

# Department of Electrical Engineering

## Curriculum Requirements for Enrollees in the Academic Year 112 (Fall 2023)

|                                      |                                                                                                                                                                                                                |                                                                                                                                                                                                            |                                                                                                                                                              |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Program                              | Four-year technical college program of the Day Division                                                                                                                                                        |                                                                                                                                                                                                            |                                                                                                                                                              |
| Group                                | None                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                              |
| Class Type                           | Regular Class                                                                                                                                                                                                  |                                                                                                                                                                                                            |                                                                                                                                                              |
| Special Program                      | None                                                                                                                                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                              |
| Curriculum Committee                 | Department Curriculum                                                                                                                                                                                          | 114. 09. 05 ; 114. 11. 28                                                                                                                                                                                  |                                                                                                                                                              |
|                                      | College Curriculum                                                                                                                                                                                             | 114. 09. 12 ; 114. 12. 04                                                                                                                                                                                  |                                                                                                                                                              |
|                                      | University Curriculum                                                                                                                                                                                          | 114. 09. 22 ; 115. 01. 05                                                                                                                                                                                  |                                                                                                                                                              |
|                                      | Academic Affairs                                                                                                                                                                                               | 114. 09. 22 ; 115. 01. 05                                                                                                                                                                                  |                                                                                                                                                              |
| Graduation Credits /Study Duration   | At least 128 credits required (normally 4 years).                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                                                                                              |
| Credit Load per Semester             | Students in Grades 1 and 2 must take no fewer than 16 credits and no more than 28 credits per semester. Students in Grades 3 and 4 must take no fewer than 9 credits and no more than 25 credits per semester. |                                                                                                                                                                                                            |                                                                                                                                                              |
| Required and Elective                | Credits                                                                                                                                                                                                        | Subject Category                                                                                                                                                                                           | Credits                                                                                                                                                      |
| Required                             | 77.00 Credits                                                                                                                                                                                                  | General Education                                                                                                                                                                                          | 23.00 Credits                                                                                                                                                |
|                                      |                                                                                                                                                                                                                | Major Required                                                                                                                                                                                             | 52.00 Credits                                                                                                                                                |
|                                      |                                                                                                                                                                                                                | College Major                                                                                                                                                                                              | 2.00 Credits                                                                                                                                                 |
| Elective                             | 51.00 Credits                                                                                                                                                                                                  | General Education<br>Liberal Arts Elective                                                                                                                                                                 | 8.00 Credits                                                                                                                                                 |
|                                      |                                                                                                                                                                                                                | Major Elective                                                                                                                                                                                             | 43.00 Credits                                                                                                                                                |
|                                      |                                                                                                                                                                                                                | College professional<br>selective courses                                                                                                                                                                  | 0.00 Credits                                                                                                                                                 |
| Graduation                           | Course Title                                                                                                                                                                                                   | Description                                                                                                                                                                                                | Regulations/Notes                                                                                                                                            |
| Cross-disciplinary<br>Credit Courses | Cross-disciplinary<br>Program Learning                                                                                                                                                                         | Students must complete at least one (micro) credit program offered by their respective college before graduation, or a (micro) credit program from another college with the approval of their own college. | 1.Regulations for the Establishment of Credit Programs                                                                                                       |
| Cross-disciplinary<br>Credit Program | Digital Technology<br>Micro- Credit Program Learning                                                                                                                                                           | A Micro-Credit Program in Digital Technology offered by the student' s respective college                                                                                                                  | 2.Guidelines for the Implementation of Interdisciplinary (Micro) Credit Programs                                                                             |
| English Certificate                  | English Proficiency Test                                                                                                                                                                                       | Students must pass the General English Proficiency Test (GEPT) Basic Level (or equivalent) during their studies.                                                                                           | 1.Principles for the Implementation of English Courses and English Proficiency Graduation Requirements                                                       |
| Practical Project                    | Practical Project                                                                                                                                                                                              | According to the regulations of each department                                                                                                                                                            | 1.Regulations for the Implementation of “Practical Projects, Special Projects, Research Projects, and Graduation Design”<br>2.Regulations of Each Department |
| Professional                         | Professional                                                                                                                                                                                                   | Students must obtain at least one                                                                                                                                                                          | Regulations of Each                                                                                                                                          |

|                       |                                                       |                                                       |                                                                                                                                    |
|-----------------------|-------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Off-campus internship | In accordance with the regulations of each department | In accordance with the regulations of each department | In accordance with the University's Regulations for Student Off-Campus Internships and the relevant regulations of each department |
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| Other Regulations     |                                                       |                                                       |                                                                                                                                    |

