

平成28年度以降 修士課程入学者向け For students who entered master's course in FY2016 and later
 分子生命環境コース／環境分野 Molecular/Bio-Environment Course in Environment Field

大学院課程 Graduate Major	科目コード No.	授業科目 Course Title
	CAPP421.L	高分子物性特論第一 (Advanced Polymer Properties I)
	CAPP424.L	高分子構造特論第二 (Advanced Polymer Structures II)
	CAPT402.L	高分子物理概論第一 (Introduction to Polymer Physics II)
	CAPT404.L	高分子物理概論第二 (Introduction to Polymer Physics II)
	CAPA441.L	電気化学特論第一 (Advanced Electrochemistry I)
	CAPA442.L	電気化学特論第二 (Advanced Electrochemistry II)
	CAPE401.L	化学環境安全教育第一 (Environment Preservation and Chemical Safety I)
	CAPE402.L	化学環境安全教育第二 (Environment Preservation and Chemical Safety II)
	CAPP423.L	高分子構造特論第一 (Advanced Polymer Structures I)
	CAPP422.L	高分子物性特論第二 (Advanced Polymer Properties II)
	CAPP411.L	高分子合成特論第一 (Advanced Polymer Synthesis I)
	CAPP412.L	高分子合成特論第二 (Advanced Polymer Synthesis II)
	CAPP511.L	高分子反応特論 (Advanced Polymer Reactions)
	CAPA521.L	有機分子設計特論第一 (Advanced Molecular Design for Organic Synthesis I)
	CAPA522.L	有機分子設計特論第二 (Advanced Molecular Design for Organic Synthesis II)
	CAPA423.L	有機合成化学特論第一 (Advanced Organic Synthesis I)
	CAPA424.L	有機合成化学特論第二 (Advanced Organic Synthesis II)
	CAPA421.L	有機反応化学特論第一 (Advanced Design of Organic Reaction Processes I)
	CAPA422.L	有機反応化学特論第二 (Advanced Design of Organic Reaction Processes II)
	CAPA561.L	有機遷移金属錯体化学第一 (Advanced Chemistry of Transition Metal Complexes I)
	CAPA562.L	有機遷移金属錯体化学第二 (Advanced Chemistry of Transition Metal Complexes II)
	CAPA461.L	無機固体化学特論第一 (Advanced Solid State Chemistry I)
	CAPA462.L	無機固体化学特論第二 (Advanced Solid State Chemistry II)
	CAPT531.L	触媒反応特論第一 (Advanced Catalytic Reactions I)
	CAPT532.L	触媒反応特論第二 (Advanced Catalytic Reactions II)
	CAPA465.L	生物無機化学特論第一 (Advanced Bioinorganic Chemistry I)
	CAPA466.L	生物無機化学特論第二 (Advanced Bioinorganic Chemistry II)
応用化学コース Chemical Science and Engineering	CAPT431.L	有機金属触媒化学特論第一 (Advanced Organometallic Chemistry and Catalysis I)
	CAPT432.L	有機金属触媒化学特論第二 (Advanced Organometallic Chemistry and Catalysis II)
	CAPC441.L	Transport Phenomena and Operation (移動現象操作)
	CAPC422.L	反応工学特論 (Advanced Chemical Reaction Engineering)
	CAPC432.L	化工物性解析 (Physico-Chemical Property Analysis in Chemical Engineering)
	CAPC421.L	エネルギー操作特論 (Advanced Energy Transfer Operation)
	CAPC442.L	Advanced Separation Operation (分離操作特論)
	CAPC531.L	Advanced Chemical Equipment Design (化学装置設計特論)
	CAPC412.L	プロセスシステム工学 (Process Systems Engineering)
	CAPC411.L	Chemical Engineering for Advanced Materials and Chemicals Processing I (化学工学要論第一)
	CAPC431.L	Chemical Engineering for Advanced Materials and Chemicals Processing II (化学工学要論第二)
	CAPC511.L	Life Cycle Engineering (ライフサイクル工学)
	CAPT401.L	高分子化学概論第一 (Introduction to Polymer Chemistry I)
	CAPT403.L	高分子化学概論第二 (Introduction to Polymer Chemistry II)
	CAP.I415.L	環境分析化学 (Environmental Analytical Chemistry)
