習 A | Machine Learning A | | 1 | | |
| | 機械学習 B | Machine Learning B | | 1 | | |
| | 実世界ロボティクス特論 A | Real-world robotics A | | 1 | | |
| | 実世界ロボティクス特論 B | Real-world robotics B | | 1 | | |
| | 航空宇宙システム特論 A | Aeronautical Systems A | | 1 | | |
| | 航空宇宙システム特論 B | Aeronautical Systems B | | 1 | | |
| | インテリジェントロボット A | Intelligent Robot A | | 1 | | |
| | インテリジェントロボット B | Intelligent Robot B | | 1 | | |
| | コンピュータビジョン特論 A | Computer Vision A | | 1 | | |
| | コンピュータビジョン特論 B | Computer Vision B | | 1 | | |
| | 生体運動制御 A | Motor control of human movement A | | 1 | | |
| | 生体運動制御 B | Motor control of human movement B | | 1 | | |
| | 生体機械工学特論 A | Advanced Biomechanical Engineering A | | 1 | | |
| | 生体機械工学特論 B | Advanced Biomechanical Engineering B | | 1 | | |
| | 環境生物化学工学 A | Environmental and Biochemical Engineering A | | 1 | | |
| | 環境生物化学工学 B | Environmental and Biochemical Engineering B | | 1 | | |
| | 拡散分離工学特論 A | Diffusional Separation Engineering A | | 1 | | |
| | 拡散分離工学特論 B | Diffusional Separation Engineering B | | 1 | | |
| | エアロゾル科学 A | Aerosol Science and Technology A | | 1 | | |
| | エアロゾル科学 B | Aerosol Science and Technology B | | 1 | | |
| | 大気環境科学特論 A | Atmospheric Environmental Science A | | 1 | | |
| | 大気環境科学特論 B | Atmospheric Environmental Science B | | 1 | | |
| | 制御工学特論 A | Advanced Topics in Control Engineering A | | 1 | | |
| | 制御工学特論 B | Advanced Topics in Control Engineering B | | 1 | | |
| | ロバスト制御 | Robust Control | | 2 | | |
| | メディアプロセッサ A | Media Processors A | | 1 | | |
| | メディアプロセッサ B | Media Processors B | | 1 | | |
| 適応信号処理 A | Adaptive Signal Processing A | | 1 | | | |
| 適応信号処理 B | Adaptive Signal Processing B | | 1 | | | |
| SoC設計基礎論 A | SoC Design Fundamentals A | | 1 | | | |
| SoC設計基礎論 B | SoC Design Fundamentals B | | 1 | | | |
| 通信工学特論 A | Advanced Communication Engineering A | | 1 | | | |
| 通信工学特論 B | Advanced Communication Engineering B | | 1 | | | |
| テクノロジトレンド工学 A | Technology Trend Engineering A | | 1 | | | |
| テクノロジトレンド工学 B | Technology Trend Engineering B | | 1 | | | |
| ミクストシグナルLSI工学 A | Mixed-Signal LSI Design A | | 1 | | | |
| ミクストシグナルLSI工学 B | Mixed-Signal LSI Design B | | 1 | | | |
| 映像情報処理学 A | Information Processing in Video Systems A | | 1 | | | |
| 映像情報処理学 B | Information Processing in Video Systems B | | 1 | | | |
| 解析特論 A | Topics in Mathematical Analysis A | | 1 | | | |
| 解析特論 B | Topics in Mathematical Analysis B | | 1 | | | |
| データマイニング論 A | Data Mining A | | 1 | | | |
| データマイニング論 B | Data Mining B | | 1 | | | |

| | | |
|--------------|---|---|
| 並列計算理論 A | Theory of Parallel Computation A | 1 |
| 並列計算理論 B | Theory of Parallel Computation B | 1 |
| 知能ソフトウェア理論 A | Theory of Artificial Intelligence Software A | 1 |
| 知能ソフトウェア理論 B | Theory of Artificial Intelligence Software B | 1 |
| 都市システム計画学 | Urban Planning System | 1 |
| 交通理論概論 | Introduction to Transportation and Traffic Theory | 1 |
| 環境システム計画学 | Environmental Planning System | 1 |
| 交通システム計画学 | Transportation Systems Planning | 1 |

プログラム修了要件：別表6-4に定める授業科目のうちから必修4単位を含む合計11単位以上を修得し、プログラム修了のための審査に合格すること。

Degree Credit Requirements: Required to take a total of more than 11 credits including 4 required credits in Attached Table 6-4 and it is necessary to pass the review to complete the program.

