Approved by the 1st Department Curriculum Meeting of academic year 113 second semester, on February 18, 2025 113學年度第二學期第1次光電與材料工程學系課程規劃委員會議通過(114/02/18)
Approved at the 2nd College Curriculum Meeting of academic year 113, on May16, 2025 113學年度第2次資電學院課程規劃委員會議通過(114/05/16)
Approved at the 4rd University Curriculum Meeting of academic year 113, on June 11, 2025 113學年度第2次校級臨時課程規劃委員會會議通過(114/06/11)

2025 Academic Four-Year Curriculum of Department of Optoelectronics and Materials Engineering

For 2025 enrolled students

grade	freshman grade				sophomore grade				junior grade				senior grade			
semester	first semester		second semester		first semester		second semester		first semester		second semester		first semester		second semester	
Basic Requred Courses (17credits)	Calculus (I)★	3	Calculus(II)★	3	Engineering Mathematics★	3			Techonology English Report	2						
	Physics	3	Applied Chemistry	2												
			Basic Circuit Experiments	1												
Core Requred Courses (38credits)	Photoelectric Science	2	Circuit Theory	2	Electronics	3	Electromagnetics	3	Senior Projects (I)★	1	Senior Projects (II)★	1				
	Materials Science and Engineering (I)	3	Materials Science and Engineering (II)	3	Optics	3	Introduction of Micro-processor	3	Optical and Materials Experiments (I)	1	Optical and Materials Experiments (II)	1				
			Basic Programming (Python)	3	Matlab Programming	3	Optical Design	3								
							Opto-electronical Materials	3								
Required Elective Courses (6credits)	Introduction to Artificial Intelligence★ (Required)	2			Creativity Engineering (Required)	2					Ethics of Engineering and Information (Required)	2				
Electives Courses (36credits) (The electives courses on the right are mainly based on the actual start of classes)	Introduction to Semiconductor Technology	3	Semiconductor Process Technology	3	Introduction to Green Technology	3	Database System	3	IoT Applications	3	Human-Machine Interface and Virtual Reality	3	Manufacturing Practice (Off-campus internship)	3	Business Experience★ (Off-campus internship)	3
					Artificial Intelligence Applications	3	Optical System Technology Applications	3	Deep Learning Applications★	3	Biomedical Image Processing	3	Employment Ethics (Off-campus internship)	3	Factory Practice★ (Off-campus internship)	3
					Semiconductor Device Design and Development	3	Metallographic Analysis	3	Medical Data Analysis and Machine Learning	3	Biomedical Signal Processing	3	Interships★ (Off-campus internship)	3	Work Ethics (Off-campus internship)	3
							Introduction to Photolithography Process Technology	3	Optoelectronics and Semiconductor Devices with Packaging and Testing Technology	3	Biomedical Data and Software Applications	3	Optoelectronics and Semiconductor Industry Development	3	AI and Semiconductor Industry Integration	3
									Sensor Devices and Principles	3	Solar cell manufacturing and inspection technology	3	Semiconductor Devices and Applications	3		
									Programming verification(Python)★	3	Laser Principle and Applications	3				
									Advanced Semiconductor Manufacturing Technology	3	Green Energy and ESG Sustainability Applications	3				
									Introduction to Green Energy and ESG Sustainability	3	Thin Film Engineering	3				
School Required Courses (6credits)	English(I) (Practical)(Advanced)	2	English(II) (Practical)(Advanced)	2	English (III) (Practical)(Advanced)	1	English(IV) (Practical)(Advanced)	1	Workplace English (Those who fail the English language test in the second semester of first grade must take this course)	0						
	physical education (I)	0	physical education(II)	0												
General Education Courses (22credits)	**General Education Courses: general education courses are divided into three categories: "Social Concerns", "Innovation and Creativity", "Health Promotion" . In each category, students are required to take a minimum of four general education course credits , totaling 22 credits.**															
School Required Elective Courses (3credits)	Science Park Exploration	2														
	AI Experience Fun 2.0	1														

Qualifications for graduation from our department

Required credits: 83 credits (including 55 credits of our departmental required, 6 credits of English, and 22 credits of General Education)

Electives credits: 45 credits (including 36 credits of our departmental electives and 9 credits of other departments (General Education, Physical Education, and Mlitary Training are not included in the calculation))

Minimum graduation credits: 128 credits ◎Intercollegiate electives must be requested and approved in advance if they are to be counted for graduation credit.