	CAP.I535.L	物質循環解析論 (Material Cycle Analysis)
	CAP.I471.L	Coordination Chemistry (配位化学)
	CAP.I434.L	Advanced Nano-Materials Chemistry I (ナノ機能化学特論第一)
	CAP.I444.L	Advanced Nano-Materials Chemistry II (ナノ機能化学特論第二)
	CAP.I473.L	Nanotechnology and Nanoscience (ナノテクノロジーとナノサイエンス)
	CAP.I472.L	Advanced Course of Catalytic Chemistry (触媒化学特論)
	CAP.I403.L	錯体化学特論 (Advanced Coordination Chemistry)
	CAP.I413.L	分子集合体化学特論 (Advanced Supramolecular Chemistry)
	CAPE421.L	データ解析特論 (Advanced Data Analysis)
	CAPE422.L	プレゼンテーション演習 (Presentation Practice)
	CAPE521.L	科学者倫理 (Scientific Ethics)
	CAP.I405.L	環境化学 (Environmental Chemistry)
	CAP.I407.L	化学工学概論(基礎) (Introduction to Chemical Engineering (Basics))

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大学院課程 Graduate Major	科目コード No.	授業科目 Course Title
応用化学コース Chemical Science and Engineering	CAP.I417.L	化学工学概論(単位操作) (Introduction to Chemical Engineering (Unit Operation))
	CAP.I533.L	有機合成戦略特論 (Advanced Strategic Organic Synthesis)
	CAP.I423.L	有機材料化学特論 (Advanced Organic Materials Chemistry)
	CAP.I539.L	先進高分子材料特論第一 (Advanced Course in Macromolecular Materials I)
	CAP.I549.L	先進高分子材料特論第二 (Advanced Course in Macromolecular Materials II)
	CAP.I435.L	地球化学 (Geochemistry)
	CAP.I537.L	材料システム設計論 (Systematic Material Design Methodology)
	CAP.I547.L	Advanced Process Dynamics and Control (プロセス制御特論)
	CAP.C541.L	Advanced Nanoscale Chemical Process (ナノプロセス特論)
	CAPP582.L	Advanced Polymer Science I (高分子特論第一)
	CAP.C532.L	Advanced Specific Environmental Process (特殊場プロセス特論)
	CAP.C423.L	Computational Fluid Dynamics (数値流体力学)
	CAP.I474.L	Fundamental Electrochemistry (電気化学)
	ENR.H416	
	CAP.I476.L	Inorganic Materials Science (無機材料科学)
	ENR.H418	
	CAP.I477.L	Organic Electrode Process (有機電気化学)
	ENR.H419	
	CAP.I475.L	Organic Molecular and Macromolecular Chemistry (有機機能分子と高分子の設計)
	ENR.H417	
	CAPP475.L	Soft Materials Chemistry I (ソフトマテリアル化学-I)
	MAT.P411	
	CAPP476.L	Soft Materials Chemistry II (ソフトマテリアル化学-II)
	MAT.P412	
	CAPP474.L	Soft Materials Functional Physics (ソフトマテリアル機能物理)
	MAT.P404	
	CAPP473.L	Soft Materials Physics (ソフトマテリアル物理)
	MAT.P403	
	CAPA471.L	エネルギー・環境問題を指向する固体化学特論第一 (Advanced Solid State Chemistry Oriented for Energy and Environment Issues I)
	ENR.H407	
	CAPA472.L	エネルギー・環境問題を指向する固体化学特論第二 (Advanced Solid State Chemistry Oriented for Energy and Environment Issues II)
	ENR.H408	
	CAPA571.L	エネルギー化学材料特論第一 (Advanced Chemical Materials for Energy Issues I)
	ENR.H501	
	CAPA572.L	エネルギー化学材料特論第二 (Advanced Chemical Materials for Energy Issues II)
	ENR.H502	
	CAP.I433.L	エネルギー高分子機能特論第一 (Advanced Functional Polymer Materials I)
	ENR.H413	
	CAP.I443.L	エネルギー高分子機能特論第二 (Advanced Functional Polymer Materials II)
	ENR.H414	
	CAPP541.L	エネルギー高分子設計特論 (Advanced Polymer Design for Energy Materials)
	ENR.H503	
	CAP.I414.L	エネルギー無機材料化学特論第一 (Advanced Inorganic Materials Chemistry I)
