

Curriculum of the Doctoral Program at the Department of Chemical and Materials Engineering, Chang Gung University
(For students admitted in Fall, 2025)

(For students admitted in Fall, 2025)																	
		Course Code	E / C	SUBJECT	Crt.	Grade	1Semester	2Semester		Course Code	E / C	SUBJECT	Crt.	Grade	1Semester	2Semester	
Compulsory Courses	College of Engineering	CED627	C	Seminar	8	1,2	2	2	Professional Elective Courses	CEM161	E	Enzymes and Cell Immobilization	3	1	3		
			C	English Technical Writing (1)(2)	2	1	1	1		CEM131	E	Polymer Structure and Physical Properties	3	1	3		
										CEM201	E	Instrumental Analysis Special Topics	3	1	3		
										CEM350	E	Particulate Engineering	3	1	3		
										CEM153	E	Membrane Technology	3	1	3		
Core Elective Courses		CEM030	E	Advanced Reaction Engineering	3	1	3			CEM080	E	Opto-Polymers & Their Application	3	1	3		
		CEM052	E	Advanced Transport Phenomena	3	1	3			CEM740	E	Special Topics in Advanced Electrochemistry	3	1	3		
		CEM123	E	Advanced Inorganic Materials	3	1	3			CED008	E	Clinical Applications of Biomedical Engineering and Materials	3	1	3		
		CEM120	E	Advanced Organic Materials	3	1		3		BEM129	E	Surface Analysis Technology	3	1	3		
		CEM270	E	Advanced Thermodynamics	3	1		3		CEM024	E	Nanobiotechnology	3	1		3	
		BEM121	E	Biochemical Engineering	3	1		3		CED005	E	Applied Industrial Microbiology	3	1		3	
		BEM122	E	Biomedical Engineering	3	1		3		CEM016	E	Theory and Design of Wastewater Treatment	3	1		3	
										CEM540	E	Bioreactor	3	1		3	
										CEM452	E	Polymer Blends	3	1		3	
										CEM21Y	E	Design of Experiments	3	1		3	
										CEM454	E	Thin Film Processing	3	1		3	
										CEM256	E	Battery and Energy Conversion	3	1		3	
										CEM520	E	Functional Polymers	3	1		3	
										CEM760	E	R&D and Patents Practice	3	1		3	
										CEM091	E	Solid State Chemistry	3	1		3	
	Remarks	1	At least 34 credit hours are required to receive Ph.D. degree. (1)10 credit hours from the required courses (including Seminar and English Technical Writing (1)(2)). (2)18 credit hours from the elective courses. (3)6 credits of thesis (grant upon graduation).														
		2	Max.of 6 credit hours outside of CME Department and Biomed Graduate Institutes are counted for graduation requirement.														
		3	Students have to take at least 2 courses from 7 core elective courses.														
4		Ph.D. students must take the compulsory Seminar course in the first year and second year (total 8 credit hours).															
5		All graduate students must pass/meet the English proficiency test/requirement as outlined in "English Proficiency Assessment for Foreign Students, College of Engineering, Chang Gung University".															
6		International students may take elective courses in English provided by other departments/graduate institutes of CGU toward graduation requirement or graduation requirement of core elective courses, within the caps of 12 credit hours for M.S. students and 9 credit hours for Ph.D. students. These courses are subject to be reviewed by advisor and graduate student affairs committee. This regulation applies to the international students admitted through the international student admission process.															
7		E:Elective / C:Compulsory															