Curriculum

(Compulsory Elective Subjects) credits Advanced Lecture of Physical Chemistry 1 Summer Advanced Inorganic Chemistry 1 Summer Introductory Bio-organic Chemistry 1 Summer Summer Common Subjects for CSE: 5 or more credits Common Subjects for CSE: 5 or more credits Complete a thesis and pass the thesis deference	Subjects	Credit	Term	Remarks
Compulsory Students Subjects Coerdina	Master's Degree Program			Requirements for completion:
Laboratory Exercise in Chemical Sciences and Engineering 1 10 All Year	(Compulsory Subject)			
Advanced Lecture of Physical Chemistry Advanced Incegnic Chemistry Advanced Incegnic Chemistry Introductory Bio-organic Chemistry Introductory Bio-organic Chemistry Introductory Bio-organic Chemistry Introductory Bio-organic Chemistry 2 termselvance Incegnic Chemistry 2 termselvance Incegnic Chemistry 2 termselvance Complete abselvance Complete Co	Laboratory Exercise in Chemical Sciences and Engineering I	10	All Year	Compulsory Subject : 10 credits Compulsory Elective Subjects : 8 or more
Advanced Lecture of Physical Chemistry Introductory Bio-organic Chemistry Chemistry Alexander Disposering III Intensive Introductory Bio-organic Chemistry Introductory Introductory Bio-organic Chemistry Chemistry Alexander Chemistry Chemistry Chemistry Chemistry Chemistry Chemistry Chemistry Chemistry Chemistry Bio-organic Chemistry Introductor Chemistry	(Compulsory Elective Subjects)			
Introductory Blor-organic Chemistry Intermediate Biological Chemistry Indeediate Transformation Intermediate Biological Chemistry Intermediate Chemistry A (Organometal Biological Chemistry) Intermediate Chemistry A (Decoration Process Engineering Intermediate Chemistry A (Decoration Biological Chemistry) Intermediate Chemistry A (Deco	Advanced Lecture of Physical Chemistry	1	Summer	• Elective Subjects: 3 or more credits • Elective Subjects of Other Courses: 2 or more
Introductory Bro-organic Chemistry Practical Computational Chemistry Practical Chemistry of Reaction Mechanism and Molecular Structure Practical Chemistry of Reaction Mechanism and Molecular Structure Practical Chemistry of Reaction Mechanism and Molecular Structure Practical Chemistry of Reaction Regimenting Practical Chemistry Practical Practical Chemistry Practical Pract	Advanced Inorganic Chemistry	1	Summer	
Practical Computational Chemistry Structural Organic Chemistry Molecular Transformation 1 Pall Molecular Transformation 1 Intensive Organic Chemistry Chemical Engineering Thermodynamics Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Engineering Thermodynamics Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Reaction Engineering Advanced Organic Synthesis 1 Pall Inorganic Materials Chemistry Materials for Energy Conversion and Storage Advanced Apriled Biochemistry Materials Chemistry Materials Chemistry 1 Intensive Materials Chemistry Materials Chemistry 1 Intensive Materials Chemistry Materials Chemistry 1 Intensive Materials Chemistry 1 Intensive Materials Chemistry 1 Intensive Materials Chemistry Materials Engineering 1 Intensive Materials Chemistry Materials Sciences and Engineering 1 Intensive Materials Chemistry Cadvanced Physical Chemistry Molecular Chemistry Materials Chemistry Molecular Chemistry (Advanced Physical Organic Chemistry) Molecular Chemistry (Advanced Physical Organic Chemistry) Molecular Chemistry (Material Applied Molecular Chemistry (Material Chemistry) Molecular Chemistry (Material Chemistry) Molecular Chemistry (Material Energy Conversion) Molecular Chemistry (Advanced Chemical Reaction Design and Discovery) Molecular Chemistry (Advanced Chemistry) Molecular Chemistry A (Organical Reaction Process Engineering II) Applied Molecular Chemistry (Separation Process Engineering	Introductory Bio-organic Chemistry	1	Summer	 Common Subjects for CSE: 5 or more credits Complete a thesis and pass the thesis defense
