



Intensive Major in Chemistry (144 credits) (also named "RSC Accredited Chemistry Programme")

Offered to students admitted to Year 1 in 2025-2026



ACCREDITED
DEGREE



1. Introductory level courses (54 credits)

Disciplinary Core Courses:

Science Foundation Courses (12 credits)

Disciplinary Core Courses (36 credits)

SCNC1111	Scientific method and reasoning
SCNC1112	Fundamentals of modern science
CHEM1042	General chemistry I
CHEM1043	General chemistry II
CHEM2241	Analytical chemistry I
CHEM2341	Inorganic chemistry I
CHEM2441	Organic chemistry I
CHEM2541	Introductory physical chemistry

Disciplinary Electives (6 credits)

(Students are encouraged to meet with a Chemistry Course Selection Advisor in the course selection period to discuss which of the following courses they should take based on their previous background in Mathematics.)

CHEM1044	Mathematics in chemistry
COMP1117	Computer programming
MATH1011	University mathematics I
MATH1013	University mathematics II
STAT1600	Statistics: ideas and concepts

2. Advanced level courses (78 credits)

Disciplinary Core Course (66 credits)

CHEM3143	Introduction to materials chemistry
CHEM3241	Analytical chemistry II: chemical instrumentation
CHEM3341	Inorganic chemistry II
CHEM3441	Organic chemistry II
CHEM3443	Organic chemistry laboratory
CHEM3445	Integrated laboratory
CHEM3541	Physical chemistry: Introduction to quantum chemistry
CHEM3542	Physical chemistry: statistical thermodynamics and kinetics theory
CHEM4142	Symmetry, group theory and applications
CHEM4144	Advanced materials
CHEM4241	Modern chemical instrumentation and applications

Disciplinary Electives (12 credits)

At least 12 credits selected from the following courses:

(Note that one of the two elective courses selected must contain a laboratory component. Courses marked with (lab) have a laboratory component. The list of electives given below may be subject to change.)

CHEM4145	Medicinal chemistry	
CHEM4147	Supramolecular chemistry	
CHEM4148	Frontiers in Modern Chemical Science	
CHEM4242	Advanced analytical chemistry	(lab)
CHEM4341	Advanced inorganic chemistry	
CHEM4342	Organometallic chemistry	(lab)
CHEM4441	Advanced organic chemistry	
CHEM4443	Integrated organic synthesis	(lab)
CHEM4444	Chemical biology	
CHEM4542	Computational chemistry	(lab)
CHEM4543	Advanced physical chemistry	

3. Capstone requirement (12 credits)

CHEM3999	Directed studies in chemistry (6)
CHEM4966	Chemistry internship (6)
CHEM4999	Chemistry project (12)

Chemistry Prizes / Scholarships to Outstanding Students in Chemistry

We offer a number of scholarships/prizes to outstanding students in chemistry. The awardees are selected and nominated by members of the teaching faculty based on students' grades and academic merit.

- Cheung King Pak Memorial Scholarship
- Dick Arthur Memorial Prize in Chemistry
- Dorothy Collins Memorial Scholarship
- Douglas Payne Prizes in Chemistry
- G.T. Byrne Memorial Prize in Chemistry
- Mak Kai Hung Memorial Scholarship
- Norman Chui Scholarship
- Rayson Huang Scholarship
- Vacoas II Trust Scholarship

Recent Awards and Recognitions of our Chemistry Teachers and Students



2021 Silver Bauhinia Star

Professor Chi-Ming CHE has been awarded the Silver Bauhinia Star (SBS) in recognition of his remarkable achievements and contributions to a wide range of research areas in the chemistry discipline.



2023 RSC's Dalton Horizon Prize 2023 HKU Innovator Award

Professor Hongzhe SUN and his team have been elected by the Royal Society of Chemistry (RSC)'s Dalton Prize Committee to award the 2023 Horizon Prize, for their pioneering research on the medicinal chemistry of bismuth applied to the treatment of COVID-19, and identification of target sites in SARS-CoV-2 enzymes using metalomics methods.