別表6-5. サステナブル理工学プログラム（博士前期課程）生命・フィールド理工学分野に関する授業科目及び単位数

Table 6-5. Subjects and Credits of Graduate Program on Science and Engineering for Sustainable Development (Master Program) : Life/Field Science and Engineering

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|-----------------------------------|---|-----------------------|----------------|---|
| | | | 必修 Require ment | 選択 Elective | |
| プログラム共通科目 Common Courses for Program | 異分野研究探索Ⅰ | Laboratory Rotation I | 0.5 | | |
| | 異分野研究探索Ⅱ | Laboratory Rotation II | 0.5 | | |
| | 数理・データサイエンス・AI 基盤 | Mathematical, Data Science, and AI Basic | 1 | | |
| | 技術経営論 A | Management of Technology A | | 1 | 1単位以上選択必修 |
| | 技術経営論 B | Management of Technology B | | 1 | Required to take more than 1 credit |
| | 技術マネジメント基礎論 A | Fundamentals of Management of Technology A | | 1 | |
| | 技術マネジメント基礎論 B | Fundamentals of Management of Technology B | | 1 | |
| | イノベーション方法論 A | Innovation Methodology A | | 1 | |
| | イノベーション方法論 B | Innovation Methodology B | | 1 | |
| | 国際プレゼンテーション演習 | Practice on International Presentation | | 2 | |
| 国際研究インターンシップ | International Research Internship | | 2 | | |
| プログラム専門科目 Specialized Courses for Program | フィールド生物学 | Field Biology | 1 | | |
| | 地球環境フィールド理工学概論 | Introduction to Earth Environmental Field Science and Engineering | 1 | | |
| | 社会基盤工学概論 | Introduction to Civil and Infrastructure Engineering | 1 | | |
| | 細胞生命システム学 | Systems Cell Biology | | 1 | 4単位以上修得 |
| | 発生遺伝学 | Developmental Genetics | | 1 | Required to take more than 4 credits |
| | ゲノム生命システム学 | Genomic Systems Biology | | 1 | |
| | 生命構造機能システム学 A | Systems structure and function in biomolecules A | | 1 | |
| | 生態システム学 A | Systems Ecology A | | 1 | |
| | 生命高次システム学 A | Integrated Systems Biology A | | 1 | |
| | 環境生命システム学 A | Physiological systems responding to environmental stimuli A | | 1 | |
| | 生物科学特別講義 | Special Lecture on Biological Science | | 1 | |
| | がん進展制御学 1 A | Biology of Cancer 1A | | 1 | |
| | がん進展制御学 2 A | Biology of Cancer 2A | | 1 | |
| | 水圏生理学 | Physiology in fish and invertebrates | | 1 | |
| | 水圏発生学 | Developmental biology in aquatic animals | | 1 | |
| | 水圏比較内分泌学 | Comparative endocrinology of aquatic animals | | 1 | |
| | 水圏増養殖学 | Aquaculture science | | 1 | |
| | 生命情報と先端バイオ A | Bioinformatics and Recent Advances in Biology A | | 1 | |
| | 反応工学特論 A | Reaction Engineering A | | 1 | |
| | 生物生産工学特論 A | Advanced Bioproduction Engineering A | | 1 | |
| | 分子機能学特論 A | Biomolecular function A | | 1 | |
| | ゲノム生物学特論 A | Advanced Genome Biology A | | 1 | |
| | 融合化学 A | Interdisciplinary Chemistries A | | 1 | |
| | 応用微生物学特論 | Advanced Applied Microbiology | | 1 | |
| | 合成生物学特論 | Advanced Synthetic Biology | | 1 | |
| | 生体機能工学特論 A | Advanced Biofunctional Engineering A | | 1 | |
| | 地球惑星進化化学 A | Evolution of the Earth and Planets A | | 1 | |
| | 進化古生物学 A | Evolutionary Paleontology A | | 1 | |
| | 地球環境進化化学 A | Evolution of Earth Environments A | | 1 | |
| | 地球表層環境学 A | Earth Surface Environment A | | 1 | |
| | 地震学 A | Seismology A | | 1 | |
| | 地球惑星物質科学 A | Earth and Planetary Materials Science A | | 1 | |
| | 結晶解析学 A | Crystal Structure Analysis A | | 1 | |
| | 地球惑星ダイナミクス A | Earth and Planetary Dynamics A | | 1 | |
| | 進化古生態学 A | Evolutionary Paleocology A | | 1 | |
| | 地表プロセス A | Earth surface processes A | | 1 | |
| | 水質地球惑星化学 A | Aquatic Geochemistry A | | 1 | |
| | 大気環境変動論 A | Atmospheric environment Dynamics A | | 1 | |
| | フィールド実習 A | Earth Science Field Work A | | 1 | |
| | フィールド実習 B | Earth Science Field Work B | | 2 | |
| | 河川・海岸のデータ解析学 | Data Analysis in Coastal and River Engineering | | 1 | |
| | 流体物理の数値モデリング | Computational Fluid Mechanics | | 1 | |
| | 構造工学特論 A | Advanced Structural Engineering A | | 1 | |
| | コンクリート工学特論 A | Advanced concrete engineering A | | 1 | |
| | 地盤力学特論 A | Advanced Geotechnical Engineering A | | 1 | |
| | 都市の地震防災 A | Urban Earthquake Disaster Mitigation A | | 1 | |
| | 地球環境のデータ解析学 | Data Analysis in Hydrology and Earth Science | | 1 | |
| | 海岸・海洋の数値モデリング | Coastal and Ocean Modeling | | 1 | |
| | 構造工学特論 B | Advanced Structural Engineering B | | 1 | |
| | コンクリート工学特論 B | Advanced concrete engineering B | | 1 | |
| | 地盤力学特論 B | Advanced Geotechnical Engineering B | | 1 | |
| | 都市の地震防災 B | Urban Earthquake Disaster Mitigation B | | 1 | |
| | 水工学演習 | Exercises on hydraulic engineering | | 1 | |
| | 構造・材料工学演習 | Exercises in structural engineering and materials | | 1 | |
| | 地盤・防災工学演習 | Exercise on Geotechnical and Earthquake Engineering | | 1 | |