	ENR.H405	
	CAP.I424.L	エネルギー無機材料化学特論第二 (Advanced Inorganic Materials Chemistry II)
	ENR.H406	
	CAPP478.L	ソフトマテリアル機能 (Soft Materials Function)
MAT.P414		
CAPP492.L	ソフトマテリアル設計 (Soft Materials Design)	
ENR.J407		
CAPP472.L	ソフトマテリアル物理化学 (Soft Materials Physical Chemistry)	
MAT.P402		
CAP.I481.L	環境化学最前線入門第一 (Introduction to the Frontiers of Environmental Chemistry I)	
CAP.I482.L	環境化学最前線入門第二 (Introduction to the Frontiers of Environmental Chemistry II)	
CAP.I416.L	環境調和触媒 (Catalysis for the Environmental Issues)	
CAP.I411.L	光化学特論第一 (Advanced Photochemistry I)	
ENR.H401		

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大学院課程 Graduate Major	科目コード No.	授業科目 Course Title	
応用化学コース Chemical Science and Engineering	CAP.I421.L ENR.H402	光化学特論第二 (Advanced Photochemistry II)	
	CAPP581.L	高分子加工特論 (Advanced Polymer Processing)	
	CAPP583.L	高分子特論第二 (Advanced Polymer Science II)	
	CAPP521.L	高分子物理学特論 (Advanced Polymer Physics)	
	CAPP485.L MAT.P426	材料熱物性特論 (Thermal Properties of Materials)	
	CAP.I412.L ENR.H403	先進電気化学特論第一 (Advanced Electrochemistry I)	
	CAP.I422.L ENR.H404	先進電気化学特論第二 (Advanced Electrochemistry II)	
	CAP.I432.L ENR.H411	電気化学デバイス特論 (Topics in Applied Electrochemistry)	
	CAP.I418.L ENR.H410	半導体物性特論(エネルギー) (Topics in Properties of Semiconductors)	
	CAP.I431.L ENR.H409	有機エレクトロニクス特論 (Topics in Organic Electronics)	
	CAPP471.L MAT.P401	有機光学材料物理 (Organic Optical Materials physics)	
	CAPP479.L MAT.P415	有機材料化学 (Chemistry of Organic Materials)	
	CAPP483.L MAT.P424	有機材料加工 A (Advanced Course in Polymer Processing A)	
	CAPP484.L MAT.P425	有機材料加工 B (Advanced Course in Polymer Processing B)	
	CAPP481.L MAT.P422	有機材料科学設計 (Organic Materials Design)	
	CAPP477.L MAT.P413	有機材料機能化学 (Soft Materials Functional Chemistry)	
	CAPP480.L MAT.P421	有機材料機能設計 (Organic Materials Functional Design)	
	CAP.I425.L ENR.H412	有機電気化学特論 (Advanced Organic Electrochemistry)	
	CAPP491.L ENR.J406	有機電子材料物理 (Organic Electronic Materials Physics)	
	CAPP482.L MAT.P423	有機複合材料 (Advanced Course in Composite Materials)	
	化学コース Chemistry	CHM.B531.B	分離科学特論 (Advanced Separation Science)
		CHM.B532.B	地球環境化学特論 (Global Environmental Chemistry)
		CHM.D531.B	合成有機化学特論 (Advanced Organic Synthesis)
		CHM.D532.B	有機金属化学特論 (Advanced Organometallic Chemistry)
		CHM.C532.B	量子化学特論 (Advanced Quantum Chemistry)
		CHM.C531.B	分子化学特論 (Advanced Physical Chemistry)
		CHM.C401.A	物理化学基礎特論 (Basic Concepts of Physical Chemistry)
		CHM.D401.A	有機化学基礎特論 (Basic Concepts of Organic Chemistry)
		CHM.B401.A	無機・分析化学基礎特論 (Basic Concepts of Inorganic Chemistry)
		CHM.B534.B	結晶構造特論 (Advanced Course in Crystal Structure Science)
CHM.D533.B		生物有機化学特論 (Advanced Bioorganic Chemistry)	
CHM.B533.B		固体触媒化学特論 (Catalytic Chemistry on Solid Surface)	
エネルギーコース Energy Science and Engineering	ENR.I510.L	固体光物性特論 (Optical properties of solids)	