2024 National Natural Science Foundation of China Excellent Young Scientist Award

2023 Chinese Chemical Society Young Chemist Award (中國化學會青年化學獎)

Professor Zhongxing HUANG has been awarded China's Excellent Young Scientists Fund (Hong Kong and Macau) for 2023, a prestigious fund under the National Natural Science Foundation of China of the Ministry of Science and Technology. The title of his award-winning project is Asymmetric Catalysis.



2024 National Natural Science Foundation (NSCF) Distinguished Young Scholars

2024 Tetrahedron Young Investigator Award (Bioorganic and Medicinal Chemistry)

Professor Xiang David LI has been awarded the Tetrahedron Young Investigator Award 2024 for his exceptional contributions to the field of Bioorganic and Medicinal Chemistry.



Schmidt Science Fellow 2024 Pioneering Intelligent Materials Engineering

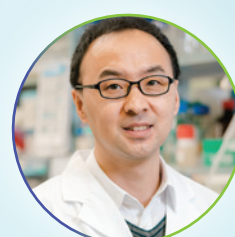
Dr. Dengping LYU PhD Graduate, Supervisor: Prof. Yufeng Wang

Dr. Dengping LYU's PhD research focused on colloidal synthesis and self-assembly. The Schmidt Science Fellow is awarded to the world's best emerging scientists who have completed a PhD in natural sciences, computing, engineering, or mathematics.



2022/23 Bailar Medalist and Lectureship

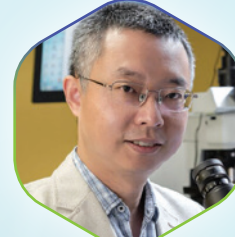
Professor Vivian Wing-Wah YAM has been named the recipient of the 2022-23 Bailar Medal by the University of Illinois at Urbana-Champaign in recognition of her distinguished achievements in the fields of inorganic chemistry and coordination chemistry. She is the first Asian scientist to receive the Bailar Medal, which recognises excellence in the field of inorganic chemistry.



2023 Contribution Award in Carbohydrate Chemistry

2023 Innovation Award for Exceptional Contributions in Peptide Synthesis and Peptide Drug Development

Professor Xuechen LI has been honoured with the Contribution Award in Carbohydrate Chemistry by the Chinese Chemical Society (CCS) in recognition of his dedication and commitment for advancing the science of carbohydrate chemistry.



2024 National Natural Science Foundation (NSFC) Distinguished Young Scholars

2023 BOCHK Science and Technology Innovation Prize in New Materials and New Energy

Professor Jinyao Tang has been awarded the prestigious BOCHK Science and Technology Innovation Prize (STIP) 2023 in New Materials and New Energy category. Prof. Tang's groundbreaking research in active colloidal materials holds significant potential for various applications, such as advancements in display technology and the creation of optical stealth materials.



2024 National Natural Science Foundation NSFC Excellent Young Scientist (國家自然科學基金委優秀青年基金)

Professor Jian He's research is at the interface between organic chemistry, inorganic chemistry, and materials science, is focused in the design of novel framework- and cluster-based catalysts for the advancement of sustainable organic synthesis.

2024 Best Scientists Ranking

Professor Sir Fraser Stoddart (21st globally, 2nd in China)

Chair Professor, the Department of Chemistry, Faculty of Science

Professor Chi-Ming CHE (71st globally, 5th in China)

Zhou Guangzhao Professor in Natural Sciences and Chair Professor, the Department of Chemistry, Faculty of Science

Graduate Sharing



POON Pak Shing Billy, AMRSC

BSc (Intensive Major in Chemistry) 2023
Patent Attorney Trainee – GRST Holdings Limited

"As a graduate of the Chemistry Intensive program at HKU, I departed with an amalgamation of knowledge and experience that has prepared me for my future career ahead. The comprehensive curriculum explored the entire spectrum of chemistry, covering inorganic, organic, analytical and physical realms.