Remarks

"Computer Course" means computer access is required (computer and internet usage fee).  
Graduation Requirements :  
「G01」 : Cross-disciplinary Credit Program: Cross-disciplinary Learning  
「G02」 : Cross-disciplinary Credit Program: Digital Technology Micro Program  
「G03」 : English Proficiency Certificate  
「G04」 : Practical Project  
「G05」 : Professional Certificate  
「G06」 : Off-campus Internship  
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| First Semester, First Year  |               |                                        |                  |                 | Second Semester, First Year  |               |                                      |                  |                 |
|-----------------------------|---------------|----------------------------------------|------------------|-----------------|------------------------------|---------------|--------------------------------------|------------------|-----------------|
| Course Category             | Course Number | Course Name                            | Credit s/ Hou rs | Notes           | Course Category              | Course Number | Course Name                          | Credit s/ Hou rs | Notes           |
| General Education           | 496105        | Chinese(1)                             | 2/2              |                 | General Education            | 496205        | Chinese(2)                           | 2/2              |                 |
| General Education           | 496505        | Human Rights and Legal                 | 2/2              |                 | General Education            | 492002        | English (II)                         | 2/2              |                 |
| General Education           | 492001        | English(1)                             | 2/2              |                 | General Education            | 4912B0        | physical education (2)               | 1/2              |                 |
| General Education           | 4912A0        | physical education (1)                 | 1/2              |                 | General Education            | 490205        | Community Service and Learning(2)    | 0/1              |                 |
| General Education           | 490105        | Community Service and Learning(1)      | 0/1              |                 | General Education            | 497B00        | General Courses (II)                 | 2/2              |                 |
| General Education           | 497A00        | General Courses (I)                    | 2/2              |                 | Major Required               | 405C02        | Physics(2)                           | 3/3              |                 |
| Major Required              | 405C01        | Physics (1)                            | 3/3              |                 | Major Required               | 405C08        | Calculus(2)                          | 3/3              |                 |
| Major Required              | 405C03        | Physics Lab.                           | 1/2              |                 | Major Required               | 405C06        | Computer Program                     | 2/3              | Computer Course |
| Major Required              | 405C07        | Calculus (1)                           | 3/3              |                 | Major Elective               | 405885        | Industrial Wiring internship         | 2/3              |                 |
| Major Required              | 405031        | Introduction to Computer Science       | 2/3              | Computer Course | Major Elective               | 405892        | Computer Programming and Application | 1/2              | Computer Course |
| Major Elective              | 405888        | Introduction to Electrical Engineering | 0/1              |                 | Major Elective               | 405Q53        | ComputerSoftwareAppliationandLab     | 2/3              | Computer Course |
|                             |               |                                        |                  |                 |                              |               |                                      |                  |                 |
| 18 Credits, 23 Hours        |               |                                        |                  |                 | 20 Credits, 26 Hours         |               |                                      |                  |                 |
| First Semester, Second Year |               |                                        |                  |                 | Second Semester, Second Year |               |                                      |                  |                 |