	ENR.I520.L	固体構造物性特論 (Advanced Lecture on Crystal Structure and Correlation with Properties of Solids)	
	ENR.H405.L	エネルギー無機材料化学特論第一 (Advanced Inorganic Materials Chemistry I)	
	ENR.H406.L	エネルギー無機材料化学特論第二 (Advanced Inorganic Materials Chemistry II)	
	ENR.H503.L	エネルギー高分子設計特論 (Advanced Polymer Design for Energy Materials)	
ENR.H407.L	エネルギー・環境問題を指向する固体化学特論第一 (Advanced Solid State Chemistry Oriented for Energy and Environment Issues I)		

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エネルギーコース Energy Science and Engineering	ENR.H408.L	エネルギー・環境問題を指向する固体化学特論第二 (Advanced Solid State Chemistry Oriented for Energy and Environment Issues II)
	ENR.H403.L	先進電気化学特論第一 (Advanced Electrochemistry I)
	ENR.H404.L	先進電気化学特論第二 (Advanced Electrochemistry II)
	ENR.H412.L	有機電気化学特論 (Advanced Organic Electrochemistry)
	ENR.H409.L	有機エレクトロニクス特論 (Topics in Organic Electronics)
	ENR.H413.L	エネルギー高分子機能特論第一 (Advanced Functional Polymer Materials I)
	ENR.H414.L	エネルギー高分子機能特論第二 (Advanced Functional Polymer Materials II)
	ENR.H416.L	Fundamental Electrochemistry (電気化学)
	ENR.H417.L	Organic Molecular and Macromolecular Chemistry (有機機能分子と高分子の設計)
	ENR.H418.L	Inorganic Materials Science (無機材料科学)
	ENR.H419.L	Organic Electrode Process (有機電気化学)
	ENR.A407.A	エネルギーシステム論 (Energy system theory)
	ENR.A408.A	エネルギーシステム経済論 (Economy of energy system)
	ENR.B430.L	科学技術特論 (Advanced Science and Technology in Energy and Environment)
	ENR.E552.L	Advanced Chemical Equipment Design (化学装置設計特論)
	CAPC531	
	ENR.H484.L	Advanced Course of Catalytic Chemistry (触媒化学特論)
	CAPC472	
	ENR.H481.L	Advanced Nano-Materials Chemistry I (ナノ機能化学特論第一)
	CAPC434	
	ENR.H482.L	Advanced Nano-Materials Chemistry II (ナノ機能化学特論第二)
	CAPC444	
	ENR.E554.L	Advanced Nanoscale Chemical Process (ナノプロセス特論)
	CAPC541	
	ENR.E543.L	Advanced Polymer Science I (高分子特論第一)
	CAPP582	
	ENR.E575.L	Advanced Process Dynamics and Control (プロセス制御特論)
	CAPC547	
	ENR.H457.L	Advanced Separation Operation (分離操作特論)
	CAPC442	
	ENR.E553.L	Advanced Specific Environmental Process (特殊場プロセス特論)
	CAPC532	
	ENR.H458.L	Chemical Engineering for Advanced Materials and Chemicals Processing I (化学工学要論第一)
	CAPC411	
	ENR.H459.L	Chemical Engineering for Advanced Materials and Chemicals Processing II (化学工学要論第二)
	CAPC431	
	ENR.H454.L	Computational Fluid Dynamics (数値流体力学)
	CAPC423	
	ENR.H483.L	Coordination Chemistry (配位化学)
	CAPC471	
	ENR.H555.L	Life Cycle Engineering (ライフサイクル工学)
	CAPC511	
	ENR.H485.L	Nanotechnology and Nanoscience (ナノテクノロジーとナノサイエンス)
	CAPC473	
	ENR.B431.L	Recent technologies of fuel cells, solar cells batteries and energy system (燃料電池・太陽電池・蓄電池・エネルギーシステムの最新技術)
	ENR.B432.L	Technologies for Energy and Resource Utilization (エネルギー・資源の有効利用技術)
	GEG.E404	
ENR.B435.L	The economics and systems analysis of environment, resources and technology (資源環境技術のシステムと経済学概論)	
GEG.S402		
ENR.H456.L	Transport Phenomena and Operation (移動現象操作)	