During my time at HKU, I was enriched by various research opportunities, including summer research projects and an overseas research fellowship at Imperial College London. These experiences honed my analytical skills and fostered a profound passion for scientific exploration.

I am deeply grateful to the mentors who guided me. Prof. Che fueled my passion for chemistry, while Prof. Chiu encouraged me to excel and introduced me to Prof. Hii at Imperial College London, who further distilled my analytical and logical thinking. Dr. Edmund underscored the importance of translating research into impactful innovations, a lesson I will carry forward in my career.

The rigorous training I received has equipped me well for my role as a patent attorney trainee, enabling me to tackle complex technical issues across various fields and analyze prior art and raw data with confidence.

I extend my thanks to the HKU Chemistry Department for nurturing not only my academic growth but also my personal development, instilling in me the endurance and passion needed to succeed in my chosen path."

SHAFFI Raffi Mohammed BSc (Intensive Major in Chemistry) 2023

Research Assistant – R & D Department, Vita Green Health Products

"A primary reason why I pursued the Intensive Major Curriculum of Chemistry at HKU is because I have a deep passion for chemistry and wanted to specialize in this field, hoping to learn the necessary skills and knowledge to either pursue further studies or work in a chemistry-related industry. Not only had my 4-year undergraduate experience fulfilled this expectation, it also made me realize and appreciate how multidisciplinary and multifaceted chemistry is, as chemistry itself not only has multiple areas of interests, but it can also be applied in various industries and applications. Thanks to the support of my professors, I have managed to develop a solid foundation in areas like analytical, organic, inorganic, and physical chemistry during my first 2 years, then during my last 2 years of studies, I specialized in organic chemistry by taking various advanced courses and participating in research internship projects. Through the latter, I managed to apply what I have learned in class to a practical setting, as well as learned new practical skills and techniques that were both fascinating and useful for my career path. Along the way, as not all reactions would go as planned, I had to learn what went wrong and find a suitable solution, thus allowing me to cultivate my problem-solving skills and critical thinking skills that are essential now that I am working in the pharmaceutical industry as a research assistant.



While my current work involves tablet formulation and does not seem too akin to the chemistry I learned in my undergraduate studies, the skills I acquired throughout my studies at HKU have been extremely helpful in allowing me to pursue my current job or any other future career paths I would like to pursue. As I said in the beginning, chemistry is both multidisciplinary and multifaceted, so don't be afraid that specializing it through the intensive curriculum at HKU would stifle you in any way, as the professors and the curriculum itself could very well expand your horizons and skill set, and you will ultimately realize you can do so much with a strong background in chemistry and research."



WONG Kin Long BSc (Major in Chemistry) 2021

PhD Candidate – University of Oxford, UK

"During my undergraduate study at HKU, I got a lot of support from the teachers. They provided me with plenty of learning experiences including research internship projects. They were all supportive to answer my questions related to the courses and research skills. Through the research experiences, not only have I acquired better research skills but also developed critical thinking which I think are the most crucial skills as these help me look at an issue in different aspects. I also gained more interest in doing research and this has led me to decide to pursue further studies in chemistry. I am now doing a Doctor of Philosophy Degree in Chemistry at University of Oxford. I am glad that I can apply what I have learned in my BSc studies at HKU to start my new research journey in Oxford on enzymatic catalysts. I believe the knowledge and techniques I acquired from HKU would definitely be useful to tackle many scientific research obstacles I may have in my postgraduate studies and future career. I wish to thank HKU Chemistry Department for nurturing me as a scientist. And it was my honor to have received the G T Byrne Memorial Prize in Chemistry 2020-2021."

HSU Ka Yuen BSc (Intensive Major in Chemistry) 2022

Radiochemist Assistant – St. Teresa's Hospital

"Pursuing a chemistry intensive degree in HKU is indeed challenging, but the knowledge and skills that I have acquired throughout the 4-year curriculum are invaluable. The intensive program is tailored for those who wish to develop their career in chemistry-related industries or even pursue a PhD in the future. Most of the chemistry knowledge and technical skills that I have learned in this program are practical and realistic in society nowadays, in which I can really apply them in my workplace.

