

2023 Academic Four-Year Curriculum of Electrical Engineering Department, CHU

Approved by the 2th College of Computer Since & Electrical Engineer Curriculum Committee of academic year 111 on April 17, 2023
 Approved at the 3rd College Curriculum Meeting of academic year 111, on May 31, 2023
 Approved at the 4rd University Curriculum Meeting of academic year 111, on June 14, 2023

| | Freshman | | Sophomore | | Junior | | Senior | |
|---|--|--|--|--|--|---|--|---|
| | Semester I | SemesterII | Semester I | SemesterII | Semester I | Semester II | Semester I | SemesterII |
| Compulsory | English (I) (2) Physical Education (I) (0) | English (II) (2) Physical Education (II) (0) | English (III) (1) | English (IV) (1) | | | | |
| General Studies | Core General Education Courses: Core general education courses are divided into three categories: "Social Concerns" (including the aspect of "Humanistic Cultivation" and "Social Observation"), "Innovation and Creativity" (including the aspect of "Artistic Perception" and "Scientific Exploration"), and "Health Promotion" (including the aspect of "Self-Exploration" and "Biomedical Health and Safety"). In each category, students are required to take a minimum of two core general education courses, totaling 12 credits. For elective courses, students need to complete 11 courses, totaling 10 credits. | | | | | | | |
| Elective courses Required in school | ◎Exploring the Science Park (2) AI Experience 2.0 (1) | | | | | | | |
| Core courses: 60 credits | Physics (I) (3) ★Calculus (I) (3) Logic Design (I) (3) ★Programming Design (I) (3) | Physics (II) (3) ★Calculus (II) (3) Logic Design (II) (3) ★Programming Design (II) (3) ★Linear Algebra (3) | Circuit Theory (I) (3) Electronics (I) (3) Electronic Lab (I) (1) Engineering Mathematics (I) (3) | Circuit Theory (II) (3) Electronics (II) (3) Electronic Lab (II) (1) Engineering Mathematics(II) (3) Signals and Systems (3) | Electromagnetics (I) (3) Microprocessor (I) (3) Electronic Lab (III) (1) | Electronic Lab (IV) (1) ★Project Practice (I) (1) | Project Practice (II) (1) | |
| number of credits | <u>12</u> | <u>15</u> | <u>10</u> | <u>13</u> | <u>7</u> | <u>2</u> | <u>1</u> | <u>0</u> |
| Required Elective Course | | Project Design(I) (1) | Innovative Project Design (2) | Project Design (II) (1) | Communication Systems (3) Probability and Statistics (3) | Electromagnetics(II)(3) Microprocessor(II)(3) Modern Physics (3) Electrical Machinery (3) | | |
| Professional Elective courses | Engineering English (2) Basic Mathematics (2) | | | | Electronics (III) (3) Engineering Application Software (3) Data structures(3) Introduction to Bio-electronics (3) Control Engineering (3) | Digital Control (3) Numerical Analysis (3) Complex Variables (3) Communication Electronics (3) Principle of Digital Communications (3) Digital Integrated Circuits (3) ★Engineering Application Software(3) | Electromagnetic Wave (3) 5G Wireless Communication(3) Digital Signal Processing (3) Digital Signal Processing Simulation (3) Semiconductor Devices (3) Analog Integrated Circuits(3) Manufacturing Practice(3) Employment Ethics(3) Internships (3) Introduction to VLSI Design (3) Automatic System (3) | Implemtation Digital Integrated Circuits(3) Optoelectronics(3) Embedded Systems (3) Computer Architecture (3) Semiconductor Technology (3) ★Digital Image Processing(3) Work Ethics (3) ★Business Experience (3) ★Factory Practice (3) IC Layout (3) |
| *The minimum requirement for graduation with a B. S. degree: 128 credits * 128 credits =6(Basic general education courses)+22(Elective general education courses)+60 (Core courses) +40 (Elective courses) | | | | | | | | |

***For 40 Elective credits of graduation requirement, every student must pass 9 cross-department credits.**

Remarks: (Compulsory notices for schools and colleges)

1. Students of this department eligible for graduation must study and pass English and multiple general education courses (GEC) according to "Chung Hua University (CHU) English courses", "internal and external certification exam", and "workplace English coursework essentials" and "CHU GEC regulations". There are 22 credits of GEC required in the regulation. (1) 12 credits of core GEC divided into three categories, such as "social care" (containing "humanistic cultivation" and "social observation"), "innovation and creativity" (containing "artistic perception" and "scientific inquiry"), and "health promotion" (containing "self-exploration" and "biomedicine and health care"), at least passing two core GEC of each category & contain at least 4 dimensions. (2) 10 credits of multiple elective courses.
2. Students of this department are eligible for graduation must study and pass physical education courses (PEC) according to "PEC of CHU".
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 and the Chinese 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 CUH 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 the required credits and pass the swimming ability and physical fitness tests in accordance with the "Regulations for Physical Education Courses at CHU" 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 "Office Software Application" course (with a grade on the transcript), 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 CUH 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 assessment of "basic literacy", students eligible for graduation must pass the "interpersonal communication" course offered by department or degree program, or recognized with the "interpersonal communication". (Included in 12 credits of core compulsory GEC).
9. 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, and physical education.
10. Total 6 elective courses are related to enterprise practice in this department: "manufacturing practice", "workplace ethics", "enterprise internship", "work ethics", "enterprise experience", and "factory practice", according to "Implementation measures for off-campus internships in the department of EE".
11. Micro-credit course description: In order to allow students of CHU to understand the characteristics and key points of the courses among the various colleges of the school, the freshman of our school must complete the CEMC.
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 core curriculum of the institute is to ★ be noted. ("Engineering Application Software" is recognized as an introduction to computers, "Programming (I) and Programming (II)" is recognized as programming, "Calculus (I), Calculus (II), and Linear Algebra are recognized as mathematics", "Digital Image Processing" is recognized as an introduction to artificial intelligence, "Topic Practice (1) is recognized as a topic, and "Enterprise Internship, Enterprise Experience, Factory Practice" is recognized as an internship).
14. In order to cultivate and enhance students' AI and metaverse application capabilities of the latest technologies, so that students in the first year have the latest technical knowledge, students of this school are requested to complete the "AI Experience 2.0 Course" in their first year, and the credits obtained can be recognized within 9 credits of the external department.
15. Department electives will be adjusted according to the actual start of classes.