School and College Common required Notes

1.Students in our Department must complete the required credits of English and General Education courses in accordance with the "Regulations for English Courses at Chung Hua University" and "Regulations for General Education Courses at Chung Hua University" within the graduation period to be eligible for graduation.

2.Students must complete the required credits of physical education courses in accordance with the "Regulations for Physical Education Courses at Chung Hua University" within the period of study to be eligible for graduation.

3.In order to achieve the "Communication and Expression Ability" in the Basic Competency Index of CHU students, students of this department must complete and pass the English language test in accordance with the "Regulations for the Implementation of the English Language Test for CHU Students" within the period of study to be eligible for graduation.

4.In order to achieve the "Social Care Ability" in the basic competency index of CHU students, students of this department must complete the required 18 hours of service according to the "Implementation Guidelines for CHU Volunteer Campus Culture Promotion" within the term of study in order to be eligible for graduation.

5.In order to achieve the "Health and Fitness Ability" in the Basic Competency Index of CHU students, students must complete and pass four credits of general education health promotion courses within the period of study to be eligible for graduation.

6.In order to achieve the "Information Application Ability" in the Basic Competency Index of CHU students, students must take the "Basic Programming (Python)" course, and the "Matlab Programming" course, in accordance with the "Regulations for the Implementation of Information Application Ability Testing at CHU", and complete the required credits. The course is designed for students who have completed the required credits and passed the information application test.

7.In order to achieve the "Innovation and Creativity" in the basic competency index of CHU students, students must pass the assessment criteria and take the "Creative Engineering" course (with a grade on the transcript) and the "Senior Projects (1)" and " Senior Projects (2)" courses, which are required for the department's major, within the period of study. The student is eligible for graduation.□

8.In order to achieve the "AI ability" in the basic competency index of Chung Hua University students, students in this department must pass the AI ability test within the period of study in accordance with the "Implementation Measures for AI Ability Test for Students of Chung Hua University" to be eligible for graduation.

9.In order to achieve the "Basic Literacy" in the basic competency index for students in the college of Computer Science and Electrical Engineering of Chung Hua University, students must take and pass "Emotion Management and Interpersonal Communication" or a course recognized by the department in the General Education Studies 22 credit within the period of study.

10.Required elective course: defined as a course that must be taken within the period of study (withdrawal for the second time during the semester is considered not taken), and a grade in the subject on the transcript is recognized as an elective in the department's major field, and is eligible for graduation.□

11.The core courses are marked with ★ ("Matlab Programming" is recognized as Introduction to Computer Science, "Basic Programming (Python)" and "Programming Validation (Python)" are recognized as Programming, "Introduction to Artificial Intelligence" and "Deep Learning Applications" are recognized as Artificial Intelligence, "Calculus (I)", "Calculus (II)", "Engineering Mathematics" are recognized as Mathematics; "Senior Project (I)" and " Senior Project (2)" are recognized as projects, and "Corporate Internship", "Corporate Experience" and "Factory Practice" are recognized as internships.)

12.Description of "Exploring the Science Park" course: In order to cultivate students' independent learning ability, understand SDGs issues, and start freshman independent exploration and learning, students of our school must complete the "Exploring the Science Park" course in freshman year, and the credits obtained can be recognized within 9 credits of external departments.

13.The elective credits for graduation from this department must be 9 credits from other departments, including "Exploring the Science Park" and "AI Experience 2.0",(Transfer students and foreign students are exempt from taking the course) but excluding general education, physical education, and military training courses.