Fractical Computational Chemistry All Fall Molecular Transformation Supramolecular Chemistry Chemical Engineering Thermodynamics Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Reaction Engineering Chemical Reaction Engineering Advanced Organic Synthesis Inorganic Synthesis Inorganic Materials Chemistry Advanced Applied Biochemistry Materials for Emergy Conversion and Storage Advanced Applied Biochemistry Intensive Molecular Materials Chemistry Molecular Materials Chemistry Intensive Intensive Advanced Ethics and Safety for Science and Engineering Laboratory Exercise in Chemical Sciences and Engineering III All Year Laboratory Exercise in Chemical Sciences and Engineering III All Year Clective Subject) Molecular Chemistry Advanced Physical Chemistry) Molecular Chemistry Galaytic Transformation Molecular Chemistry (Advanced Physical Chemistry) Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Advanced Chemical Reaction Design and Discovery) Molecular Chemistry A (Protochemistry) Molecular Chemistry A (Protochemistry) Molecular Chemistry A (Process Engineering II) Applied Molecular Chemistry (Separation Process Engineering II) Applied Molecular Chemistry (Separation Process Engineering II) Applied Molecular Chemistry A (Process Engineering III) Applied Molecular Chemistry A (Process Engineering III) App	Intermediate Biological Chemistry	2	Spring/Summer	and examination, after receiving the necessary
Molecular Transformation Supramolecular Chemistry Chemical Engineering Thermodynamics Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Reaction Engineering Advanced Organic Synthesis Inorganic Materials Chemistry Advanced Organic Synthesis Inorganic Materials Chemistry Advanced Applied Biochemistry Materials for Energy Conversion and Storage Advanced Applied Biochemistry Intensive Advanced Applied Biochemistry Intensive Molecular Materials Chemistry Intensive Advanced Ethics and Safety for Science and Engineering Intensive Laboratory Exercise in Chemical Sciences and Engineering III All Year Laboratory Exercise in Chemical Sciences and Engineering III Aboratory Exercise in Chemical Sciences and Engineering III Molecular Chemistry Advanced Physical Organic Chemistry) Molecular Chemistry Gardaptic Transformation Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Advanced Chemistry) Molecular Chemistry A (Procentical Chemistry) Molecular Chemistry A (Organometallic Chemistry) Molecular Chemistry (Separation Process Engineering I) Applied Molecular Chemistry (Separation Process Engineering I) Applied Molecular Chemistry (Separation Process Engineering I) Applied Molecular Chemistry A (Process Engineering I) Applied Molecular Chemistry (Advanced Chemistry) Materials Chemistry (Advanced Chemistry) Materials Chemistry (Advanced Chemical	Practical Computational Chemistry	2	Fall	research guidance
Supramolecular Chemistry Chemical Engineering Thermodynamics Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Reaction Engineering Advanced Organic Synthesis Chemical Reaction Engineering Advanced Organic Synthesis 2 Fall Inorganic Materials Chemistry Materials for Energy Conversion and Storage Advanced Applied Biochemistry Materials for Energy Conversion and Storage Advanced Applied Biochemistry Intensive Molecular Materials Chemistry Intensive Molecular Materials Chemistry Intensive Molecular Chemistry Advanced Ethics and Safety for Science and Engineering Intensive Laboratory Exercise in Chemical Sciences and Engineering III Laboratory Exercise in Chemical Sciences Molecular Chemistry (Advanced Physical Chemistry) Intensity (Macromolecular Science) Intensity (Macromolecular Science) Intensity (Macromolecular Science) Intensity (Macromolecular Chemistry (Macromolecular Science) Intensity (Macromolecular Chemistry (Macromolecular Chemistry) Intensity (Macromolecular Chemistry (Macromotellic Chemistry) Intensity (Macromolecular Chemistry (Macromotellic Chemistry) Intensity (Macromotellic Chemistry) Intensity (Macromotellic Chemistry (Macromotellic Chemistry) Intensive Intensive Intensive Intensive Intens	Structural Organic Chemistry	1	Fall	
Chemical Engineering Thermodynamics Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Reaction Engineering Advanced Organic Synthesis 1	Molecular Transformation	1	Winter	