The department of chemistry offers a wide range of courses. After acquiring essential knowledge and skills as a good foundation in our first two years of study, we are given numerous research opportunities and laboratory sessions to really "get our hands dirty". For me, I am very grateful that I can have the opportunity to start a research topic during my final year on complex soft material. I personally found this step-by-step learning experience very suitable for those who have strong interest in chemistry or would like to sharpen their chemistry sense but don't know where to start. Don't worry, with your passion and determination towards chemistry, along with the well-planned curriculum and support offered by the department, I am sure that you can enjoy yourself learning chemistry in the coming four years and become a successful and knowledgeable person upon graduation."

LEUNG Wing Tung Christy

BSc (Intensive Major in Chemistry) 2022

Laboratory Officer – Hong Kong Productivity Council

"The Intensive Major in Chemistry Curriculum (aka HKU RSC Accredited Chemistry Programme) has equipped me with a wide array of chemistry knowledge and skills through a variety of well-designed courses covering theory, laboratory skills, internship and research experience, etc.. The programme has also given me a precious opportunity to join an internship outside HKU. The internship opportunity allowed me to apply my knowledge at work while picking up new skills through hand-on experience in workplace. The opportunity for doing undergraduate research in a research group enabled me to acquire critical thinking and problem-solving skills. All these experiences have nurtured me to become an independent person. The fruitful experience I gained here is very conducive to my future. I would like to express my gratitude to HKU Department of Chemistry for encouraging me to explore different areas of chemistry."



Department of Chemistry

The University of Hong Kong



Our Vision

To be one of the world's best academic departments for undergraduate education and a centre for innovative and creative research in frontier science.

Welcome to the Department of Chemistry at HKU

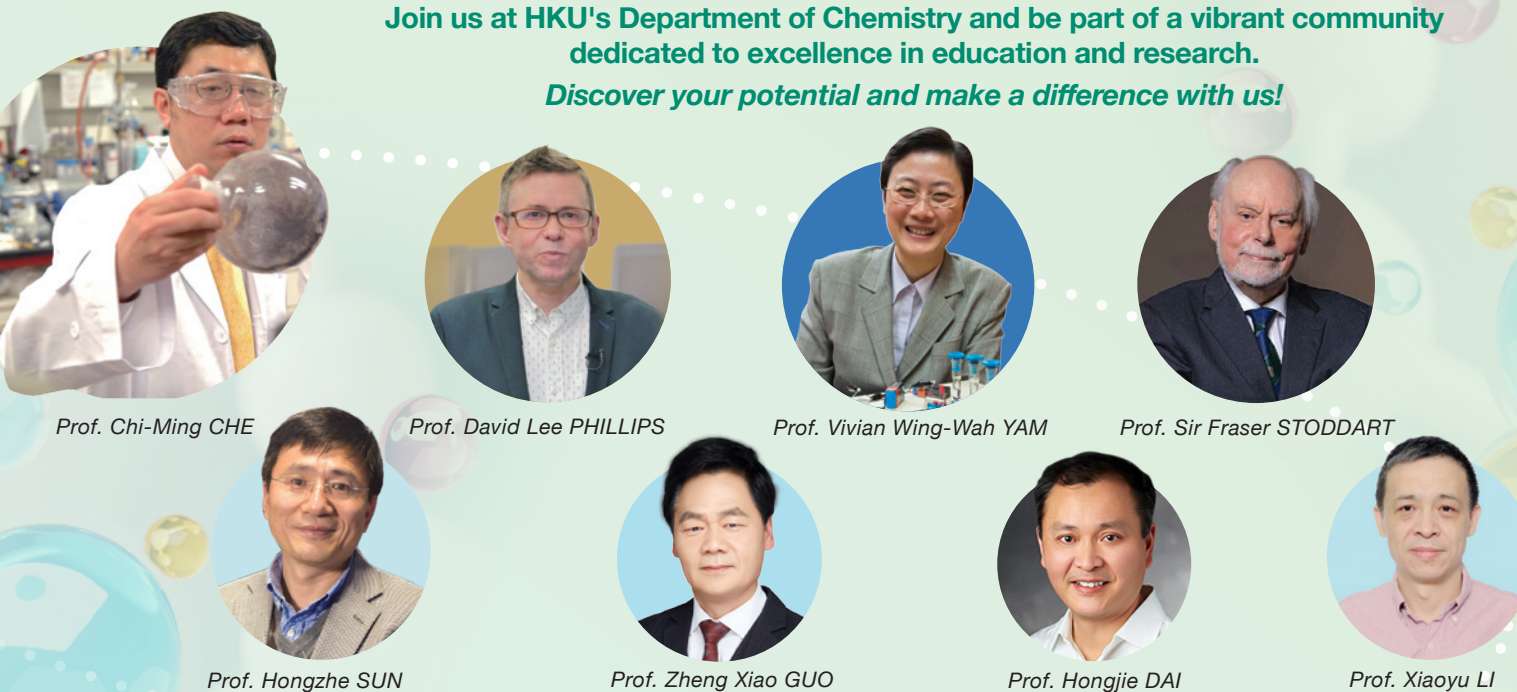
Where innovation meets excellence! Our department is renowned for its cutting-edge research, world-class faculty, and state-of-the-art facilities. We offer a dynamic and supportive learning environment that fosters creativity and critical thinking.