CAPC441		
ENR.H501.L	エネルギー化学材料特論第一 (Advanced Chemical Materials for Energy Issues I)	
ENR.H502.L	エネルギー化学材料特論第二 (Advanced Chemical Materials for Energy Issues II)	
ENR.B501.L	エネルギー経済・政策特別講義 (Special lecture of economics and politics in energy)	
ENR.H452.L	エネルギー操作特論 (Advanced Energy Transfer Operation)	

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エネルギーコース Energy Science and Engineering	CAPC421	
	ENR.E494.L	データ解析特論 (Advanced Data Analysis)
	CAPE421	
	ENR.E495.L	プレゼンテーション演習 (Presentation Practice)
	CAPE422	
	ENR.H451.L	プロセスシステム工学 (Process Systems Engineering)
	CAPC412	
	ENR.E491.L	化学環境安全教育第一 (Environment Preservation and Chemical Safety I)
	CAPE401	
	ENR.E492.L	化学環境安全教育第二 (Environment Preservation and Chemical Safety II)
	CAPE402	
	ENR.H473.L	化学工学概論(基礎) (Introduction to Chemical Engineering (Basics))
	CAP.I407	
	ENR.H477.L	化学工学概論(単位操作) (Introduction to Chemical Engineering (Unit Operation))
	CAP.I417	
	ENR.H455.L	化工物性解析 (Physico-Chemical Property Analysis in Chemical Engineering)
	CAPC432	
	ENR.H591.L	科学者倫理 (Scientific Ethics)
	CAPE521	
	ENR.H472.L	環境化学 (Environmental Chemistry)
	CAP.I405	
	ENR.H488.L	環境化学最前線入門第一 (Introduction to the Frontiers of Environmental Chemistry I)
	CAP.I481	
	ENR.H489.L	環境化学最前線入門第二 (Introduction to the Frontiers of Environmental Chemistry II)
	CAP.I482	
	ENR.H476.L	環境調和触媒 (Catalysis for the Environmental Issues)
	CAP.I416	
	ENR.H475.L	環境分析化学 (Environmental Analytical Chemistry)
	CAP.I415	
	ENR.I534.L	結晶構造特論 (Advanced Course in Crystal Structure Science)
	CHM.B534	
	ENR.I533.L	固体触媒化学特論 (Catalytic Chemistry on Solid Surface)
	CHM.B533	
	ENR.H401.L	光化学特論第一 (Advanced Photochemistry I)
	ENR.H402.L	光化学特論第二 (Advanced Photochemistry II)
	ENR.H463.L	高分子化学概論第一 (Introduction to Polymer Chemistry I)
	CAP.T401	
	ENR.H465.L	高分子化学概論第二 (Introduction to Polymer Chemistry II)
	CAP.T403	
	ENR.E542.L	高分子加工特論 (Advanced Polymer Processing)
	CAPP581	
	ENR.H445.L	高分子構造特論第一 (Advanced Polymer Structures I)
CAPP423		
ENR.H446.L	高分子構造特論第二 (Advanced Polymer Structures II)	
CAPP424		
ENR.H441.L	高分子合成特論第一 (Advanced Polymer Synthesis I)	
CAPP411		
ENR.H442.L	高分子合成特論第二 (Advanced Polymer Synthesis II)	
CAPP412		
ENR.E544.L	高分子特論第二 (Advanced Polymer Science II)	
CAPP583		
ENR.E541.L	高分子反応特論 (Advanced Polymer Reactions)	
CAPP511		
ENR.H443.L	高分子物性特論第一 (Advanced Polymer Properties I)	
CAPP421		
ENR.H444.L	高分子物性特論第二 (Advanced Polymer Properties II)	
CAPP422		

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エネルギーコース Energy Science and Engineering	ENR.H464.L CAP.T402	高分子物理概論第一 (Introduction to Polymer Physics II)
	ENR.H466.L CAP.T404	高分子物理概論第二 (Introduction to Polymer Physics II)
	ENR.I537.L CHM.D531	合成有機化学特論 (Advanced Organic Synthesis)
	ENR.E573.L CAPI537	材料システム設計論 (Systematic Material Design Methodology)
	ENR.H471.L CAPI403	錯体化学特論 (Advanced Coordination Chemistry)
