

**Course List for Doctor of Philosophy (Ph.D.) Degree Program  
in Department of Computer Science and Information Engineering  
Chang Gung University (for 2023 Calendar Year Admission), Apr. 10th, 2023**

長庚大學資訊工程學系博士班 必選修科目表(112學年度入學學生適用) 112年4月10日系課委會修正通過

Area	Obligatory	Course Title	Total Credits	Year	1st Semester	2nd Semester
<b>Common</b>	✓	*Seminar (I) 學報討論(1)	2	1	2	
	✓	*Seminar (II) 學報討論(2)	2	1		2
	✓	*Seminar (III) 學報討論(3)	2	2	2	
	✓	*Seminar (IV) 學報討論(4)	2	2		2
<b>College Common</b>	✓	*English Technical Writing (I) 科技英文寫作(1)	1	1	1	
	✓	*English Technical Writing (II) 科技英文寫作(2)	1	1		1
	✓	*Scientific Writing 論文撰寫	0			
<b>Professional</b>		*Data Engineering 資料工程	3	1	3	
		*Service-Oriented Architecture (SOA) 服務導向應用系統設計	3	1	3	
		*Personal Communications 個人通訊	3	1	3	
		*High-Speed Networks and Applications 高速網路專論	3	1	3	
		*Selected Topics on Network System 網路系統專論	3	1	3	
		*Embedded Operating System 嵌入式作業系統	3	1	3	
		*System Performance Analysis 系統效能分析	3	1	3	
		*Advanced Computer Architecture 高等計算機架構	3	1		3
		*Digital Signal Processing 數位訊號處理	3	1	3	
		*Wireless Network 無線網路	3	1		3
		Objected-Oriented Software Engineering 物件導向軟體工程	3	1		3
		Speech and Image Processing 語音暨影像處理	3	1		3
		Parallel and Distributed Systems 平行與分散式系統	3	1		3
		*Cyber-Physical Systems 網宇實體系統	3	1		3
		*Selected Topics on Mobile Communications 行動通訊專論	3	1		3
		Multimedia Security 多媒體安全	3	1	3	
<b>Remarks</b>	<p>1. Graduation credits: 34 畢業學分：34學分。</p> <p>(1) Compulsory credits: 10 (including the 8 credits of Seminar and the 2 credits of English Technical Writing). 必修10學分(含學報討論8學分, 科技英文寫作2學分)。</p> <p>(2) Elective credits: at least 18 credits from the above listed professional courses. Students are allowed to take up to 1 professional course (3 elective credits) from the doctoral courses given in the college of engineering. Other doctoral courses offered by non-college of engineering, students have to get the approval from the chairman of our department. 選修18學分。若須選修其他系所博士班課程者, 以工學院所開設一門課程為限(3學分)。非工學院所開設博士班課程, 須經系主任同意後, 始得選修。</p> <p>(3) All students have to take the course Scientific Writing in every semester after the first year. The 6 credits of Dissertation will be awarded upon the completion of oral defense exam. 論文6學分(通過學位考試並繳交通過審核論文後給予)。</p> <p>2. Graduation requires meeting the English proficiency threshold: The standards for passing the English proficiency test are implemented according to the "English Proficiency Requirements for Graduate Students of the College of Engineering, Chang Gung University". 須達英文畢業門檻方可畢業: 英文能力檢定通過標準依據「長庚大學工學院研究生英文能力檢測實施方案」實施。</p> <p>3. Seminar provides 2 credit for each semester in the first 4 semesters, and it is compulsory for all students who have not graduated in the first 4 semesters. 學報討論一、二年級為必修, 合計8學分。畢業前至少需修習四個學期並通過。</p> <p>4. The courses are provided for Ph.D. and Master students. 博士班課程與碩士班課程共同開設。</p> <p>5. Courses with asterisk (*) are conducted in English. Other courses are lectured primarily in Chinese language. 星號(*)標示之課程為全英文授課, 其他課程以中文授課為主。</p> <p>6. Both "English Technical Writing (I)" and "English Technical Writing (II)" are required courses for Ph.D. students. One must complete "English Technical Writing (I)" first with a score no less than 70, before being allowed to take "English Technical Writing (II)". 博士班必修擋修規定: 需先修畢(70分)「科技英文寫作」(1), 才可修習「科技英文寫作」(2)。</p>					