Why Choose Us?

- World-Class Faculty: Learn from leading experts and researchers who are passionate about teaching and mentoring.
 - The Department has a strong team of world-class scientists who are committed to providing quality teaching and devoted to nurturing our new generation. The achievements of our staff have been recognized by numerous international, national and regional awards.
- Innovative Research: Engage in groundbreaking research projects that address real-world challenges and contribute to scientific advancements.
 - The Department of Chemistry is ranked No. 1 among all chemistry departments in Hong Kong in the recent (2020) as well as the previous three Research Assessment Exercises (RAEs) by the Research Grants Council (RGC) of Hong Kong. In the recent RAE, 99 % of our research submissions is rated as either world-leading (4*) or internationally excellent (3*).

Join us at HKU's Department of Chemistry and be part of a vibrant community dedicated to excellence in education and research.

Discover your potential and make a difference with us!



Student's reflections and sharing

LAM Wan Lung (right)

BSc - Major in Chemistry, Common Core Transdisciplinary Minor in Sustaining Cities, Cultures, and the Earth
Exchange Study at University of British Columbia 2023-24

"My exchange at the University of British Columbia was a fulfilling journey of learning and self-discovery. In a vibrant, multicultural environment, I had the opportunity to meet people from different backgrounds, which enriched my studies and strengthened my resilience. Outside the classroom, I travelled across Canada to explore its stunning landscapes and natural beauty. This exchange study has given me unforgettable experiences and lasting memories that I will cherish forever."

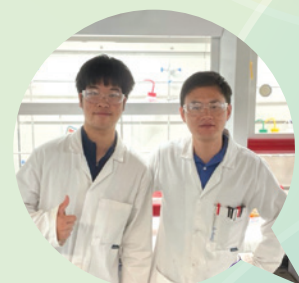


LU Yudi (left)

BSc - Major in Chemistry (Intensive)
Summer Research Programme at Imperial College London in 2023-24

"During my three months study and research in Imperial, I was able to conduct both chemistry synthesis and biological experiment to ultimately explore the most frontier chemical biology research. It's a great experience for me to fully explore the mystery of protein degradation and protein stabilization along with their great potentials in treating different kinds of diseases.

Also, it has been a great time for me to live in a foreign country and explore their culture. Imperial College is located in west part of London where lots of different museums are easily accessed. It's really fun to visit those museums during my spare time."