Organic Chemistry of Reaction Mechanism and Molecular Structure Chemical Reaction Engineering Advanced Organic Synthesis 12 Fall Interpretation Materials Chemistry Materials Chemistry Materials Chemistry Materials Generacy Conversion and Storage 1 Summer Advanced Applied Biochemistry Molecular Materials Chemistry 1 Intensive Intensive Laboratory Exercise in Chemical Sciences and Engineering II 2 All Year Laboratory Exercise in Chemical Sciences and Engineering III 2 All Year (Elective Subject) Molecular Chemistry Adanced Physical Chemistry) Molecular Chemistry (Macromolecular Science) Molecular Chemistry (Structural and Physical Organic Chemistry) Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Catalytic Transformation) Molecular Chemistry (Advanced Chemical Reaction Design and Discovery) Molecular Chemistry (Advanced Chemical Reaction Design and Discovery) Molecular Chemistry A (Theoretical Chemistry) Molecular Chemistry A (Theoretical Energy Conversion) Molecular Chemistry (Organical Chemistry) Molecular Chemistry (Separation Process Engineering I) Molecular Chemistry (Separation Process Engineering I) Applied Molecular Chemistry (Separation Process Engineering I) Applied Molecular Chemistry (Separation Process Engineering I) Applied Molecular Chemistry (Agrano-Photonics Materials) Materials Chemistry (Mano-Photonics Materials) Materials Chemistry (Mano-Photonics Materials) Materials Chemistry (Mano-Photonics Materials) Materials Chemistry (Almorganic Solid State Chemistry) Materials Chem	Supramolecular Chemistry	1	Fall	
Chemical Reaction Engineering Advanced Organic Synthesis Inorganic Materials Chemistry Materials for Energy Conversion and Storage Advanced Applied Biochemistry Molecular Materials Chemistry Molecular Materials Chemistry Intensive Intensive Advanced Applied Biochemistry Intensive Molecular Materials Chemistry Intensive Intensive Intensive Advanced Ethics and Safety for Science and Engineering I Intensive Laboratory Exercise in Chemical Sciences and Engineering II Laboratory Exercise in Chemical Sciences and Engineering III Molecular Chemistry (Advanced Chemistry) Intensity Intensi	Chemical Engineering Thermodynamics	1	Intensive	
Advanced Organic Synthesis Inorganic Materials Chemistry Materials for Energy Conversion and Storage Advanced Applied Biochemistry Intensive Molecular Materials Chemistry Molecular Materials Chemistry Intensive Molecular Materials Chemistry Intensive Molecular Chemistry Advanced Ethics and Safety for Science and Engineering Intensive Laboratory Exercise in Chemical Sciences and Engineering II Laboratory Exercise in Chemical Sciences and Engineering III Laboratory Exercise in Chemical Polysical Chemistry) Molecular Chemistry (Advanced Physical Chemistry) Intensity (Edular Chemistry (Catalytic Transformation) Intensity (Intensity Catalytic Transformation) Intensity (Intensity (Photochemistry) Intensity (Intensity (Photochemistry) Intensity (Intensity (Intens	Organic Chemistry of Reaction Mechanism and Molecular Structure	2	Spring/Summer	
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Materials for Energy Conversion and Storage Advanced Applied Biochemistry Molecular Materials Chemistry Molecular Materials Chemistry Instrumentation Chemistry Advanced Ethics and Safety for Science and Engineering Laboratory Exercise in Chemical Sciences and Engineering II Laboratory Exercise in Chemical Sciences and Engineering III Laboratory Exercise in Chemistry Advanced Physical Chemistry) Molecular Chemistry Advanced Physical Chemistry) Instrument Molecular Chemistry (Structural and Physical Organic Chemistry) Instrument Molecular Chemistry (Advanced Physical Organic Chemistry) Instrument Molecular Chemistry (Advanced Chemical Reaction Design and Discovery) Instrument Molecular Chemistry (Advanced Chemical Reaction Design and Discovery) Instrument Molecular Chemistry A (Theoretical Chemistry) Instrument Molecular Chemistry A (Theoretical Chemistry) Instrument Molecular Chemistry A (Organometallic Chemistry) Instrument Molecular Chemistry (Chemical Energy Conversion) Intensive Applied Molecular Chemistry (Separation Process Engineering I) Intensive Applied Molecular Chemistry (Separation Process Engineering II) Intensive Materials Chemistry (Alexanced Chemistry) Intensive Spring-Summer Applied Molecular Chemistry A (Catalyst Design) Intensive Materials Chemistry (Natoro-Photonics Materials) Intensive Organic Solid State Chemistry) Intensive Spring-Summer Intensive Applied Molecular Chemistry (Alexanced Chemistals) Intensive Spring-Summer Intensive Applied Chemistry (Alexanced Chemistals) Intensive Spring-Summer Intensive Applied Molecular Chemistry (Alexanced Chemistry) Intensive Spring-Summer Intensive Spring-Summer Intensive Spring-Summer Inten	Advanced Organic Synthesis	2	Fall	