プログラム修了要件：別表6-5に定める授業科目のうちから必修5単位を含む合計10単位以上を修得し、プログラム修了のための審査に合格すること。

Degree Credit Requirements: Required to take a total of more than 10 credits including 5 required credits in Attached Table 6-5 and it is necessary to pass the review to complete the program.

別表第7-1 ナノ精密医学・理工学卓越大学院プログラム(博士前期課程)に関する授業科目及び単位数等

Table 7-1. Subjects and Credits of WISE Program for Nano-Precision Medicine, Science, and Technology (Master Program)
(omitted)

別表第7-2 ナノ精密医学・理工学卓越大学院プログラム(博士後期課程)に関する授業科目及び単位数等

Table 7-2. Subjects and Credits of WISE Program for Nano-Precision Medicine, Science, and Technology (Doctoral Program)
(omitted)

別表8 GSリーディングプログラムに関する授業科目及び単位数
Table 8. Subjects and Credits of GS Leading Program

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|--|---|--|---|----------------|-----------------------------------|---|
| | | | 必修 Requirement | 選択 Elective | | |
| プログラム共通科目 Common Courses for GS Leading Program | 異分野研究 | Research in Interdisciplinary Field | 1 | | | |
| | 長期インターンシップ | Long-Term Internship | | 2 | | |
| | 海外フィールドワーク | Overseas Fieldwork | | 2 | | |
| GS国際インタラクティブESD コース科目 Courses for GS-II-ESD Course | 導入科目群 Introductory Courses | 国際コミュニケーション基礎演習 | Basic International Communication Exercise | 2 | | 日本人学生対象 For Japanese Students |
| | | サバイバル日本語演習 | Survival Japanese Exercise | 1 | | 留学生対象 For International Students |
| | | 日本文化・地域文化体験 | Experience in Japanese Culture and Society | | 1 | 留学生対象1単位以上必修 |
| | | 企業・大学見学 | Experience in Company and University in Japan | | 1 | International Students must take more than 1 credits. |
| | 国際インタラクティブ科目群 International and Interactive Communication Courses | 国際コミュニケーション演習 | International Communication Exercise | | 2 | |
| | | 国際プレゼンテーション演習 | Practice on International Presentation | 2 | | |
| | | 国際プロジェクト演習 | International Project Exercise | | 2 | |
| | キャリア形成科目 Career Development Courses | 技術経営論A | Management of Technology A | | 1 | |
| | | 技術経営論B | Management of Technology B | | 1 | |
| | | 技術マネジメント基礎論A | Fundamentals of Management of Technology A | | 1 | |
| 技術マネジメント基礎論B | | Fundamentals of Management of Technology B | | 1 | | |
| イノベーション方法論A | | Innovation Methodology A | | 1 | | |
| イノベーション方法論B | | Innovation Methodology B | | 1 | | |
| 分野融合型数物科学グローバル人材育成コース科目 Courses for GS-GHR Course | 国際プレゼンテーション | International Presentation | 1 | | | |