SUN Jiaqi

BSc - Major in Chemistry, Minor in French and Mathematics
Exchange Study at University of Chicago 2024-25

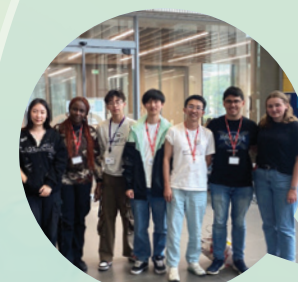
"The Department of Chemistry in HKU offers undergraduate students a comprehensive and diverse learning program. Throughout my college life, there are plenty of international exchange and research programs opportunities. The full-year exchange at the University of Chicago is truly an eye-opening experience. I had the chance to meet with students from different cultures and countries. Their teaching method, which emphasizes self-exploration, has prepared me for further postgraduate research. All in all, this full-year exchange has transformed me from a shy Chinese girl to an open-minded global citizen."



KIM Jeongwoo (Forth position from the right)

BSc - Major in Chemistry, Minor in Geography
Summer Research Programme at Imperial College London in 2023-24

"I highly recommend this research fellowship scheme to the students who are willing to carry out their studies after graduation. Here, you will experience one of the world's most intense research groups. You will be able to use the theoretical knowledge learnt in your undergraduate courses to conduct your research. Your group members will be composed of PhD, PG, and UG students. By working next to them, you will be able to observe how lives of PhD and PG students, which will be very helpful for you to decide whether to carry out your studies in the future. Moreover, you will have multiple valuable opportunities in which you can attend several seminars and presentations given by PhD or PG students. Lastly, by interacting with your supervisor and other students in the group meeting, you can hugely improve your lab and research skills."



AU Kwing Nam Andreas

BSc - Major in Chemistry
Exchange study at UC Berkeley in 2022-23 S2

"Embarking on the exchange studies to UC Berkeley was one of the best decisions I have made. I immersed myself in a multi-cultural environment and met people and friends from all walks of life. I also learned a lot from scholars and peers, and gained a great deal of valuable lab experiences, from the renowned College of Chemistry at Berkeley. Traveling around the States and Mexico in my free time has further opened up my horizon and given me life insights. Overall, this 6-month journey has made me a better person."



LAM Wai Leung Alvin (first from left)

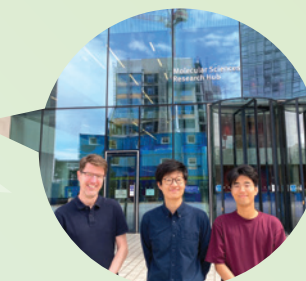
BSc - Intensive Major in Chemistry
Summer Research Programme at Imperial College London in 2022-23

"Going to Imperial College and carrying out a summer research project there has been a great experience. Not only have I got a taste of what it feels like to work as a chemistry researcher, I have also learned a lot of different experimental techniques and skills as well as practical knowledge. All these may not be easily acquired from lectures. The cherry on the cake in this program would be that you get to make new friends with students and researchers around the globe, broaden your horizon and learn valuable life-lessons for personal advancement. It has been such an invaluable experience that I will cherish for a very long time."

LEUNG Ho Chi Domingo (middle)

BSc - Intensive Major in Chemistry
Summer Research Programme at Imperial College London in 2022-23

"During my time at Imperial College, I had the invaluable opportunity to work closely with brilliant minds and acquire research-level synthetic techniques. This experience not only has enriched my understanding towards frontier chemistry research, but also shaped my future endeavors in doing advanced chemistry. It has been an awesome journey."



Exchange Study for Chemistry-major Students

- Exchange study through HKU Worldwide Undergraduate Student Exchange Programme, the Faculty Exchange Programme, and Departmental Exchange Programme.

