

National Yunlin University of Science and Technology
Department of Chemical and Materials Engineering
Course Plan Flow Chart of Obligatory course for Undergraduate study

(Lecture-Lab-Credits)

Academic Year I		Academic Year II		Academic Year III		Academic Year IV	
1 st Semester	2 nd Semester	1 st Semester	2 nd Semester	1 st Semester	2 nd Semester	1 st Semester	2 nd Semester
General Requirement (Total 30 credits required, including 8 credits from General Education)							
Physical Education 2-0-0	Physical Education 2-0-0	Physical Education 2-0-0	Physical Education 2-0-0	Physical Education 2-0-0	Physical Education 2-0-0		
Military Science 2-0-0	Military Science 2-0-0						
Selected Readings of (Chinese) Prose 2-0-2	Appreciation of Chinese Literature 2-0-2	Practical Chinese 2-0-2	Advanced reading practice 2-0-2	Constitution of R.O.C and Its Founding Principle(一) 2-0-2	Constitution of R.O.C and Its Founding Principle(二) 2-0-2		
English oral practice (一) 0-2-1	English oral practice (二) 0-2-1	General Education 2-0-2	General Education 2-0-2	General Education 2-0-2	General Education 2-0-2		
General Discussions on Chinese History 2-0-2	Exclusive Discussion On History 2-0-2						
Vocabulary and Reading(一) 2-0-2	Vocabulary and Reading(二) 2-0-2						
10-2-7	10-2-7	6-0-4	6-0-4	6-0-4	6-0-4		
Professional Requirement (Total 75 credits required)							
General Physics (一) 3-0-3	General Physics (二) 3-0-3	Engineering Mathematics(一) 3-0-3	Engineering Mathematics(二) 3-0-3	Unit Operation and Transport Phenomena (二) 3-0-3	Unit Operation and Transport Phenomena (三) 3-0-3		
General Chemistry (一) 3-0-3	General Chemistry (二) 3-0-3	Organic chemistry (一) 3-0-3	Organic chemistry (二) 3-0-3	Chemical Engineering Thermodynamics 3-0-3	Project on special topic (一) 0-2-1	Process Design 3-0-3	
Calculus (一) 3-0-3	Calculus (二) 3-0-3	Physical Chemistry (一) 3-0-3	Physical Chemistry (二) 3-0-3	Instrumental Analysis 3-0-3	Chemical Reaction Engineering 3-0-3		
General Physical Lab (一) 0-3-1	General Physical Lab (二) 0-3-1	Material and Energy Balances 3-0-3	Physical Chemical Lab (一) 0-3-1		Process Control 3-0-3	Project on special topic (二) 0-2-1	
General Chemical Lab(一) 0-3-1			Unit Operation and Transport Phenomena (一) 3-0-3	Physical Chemical Lab(二) 0-3-1	Unit Operations (一) 0-3-1	Unit Operations (二) 0-3-1	
Calculator Introduction 2-0-2	Chemical Lab (二) 0-3-1	Organic chemical Lab(一) 0-3-1	Organic chemical Lab (二) 0-3-1				
General chemical engineering 1-0-1							
12-6-14	9-6-11	12-3-13	12-6-14	9-3-10	9-6-12	3-6-6	
Total : Minimal requirement for graduate is 132 credits							

Note : The department allows maximum 12 credits taken from other department or university.

Course Plan Flow Chart of Elective course for Undergraduate study

(Lecture-Lab-Credits)

Academic Year I		Academic Year II		Academic Year III		Academic Year IV	
1 st Semester	2 nd Semester	1 st Semester	2 nd Semester	1 st Semester	2 nd Semester	1 st Semester	2 nd Semester
Professional Elective course (minimal 27 credits required)							
				Organic Synthesis 3-0-3	Organic spectralogy 3-0-3	Surface Chemistry 3-0-3	
				Polymer Chemistry 3-0-3	Polymer Physics 3-0-3	Polymer Processing 3-0-3	Composite Materials 3-0-3
				Material Science 3-0-3	Electrochemistry 3-0-3	Electrochemical Engineering 3-0-3	Powder Technology 3-0-3
				Inorganic chemistry 3-0-3	Geramic materials 3-0-3	Thin film Technologies 3-0-3	Semiconductor Materials 3-0-3
					Colloid Chemistry 3-0-3	Technology of Opticelectronics and Display 3-0-3	
		Biology 3-0-3	Biochemistry 3-0-3	Biochemical Engineering 3-0-3	Biochemical Engineering 3-0-3	Biomedical Engineering 3-0-3	Bioseparation Technology 3-0-3
					Basic Molecular Biology 3-0-3		
				Introduction to Biotechnology 3-0-3	Food Engineering 3-0-3	Pharmaceutical Chemistry 3-0-3	Pharmaceutical Processes 3-0-3
				General life science 3-0-3	Introduction to Biomaterials 3-0-3	Experiments of Micro-Biosensor System 0-3-1	Medical Engineering Experiment 0-3-1
				Petrochemical Industry 3-0-3	Energy Technology 3-0-3	Process Simulation 3-0-3	工業儀錶 3-0-3
					Phase Equilibrium 3-0-3	Chemical Engineering Separation Processes 3-0-3	Chemical Engineering Machinery 3-0-3
							Industrial Catalysts 3-0-3
							Chemical manufacturing process 3-0-3
	Introduction to Safety and Hygiene of Chemical Industries 3-0-3	Environmental Chemistry 3-0-3			Industrial Pollution Control Practice 3-0-3		BIOREMEDIATION 3-0-3
					Thermal Processing Of Hazardous Waste 3-0-3	Prevention Leaks and Spills of Hazardous Waste 3-0-3	
					Disaster prevention engineering 3-0-3	Industrial fire explosion prevention 3-0-3	Safety Design of Chemical Process 3-0-3
	Computer Programming 3-0-3	Introduction to Electrical Engineering 3-0-3	Electronics 3-0-3	Chemical Engineering mathematics 3-0-3	Statistical Analysis 3-0-3	Experimental Design and Analysis 3-0-3	
		Introduction to Engineering Management 2-0-2	Engineering mechanics 3-0-3		Numerical Methods 3-0-3		
			Analytical Chemistry 3-0-3				
			General engineering economics 2-0-2				
6-0-6	8-0-8	11-0-11	27-0-27	39-0-39	36-3-37	33-3-34	