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Applied Molecular Chemistry A (Process Engineering) Applied Molecular Chemistry A (Catalyst Design) 2 Fall/Winter Materials Chemistry and Engineering Course Materials Chemistry (Organic Solid State Chemistry) 1 Spring Materials Chemistry (Nano-Photonics Materials) 1 Summer Materials Chemistry (Introduction to Material Science) Materials Chemistry (Advanced Chemical Reaction Rate Theory) Materials Chemistry A (Inorganic Solid State Chemistry) Materials Chemistry A (Mesoscopic Material Chemistry) Materials Chemistry A (Mesoscopic Material Chemistry) Materials Chemistry A (Mesoscopic Material Chemistry) 2 Spring/Summer	Applied Molecular Chemistry (Separation Process Engineering I)	1	Intensive	
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Materials Chemistry A (Inorganic Solid State Chemistry) Materials Chemistry A (Mesoscopic Material Chemistry) 2 Fall/Winter 2 Spring/Summer				
Materials Chemistry A (Mesoscopic Material Chemistry) 2 Spring/Summer				
Applied Materials Chemistry (Physical Chemistry of Organic Materials) 1 Fall	Materials Chemistry A (Mesoscopic Material Chemistry)	2	Spring/Summer	
			Fall	
Applied Materials Chemistry (Interfacial Electrochemistry) 1 Summer				
Applied Materials Chemistry (Inorganic Solid State Chemistry) 1 Fall		1	Fall	
Applied Materials Chemistry (Physical Chemistry of Electronic Materials) 1 Winter				
Applied Materials Chemistry (Functional Solid State Materials Chemistry) 1 Intensive				
Applied Materials Chemistry (Physical Chemistry and Functional Materials) 1 Fall				
Applied Materials Chemistry (Advanced Materials Chemistry) Applied Materials Chemistry (Applied Inorganic Materials Chemistry I) 1 Summer Fall				
Applied Materials Chemistry (Applied Inorganic Materials Chemistry I) Applied Materials Chemistry (Applied Inorganic Materials Chemistry II) 1 Fall Fall				

Subjects	Credit	Term	Remarks
Biological Chemistry and Engineering Course			
Biochemistry A (I)	2	Fall/Winter	
Biochemistry A (II)	2	Fall/Winter	
Biochemistry A (III)	2	Spring/Summer	
Biochemistry A (IV)	2	Fall/Winter	
Applied Biochemistry (Biosynthetic and Metabolic Engineering)	1	Fall	
Applied Biochemistry (Biosystem Engineering)	1	Fall	
Applied Biochemistry (Analytical Biochemistry)	1	Fall	
Applied Biochemistry (Cell Processing Engineering)	1	Winter	
Applied Biochemistry A (Microsystem Chemistry)	2	Fall	
Applied Biochemistry A (Advanced Functional Polymer)	2	Spring/Summer	
Common Subjects for CSE			WE lleving Caking and the control of the
Topical Lectures in Chemical Sciences and Engineering	1	Spring~Winter	*Following Subjects may be approved for credit as common credit for CSE.
Internship	1	Fall	Inter-Graduate School Classes subjects for other graduate schools
Advanced Chemistry	[1]	Intensive	
Advanced-Applied Chemistry	[1]	Intensive	
Industrial Practice in Chemical Processes	1	Intensive	
Micro-Nanochemistry	1	Fall	
Modern Trends in Biomolecular Chemistry	1	Summer	
Modern Trends in Physical and Material Chemistry	1	Intensive	
Modern Trends in Organic Chemistry and Biological Chemistry	1	Intensive	
Introductory Physical Chemistry	1	Spring	
Frontiers of Inorganic Chemistry	1	Spring	
Special Lecture on Organic Chemistry	1	Summer	
Introduction to Biological Chemistry	1	Intensive	
Molecular Physical Chemistry	1	Spring	
Structure Analysis of Inorganic Materials	1	Spring	
Corrosion Engineering	1	Intensive	
Bioresources Chemistry	1	Spring	
Introduction to Chemical Reaction Design and Discovery	1	Summer	
Ph.D Program			Requirements for completion:
(Compulsory Subject)			OEarn a minimum of 10 credits
Research in Chemical Sciences and Engineering I	4	All Year	 Compulsory Subject : 4 credits Elective Subjects: 6 or more credits
(Elective Subject)			OComplete a dissertation and pass the
Research in Chemical Sciences and Engineering III	2	All Year	dissertation defense and examination, after receiving the necessary research guidance
Modern Trends in Chemical Sciences and Engineering I	[1]	Intensive	g
Modern Trends in Chemical Sciences and Engineering II	[1]	Intensive	
Research in Chemical Sciences and Engineering II	1	Spring~Winter	
Internship	[1]	Irregular	

Remarks

- $1. \ Credit \ with \ [\] \quad means \ several \ lectures \ will \ be \ provided.$
- $2. \ \mbox{The periods for individual terms are generally as follows:}$

Spring: Early April – Early June
Summer: Early June – Early August
Fall: Early October – Early December
Winter: Early December – Early February