別表9 宇宙理工学コース(博士後期課程)に関する授業科目及び単位数
Table 9. Subjects and Credits of Space Science and Technology Course(Doctoral Program)
(omitted)

別表第10 環境・エネルギー技術国際コースに関する授業科目及び単位数

Table 10. Subjects and Credits of Environmental and Energy Technologies International Course

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements | |
|--|--------------------------|--|--|----------------|---|---|
| | | | 必修 Requirement | 選択 Elective | | |
| 大学院 G S 基礎科目 GS Basic Courses for Postgraduates | 異分野研究探査 I | Laboratory Rotation I | 0.5 | | | |
| | 異分野研究探査 II | Laboratory Rotation II | 0.5 | | | |
| | 数理・データサイエンス・AI 基礎 | Mathematical, Data Science, and AI Basic | | 1 | | |
| | 環境・エネルギー工学総論 A | Introduction to Environmental and Energy Engineering A | 1 | | | |
| | 環境・エネルギー工学総論 B | Introduction to Environmental and Energy Engineering B | 1 | | | |
| 言語科目 Language Courses | 環境・エネルギー技術英語基礎 | English for Environmental and Energy Technology | | 1 | 1単位以上選択必修 Required to take more than 1 credit | |
| | 総合日本語※ | Basic Japanese※ | | 1 | | |
| 環境・エネルギー技術 専門科目 Specialized Courses on Environmental and Energy Technology | 環境・エネルギー技術特論 | Advanced English for Environmental and Energy Technology Introduction of Energy and Environmental Program | | 1 | 選択科目の中から4単位以上を修得 Required to take more than 4 credits from Elective Subjects | |
| | マテリアルプログラム序論 | Introduction of Material Program | | 1 | | |
| | 化学技術英語 | Technical English for Applied Chemistry | | 2 | | |
| | 応用化学熱力学 | Applied Chemical Thermodynamics | | 2 | | |
| | 先端エネルギーデバイス | Advanced Energy Devices | | 2 | | |
| | 環境保全化学 | Environment Conservation Chemistry | | 2 | | |
| | 燃焼工学特論 A | Combustion theory A | | 1 | | |
| | 燃焼工学特論 B | Combustion theory B | | 1 | | |
| | 熱移動工学特論 A | Advanced Heat Transfer Engineering A | | 1 | | |
| | 熱移動工学特論 B | Advanced Heat Transfer Engineering B | | 1 | | |
| | エネルギー変換工学特論 A | Advanced Energy Conversion Engineering A | | 1 | | |
| | エネルギー変換工学特論 B | Advanced Energy Conversion Engineering B | | 1 | | |
| | 分離工学特論 A | Separation and Purification Technology A | | 1 | | |
| | 分離工学特論 B | Separation and Purification Technology B | | 1 | | |
| | プロセス工学特論 A | Advanced Process Engineering A | | 1 | | |
| | プロセス工学特論 B | Advanced Process Engineering B | | 1 | | |
| | 熱エネルギープロセス解析 A | Analysis of Thermal energy process A | | 1 | | |
| | 熱エネルギープロセス解析 B | Analysis of Thermal energy process B | | 1 | | |
| | 環境生物化学工学 A | Environmental and Biochemical Engineering A | | 1 | | |
| | 環境生物化学工学 B | Environmental and Biochemical Engineering B | | 1 | | |
| | エアロゾル科学 A | Aerosol Science and Technology A | | 1 | | |
| | エアロゾル科学 B | Aerosol Science and Technology B | | 1 | | |
| | 次世代電気エネルギー変換概論 A | Introduction to Advanced Electric Power Conversion Engineering A | | 1 | | |
| | 次世代電気エネルギー変換概論 B | Introduction to Advanced Electric Power Conversion Engineering B | | 1 | | |
| | 応用プラズマ工学 A | Applied Plasma Engineering A | | 1 | | |
| | 応用プラズマ工学 B | Applied Plasma Engineering B | | 1 | | |
| | プラズマ流体解析入門 A | Introduction to Numerical Analysis of Plasma Flow A | | 1 | | |
| | プラズマ流体解析入門 B | Introduction to Numerical Analysis of Plasma Flow B | | 1 | | |
| | 光波工学 A | Lightwave Engineering A | | 1 | | |
| | 光波工学 B | Lightwave Engineering B | | 1 | | |
| | 水環境保全工学 A | Water Pollution Control Engineering A | | 1 | | |
| | 水環境保全工学 B | Water Pollution Control Engineering B | | 1 | | |
| | 大気環境保全工学 A | Air Pollution Control Engineering A | | 1 | | |
| | 大気環境保全工学 B | Air Pollution Control Engineering B | | 1 | | |
| | 大気環境科学 | Science in Atmospheric Environment | | 1 | | |
| | 都市システム計画学 | Urban Planning System | | 1 | | |
| | 環境システム計画学 | Environmental Planning System | | 1 | | |
| | 環境リスク論 | Environmental Risk Assessment | | 1 | | |
| | 環境工学演習 | Exercise on Environmental Engineering | | 1 | | |
| | フィールド演習 Field Studies | 環境・エネルギー技術海外研修 | Overseas Training Program on Environmental and Energy Technology | | | 2 |
| | | 環境・エネルギー技術インターンシップ | Environmental and Energy Technology Internship | | | 2 |

