Master & Doctor of Philosophy Programs in Chemistry

Research Fields

Organic Chemistry
Organic Synthesis and Catalysis
Surface, Coating and Catalysis
Biosensors
Inorganic Chemistry
Functional Materials
Flow Based Analytical Systems
Analytical Chemistry
Protein and Enzyme Technology
Fermentation Technology
Molecular Biology
Bioactive Compounds from Natural Resources
Physical Chemistry
Polymer Chemsitry
Computational Chemistry
Coordination Polymer/Metal Organic Frameworks
Material Chemistry
Environmental Science
Food Chemistry
Biomedical and Biopharmaceutical
Green Biotechnology

For more information,
please visit the following website.
www.chem.science.cmu.ac.th

Master of Science Program in Chemistry

Type 1 (Plan A Type A 1)

Degree Requirements **36 credits**

A. Thesis **36 credits**

203797 Master's Thesis 36 credits

B. Academic Activities

1. A student has to attend seminar every semester throughout the program.
2. There must be at least one article relevant to a student's thesis published or accepted for publication in at least a national journal listed in TCI Tier 1 database with the student as the first author, **or** supplanted by a patent or a petty patent.
3. A student must present his/her work from his/her master's thesis at least once in a well–acknowledged national conference.
4. A thesis progress report with an approval of the Chairman of the Graduate Study Committee must be submitted to the Graduate School every semester.

C. Non–credit Courses

1. Graduate School requirement — a foreign language
2. Program requirement — The following seminar courses must be enrolled and granted the Satisfory (S) grade.
   - 203791 (Graduate Seminar in Chemistry 1)
   - 203792 (Graduate Seminar in Chemistry 2)
   - 203891 (Graduate Seminar in Chemistry 3)

Type 2 (Plan A Type A 2) Degree

Requirements	**a minimum of**	**36 credits**
A. Coursework	**a minimum of**	**21 credits**
1. Graduate Courses	a minimum of	21 credits
1.1 Field of Specialization	a minimum of	15 credits
1.1.1 Required courses		2 credits
203791 Graduate Seminar in Chemistry 1		1 credit
203792 Graduate Seminar in Chemistry 2		1 credit
1.1.2 Compulsory elective courses	a minimum of	6 credits
A student must select courses from the following list:		
203708 Advanced Organic Synthesis		3 credits

203714	Comprehensive Inorganic Chemistry	3	credits
203721	Chemical Thermodynamics	3	credits
203736	Essentials in Analytical Chemistry	3	credits
203739	Advanced Chemical Analysis	3	credits
203743	Enzymology	3	credits
203749	Research Methods in Biochemistry	4	credits
203807	Physical Organic Chemistry	3	credits
203812	Coordination Chemistry	3	credits
203821	Quantum Chemistry	3	credits

1.1.3 Elective courses a minimum of 7 credits

Elective courses are any graduate courses from the list below, or those enlisted in session 1.1.2, or any other graduate courses with approval of the graduate education executive committee approves.

203701	Combinatorial Chemistry	2	credits
203704	Natural Products Chemistry	2	credits
203705	Phytochemical Analysis	2	credits
203707	The Uses of Organic Raw Materials	3	credits
203709	Advanced Organic Spectroscopy	3	credits
203712	Chemical Bonding	3	credits
203713	Inorganic Reactions and Mechanisms	3	credits
203715	Spectroscopic Methods in Inorganic Chemistry	3	credits
203716	Descriptive Crystal Chemistry	3	credits
203719	Chemistry of Inorganic Materials	3	credits
203722	Chemical Kinetics	3	credits
203723	Electrochemistry	2	credits
203725	Colloid and Surface Chemistry	3	credits
203726	Nuclear and Radiochemistry	2	credits
203732	Electroanalysis	3	credits
203734	Chemical Analysis by Chromatographic Methods	3	credits
203735	Analysis of Foods and Nutraceuticals	3	credits
203741	Plant Biochemistry	3	credits
203745	Protein Chemistry	3	credits
203750	Environmental Analytical Chemistry	2	credits
203751	Computational Chemistry	3	credits

203752	Electronics of Analytical Instruments for Chemistry	3	credits
203753	Scientific Reading and Writing in Chemistry	2	credits
203754	Statistics and Computer Programs for Chemical Research	2	credits
203775	Polymer Characterisation and Properties	3	credits
203803	Stereochemistry and Asymmetric Synthesis	2	credits
203804	Chemistry of Heterocyclic Compounds	2	credits
203805	Green Chemistry	2	credits
203806	Organotransition Metals in Organic Synthesis	2	credits
203814	Organometallic Chemistry	3	credits
203824	Chemical Crystallography	3	credits
203825	Molecular Phenomena in Polymer Science	3	credits
203826	Statistical Thermodynamics	2	credits
203827	Molecular Spectroscopy	2	credits
203828	Polymer Synthesis and Characterisation	3	credits
203829	Polymer Properties and testing	3	credits
203831	Chemometrics	2	credits
203833	Advanced Analytical Spectroscopy	3	credits
203835	Chemical Analysis Involving Radioactivity	3	credits
203838	Analytical Techniques for Surface and Structural Characterization	2	credits
203841	Biochemistry Aspects of Nutrition	3	credits
203842	Biochemistry of Membranes	3	credits
203844	Biochemistry of Nucleic Acids	3	credits
203851	Environmental Toxicology and Residue Analysis	3	credits
203879	Selected Topics in Chemistry	2	credits
203889	Selected Topics in Chemistry	3	credits
1.2 Other courses (if any)	a maximum of	6	credits
1.2.1 Required courses	none		
1.2.2 Elective courses (if any)	a maximum of	6	credits

Elective courses are any graduate courses beside chemistry, and relevant to a student's thesis research. with an approval of the graduate program administrative committee.

Note: if a student does not want to choose any other elective course, a student may choose any course from compulsory (1.1.2) and/or elective courses (1.1.3).

2. Advanced Undergraduate Courses none

B. Thesis

203799 Master's Thesis 15 credits

C. Non-credit Courses

1. Graduate School requirement a foreign language
2. Program requirement none

D. Academic Activities

1. A student has to submit his/her study plan with approval of his/her thesis advisor to the graduate program administrative committee within the first semester of the program enrollment.

2. There must be at least one article relevant to a student's thesis published or accepted for publication either in at least a national journal listed in TCI Tier 1 database with the student as the first author, **or** in a well-acknowledged international conference proceeding (as a full paper), **or** supplanted by a patent or a petty patent.