More Internationalization Opportunities Available for Chemistry-major Students

(The information below is subject to change)

- Professional Development for Chemistry Majors at Yonsei University in South Korea
- Summer Research at Imperial College, UK (2 months in Summer)



Features of Undergraduate & Postgraduate Chemistry Programmes

Undergraduate Studies (BSc Chemistry Major)

- Our undergraduate chemistry education is of rigorous standard
- Two options are available to students
 - Regular Chemistry Major Curriculum (96 credits)
 - Intensive Chemistry Major Curriculum (*RSC Accredited Chemistry Programme; 144 credits)

Postgraduate Studies (MSc, MPhil, PhD)

- Taught Master Programme (MSc)
 - MSc in the field of chemical technologies for health and materials (MSc CTHM, 1.5 years)
- Master of Philosophy (MPhil)
 - normative study period for full-time: 2 years
- Doctor of Philosophy (PhD)
 - normative study period for full-time: 3 years (for those who already hold a research Master's degree) or 4 years (for those with a good Bachelor's degree with honours and/or a taught Master's degree)



* Our Intensive Chemistry Major curriculum has been accredited by the Royal Society of Chemistry (RSC), a world leading professional association for chemistry. The RSC accreditation of our programme is a strong recognition of the excellent standards and high quality education that the Department of Chemistry offers. We are the first university in Hong Kong to receive the RSC accreditation for a BSc Chemistry Programme.

Career Prospects for Chemistry Graduates in Different Sectors



Minimum Entry Requirement to Major in Chemistry or Intensive Major in Chemistry

Level 3 or above in HKDSE Chemistry or equivalent or a pass in CHEM1041 Foundations of Chemistry



Regular Major in Chemistry (96 credits)

Offered to students admitted to Year 1 in 2025-2026

The information given below may be subject to change.

1. Introductory level courses (48 credits)

Disciplinary Core Courses:	SCNC1111	Scientific method and reasoning
Science Foundation Courses (12 credits)	SCNC1112	Fundamentals of modern science
Disciplinary Core Courses (36 credits)	CHEM1042	General chemistry I
	CHEM1043	General chemistry II
	CHEM2241	Analytical chemistry I
	CHEM2341	Inorganic chemistry I
	CHEM2441	Organic chemistry I
	CHEM2541	Introductory physical chemistry

2. Advanced level courses (42 credits)

Disciplinary Core Courses (30 credits)	CHEM3241	Analytical chemistry II: chemical instrumentation
	CHEM3341	Inorganic chemistry II
	CHEM3441	Organic chemistry II
	CHEM3443	Organic chemistry laboratory
	CHEM3541	Physical chemistry: introduction to quantum chemistry
Disciplinary Electives (12 credits)	CHEM4142	Symmetry, group theory and applications
At least 12 credits of any level 4 Chemistry (CHEM4XXX) courses shown in List A.	CHEM4144	Advanced materials
	CHEM4145	Medicinal chemistry
List A (This list is subject to change. Please check the online syllabus on the science faculty website from time to time):	CHEM4147	Supramolecular chemistry
	CHEM4148	Frontiers in modern chemical science
	CHEM4241	Modern chemical instrumentation and applications
	CHEM4242	Advanced Analytical chemistry
	CHEM4341	Advanced inorganic chemistry
	CHEM4342	Organometallic chemistry
	CHEM4441	Advanced organic chemistry
	CHEM4443	Integrated organic synthesis
	CHEM4444	Chemical biology
	CHEM4542	Computational chemistry
	CHEM4543	Advanced physical chemistry

3. Capstone requirement (6 credits)

At least 6 credits selected from the following courses:

CHEM3999	Directed studies in chemistry
CHEM4910	Chemistry literacy and research
CHEM4911	Capstone experience for chemistry undergraduates: HKUtopia
CHEM4966	Chemistry internship
CHEM4999	Chemistry project (12)

Interdisciplinary Free Elective Courses

CHEM3144	Fundamentals of nuclear magnetic resonance
CHEM3242	Food and water analysis
CHEM3342	Bioinorganic chemistry
CHEM3442	Organic chemistry of biomolecules

