Curriculum of the Bachelor Program at the Department of Computer Science and Information Engineering, Chang Gung University (For students admitted in Fall, 2025)

Amended and approved by the Department Curriculum Committee on April 14, 2025

Required/ Selected courses (credits)		Course Title	1st Yr		Course Title	2nd Yr		Course Title	3rd Yr		Course Title	4th Yr	
			1	2		1	2		1	2		1	2
Compulsory		Calculus (I)(II)	3	3	Engineering Mathematics	3		Computer Architecture	3		Software and Hardware Project (III)	1	
		General Physics (I)(II)	3	3	Data Structures and Algorithms	3		Microcontroller Experiments	1				
		General Physics Laboratory (I)(II)	1	1	Computer Organization	3		Operating Systems	3				
		Introduction to Computer Science	3		Linear Algebra	3		Software Engineering	3				
		Computational Thinking and Programming	3		Systems Programming		3	Computer Networks	3				
		Discrete Mathematics		3	Algorithm Design		3	Software and Hardware Project (I)	1				
		Digital Circuit		3	Probability and Statistics		3	Software and Hardware Project (II)		1			
		Digital Circuit Lab.		1									
Selected courses	College-level core							English Speaking and Presentation (I)	2				
								English Speaking and Presentation (II)		2			
								Overseas Study		1	Overseas Study	1	
Selected courses	Information system design							Programming in the Unix	3		Embedded Software Design*	3	
								Object-Oriented Software Design		3	Database Design*	3	
								Practice of Operating Systems		3	Internship	4	
								Parallel Programming Design		3	Hardware-Software Co-Design*		3
								Compiler Design		3	Cloud Systems*		3
								Communication Systems		3			
	Information application technology				Signals and Systems		3	Computer Graphics	3		Pattern Recognition*	3	
					Database System Design		3	Introduction to Multimedia Information	3		Database Design*	3	
					Web Programming		3	Biostatistics	3		Medical Informatics*	3	
								Artificial Intelligence		3	Internship	4	
											Machine Learning*		3
											Cloud Systems*		3
											Machine Learning and Its Medical Applications*		3
											Python Programming for Deep Learning*		3
											Medical Image Processing*		3
	Computer network technology				Database System Design		3	Network Application Software Design	3		Advanced Computer Networks*	3	
					Web Programming		3	Programming in the Unix	3		Internship	4	
								Communication Systems		3	Internet of Things*		3
								Parallel Programming Design		3	Network Security and Management*		3
											Cloud Systems*		3

Required/ Selected courses (credits)		Course Title	1st Yr		Course Title	2nd Yr		Course Title	3rd Yr		Course Title	4th Yr	
			1	2		1	2		1	2		1	2
	Artificial intelligence	Programming Language for AI		3	Applications of Big Data	3		Deep Learning	3		Pattern Recognition*	3	
					Intelligent Sensing and Recognition		3	Programming in the Unix	3		Computer Vision*	3	
					AI Applications in Industry 4.0		3	Artificial Intelligence		3	Internship	4	
											Machine Learning and Its Medical Applications*		3
											Python Programming for Deep Learning*		3
											Medical Image Processing*		3
											Natural Language Processing and Applications*		3

Remarks

1. Graduation credits: 128

(1) Compulsory credits: 64

(2) Elective credits: 39

(a) The department requires at least 30 credits of elective courses, divided into four major computer science areas: "Information System Design", "Information Application Technology", "Computer Network Technology", "Artificial Intelligence". These 30 credits must include elective courses from two of these four areas, and at least 12 credits from each of the two areas. If one course belongs to multiple areas, only one area can be accounted for the inclusion of credits.

(b) A maximum of 9 credits will be recognized for elective courses from other departments or inter-departmental courses from the college. (general education courses, physical education electives, and national defense education and military training elective courses do not count into these 9 credits).

(c) Elective courses offered by the Department of Artificial Intelligence for students in their junior year (inclusive) or above can be recognized as elective credits in the field of "Artificial Intelligence" for this department, with a maximum of 12 credits, and these credits will not be included in the credit calculation for courses from other departments mentioned in point (b).

(3) General Education credits: Please refer to the course regulations of the General Education Center for details. 25 credits of holistic field, English field, core and multi-curricular courses.

2. Zero credit for compulsory in physical education courses for freshman and sophomore students.

3. CGU has an English graduation criterion to comply, and you must meet the school's standards before you can graduate. Please refer to the regulations of the Language Center for details.

4. Courses marked with an asterisk (*) are offered by the first-year master's program of the Department of Computer Science and Information Engineering. Junior and senior undergraduate students may also take these courses, and the credits can be counted toward graduation requirements.

5.Those who fail the "Software and Hardware Special Topic(3)" and need to retake it can take the "Software and Hardware Special Topic(2)" course instead.

6. Students must first complete overseas exchange studies and return to Taiwan before they can take the "Overseas Study" course.