	ENR.E561.L CAP.T531	触媒反応特論第一 (Advanced Catalytic Reactions I)
	ENR.E562.L CAP.T532	触媒反応特論第二 (Advanced Catalytic Reactions II)
	ENR.H435.L CAP.A465	生物無機化学特論第一 (Advanced Bioinorganic Chemistry I)
	ENR.H436.L CAP.A466	生物無機化学特論第二 (Advanced Bioinorganic Chemistry II)
	ENR.I539.L CHM.D533	生物有機化学特論 (Advanced Bioorganic Chemistry)
	ENR.E574.L CAPI539	先進高分子材料特論第一 (Advanced Course in Macromolecular Materials I)
	ENR.E576.L CAPI549	先進高分子材料特論第二 (Advanced Course in Macromolecular Materials II)
	ENR.H479.L CAPI435	地球化学 (Geochemistry)
	ENR.I532.L CHM.B532	地球環境化学特論 (Global Environmental Chemistry)
	ENR.H411.L	電気化学デバイス特論 (Topics in Applied Electrochemistry)
	ENR.H421.L CAP.A441	電気化学特論第一 (Advanced Electrochemistry I)
	ENR.H422.L CAP.A442	電気化学特論第二 (Advanced Electrochemistry II)
	ENR.H410.L	半導体物性特論(エネルギー) (Topics in Properties of Semiconductors)
	ENR.H453.L CAP.C422	反応工学特論 (Advanced Chemical Reaction Engineering)
	ENR.E572.L CAPI535	物質循環解析論 (Material Cycle Analysis)
	ENR.I402.L CHM.C401	物理化学基礎特論 (Basic Concepts of Physical Chemistry)
	ENR.I535.L CHM.C531	分子化学特論 (Advanced Physical Chemistry)
	ENR.H474.L CAPI413	分子集合体化学特論 (Advanced Supramolecular Chemistry)
	ENR.I531.L CHM.B531	分離科学特論 (Advanced Separation Science)
	ENR.I401.L CHM.B401	無機・分析化学基礎特論 (Basic Concepts of Inorganic Chemistry)
	ENR.H431.L CAP.A461	無機固体化学特論第一 (Advanced Solid State Chemistry I)
	ENR.H432.L CAP.A462	無機固体化学特論第二 (Advanced Solid State Chemistry II)
	ENR.I403.L CHM.D401	有機化学基礎特論 (Basic Concepts of Organic Chemistry)
	ENR.I538.L CHM.D532	有機金属化学特論 (Advanced Organometallic Chemistry)

平成28年度以降 修士課程入学者向け For students who entered master's course in FY2016 and later
 分子生命環境コース／環境分野 Molecular/Bio-Environment Course in Environment Field

大学院課程 Graduate Major	科目コード No.	授業科目 Course Title
エネルギーコース Energy Science and Engineering	ENR.H461.L CAP.T431	有機金属触媒化学特論第一 (Advanced Organometallic Chemistry and Catalysis I)
	ENR.H462.L CAP.T432	有機金属触媒化学特論第二 (Advanced Organometallic Chemistry and Catalysis II)
	ENR.H428.L CAP.A423	有機合成化学特論第一 (Advanced Organic Synthesis I)
	ENR.H429.L CAP.A424	有機合成化学特論第二 (Advanced Organic Synthesis II)
	ENR.E571.L CAP.I533	有機合成戦略特論 (Advanced Strategic Organic Synthesis)
	ENR.H478.L CAP.I423	有機材料化学特論 (Advanced Organic Materials Chemistry)
	ENR.E521.L CAP.A561	有機遷移金属錯体化学第一 (Advanced Chemistry of Transition Metal Complexes I)
	ENR.E522.L CAP.A562	有機遷移金属錯体化学第二 (Advanced Chemistry of Transition Metal Complexes II)
	ENR.H426.L CAP.A421	有機反応化学特論第一 (Advanced Design of Organic Reaction Processes I)
	ENR.H427.L CAP.A422	有機反応化学特論第二 (Advanced Design of Organic Reaction Processes I)
	ENR.H523.L CAP.A521	有機分子設計特論第一 (Advanced Molecular Design for Organic Synthesis I)
	ENR.H524.L CAP.A522	有機分子設計特論第二 (Advanced Molecular Design for Organic Synthesis II)
	ENR.I536.L CHM.C532	量子化学特論 (Advanced Quantum Chemistry)