※留学生のみ履修可 Only for International Students

コース修了要件：別表10に定める授業科目のうちから合計10単位以上を修得し、コース修了のための審査に合格すること。

Degree Credit Requirements: Required to take a total of more than 10 credits in Attached Table 10 and it is necessary to pass the review to complete the program.

別表第11 国際インタラクティブESDに関する授業科目及び単位数

Table 11. Subjects and Credits of International Interactive Educational Course for Sustainable Development Course (II-ESD Course)

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---|---------------------|---|-------------------|----------------|---|
| | | | 必修 Requirement | 選択 Elective | |
| 導入科目 Introductory Courses | 国際コミュニケーション基礎演習 | Basic International Communication Exercise | 2 | | 日本人学生対象 For Japanese Students |
| | サバイバル日本語演習 | Survival Japanese Exercise | 1 | | 留学生対象 For International Students |
| | 日本文化・地域文化体験 | Experience in Japanese Culture and Society | | 1 | 留学生対象1単位以上必修 International Students must take more than 1 credits. |
| | 企業・大学見学 | Experience in Company and University in Japan | | 1 | |
| 国際インタラクティブ科目II International and Interactive Communication Courses II | 国際コミュニケーション演習 | International Communication Exercise | | 2 | |
| | 国際プレゼンテーション演習 | International Presentation Exercise | 2 | | |
| | 国際プロジェクト演習 | International Project Exercise | | 2 | |
| キャリア形成科目 Career Development Courses | 技術経営論A | Management of Technology A | | 1 | |
| | 技術経営論B | Management of Technology B | | 1 | |
| | 技術マネジメント基礎論A | Fundamentals of Management of Technology A | | 1 | |
| | 技術マネジメント基礎論B | Fundamentals of Management of Technology B | | 1 | |
| | イノベーション方法論A | Innovation Methodology A | | 1 | |
| | イノベーション方法論B | Innovation Methodology B | | 1 | |

別表12 超スマート社会に寄与する電子情報科学分野の高度IT研究開発人材養成コースに関する授業科目及び単位数

Table 12. Subjects and Credits of High-level IT Research Human Resources Development Course on Electrical Engineering and Computer Science Techniques Contributing to Society 5.0

| 科目区分 Subjects Category | 授業科目の名称 Subjects | 英文科目名 Subjects in English Title | 単位数 Credits | | 履修要件 Registration Requirements |
|---------------------------|---------------------|------------------------------------|-------------------|----------------|-----------------------------------|
| | | | 必修 Requirement | 選択 Elective | |
| 総合科目 General Courses | 国際プレゼンテーション | International Presentation | 1 | | |

別表第13 免許状の種類

Table13 Teacher's License Type
(omitted)