| Course Category            | Course Number | Course Name                                                | Credits/Hours | Notes           | Course Category             | Course Number | Course Name                                                  | Credits/Hours | Notes           |
|----------------------------|---------------|------------------------------------------------------------|---------------|-----------------|-----------------------------|---------------|--------------------------------------------------------------|---------------|-----------------|
| General Education          | 496405        | Contemporary Taiwan and Moder World                        | 2/2           |                 | General Education           | 496305        | Practical Chinese                                            | 2/2           |                 |
| General Education          | 492003        | English(III)                                               | 2/2           |                 | General Education           | 492004        | English (IV)                                                 | 2/2           |                 |
| General Education          | 4913C0        | physical education (3)                                     | 1/2           |                 | General Education           | 4913D0        | physical education (4)                                       | 1/2           |                 |
| General Education          | 497C00        | General Courses(III)                                       | 2/2           |                 | General Education           | 497D00        | General Courses (IV)                                         | 2/2           |                 |
| Major Required             | 405C12        | Electric Circuits (1)                                      | 3/3           |                 | Major Required              | 405C13        | Electric Circuits(2)                                         | 3/3           |                 |
| Major Required             | 405C14        | Engineering Mathematics (1)                                | 3/3           |                 | Major Required              | 405C15        | Engineering Mathematics (2)                                  | 3/3           |                 |
| Major Required             | 405C16        | Electronics (1)                                            | 3/3           |                 | Major Required              | 405C17        | Electronics (2)                                              | 3/3           |                 |
| Major Required             | 405C36        | Electronics Lab.                                           | 2/3           |                 | Major Required              | 405D42        | Single-Chip Application and Lab.                             | 2/3           |                 |
| Major Required             | 405C43        | Programmable Logic Control and Lab.                        | 2/3           |                 | Major Elective              | 405886        | Mechatronics Integration Practice(1)                         | 2/3           |                 |
| Major Elective             | 405Q10        | Logic Design and Lab.                                      | 3/3           |                 | Major Elective              | 405893        | Internet Applications                                        | 2/3           | Computer Course |
| Major Elective             | 405R52        | Power Generation Technology for New and Renewable Resource | 3/3           |                 | Major Elective              | 405N12        | Professional Electrical Engineering English                  | 2/2           |                 |
|                            |               |                                                            |               |                 | Major Elective              | 405Q15        | Signals and Systems                                          | 3/3           |                 |
|                            |               |                                                            |               |                 | Major Elective              | 405R86        | Photovoltaic System Construction Practice                    | 2/3           |                 |
|                            |               |                                                            |               |                 |                             |               |                                                              |               |                 |
| 26 Credits, 29 Hours       |               |                                                            |               |                 | 29 Credits, 34 Hours        |               |                                                              |               |                 |
| First Semester, Third Year |               |                                                            |               |                 | Second Semester, Third Year |               |                                                              |               |                 |
| Course Category            | Course Number | Course Name                                                | Credits/Hours | Notes           | Course Category             | Course Number | Course Name                                                  | Credits/Hours | Notes           |
| Major Required             | 405C19        | Control System                                             | 3/3           |                 | Major Required              | 405C20        | Control System Lab                                           | 1/3           |                 |
| Major Required             | 405C21        | Project in Practice (1)                                    | 1/2           | G04             | Major Required              | 405C22        | Project in Practice (2)                                      | 1/2           |                 |
| Major Required             | 405C28        | Electrical Machinery(1)                                    | 3/3           |                 | Major Required              | 405C29        | Electrical Machinery Lab.                                    | 1/3           |                 |
| Major Elective             | 405883        | Introduction to Electric Vehicles                          | 3/3           |                 | Major Elective              | 405884        | Mechatronics and Practical of electric vehicles              | 3/3           |                 |
| Major Elective             | 405887        | Mechatronics Integration Practice(2)                       | 2/3           |                 | Major Elective              | 405895        | Digital System Design                                        | 2/3           |                 |
| Major Elective             | 405894        | Linear Algebra                                             | 3/3           |                 | Major Elective              | 405N10        | PC-based programming practice                                | 2/3           |                 |
| Major Elective             | 405N09        | Supervisory Control System and Practice                    | 3/3           |                 | Major Elective              | 405N33        | Deep Learning                                                | 3/3           |                 |
| Major Elective             | 405N11        | Microprocessor and Lab                                     | 2/3           | Computer Course | Major Elective              | 405N37        | Applications of AI Power Distribution Design                 | 3/3           |                 |
| Major Elective             | 405N32        | Machine Learning                                           | 3/3           |                 | Major Elective              | 405N38        | Electric Motorcycle Maintenance and Fault Diagnosis Practice | 3/3           |                 |
| Major Elective             | 405N36        | Virtual reality applications                               | 3/3           |                 | Major Elective              | 405Q18        | Power Systems(1)                                             | 3/3           |                 |

| Major Elective              | 405Q14        | Computer-Aided Circuit Design and Practice             | 2/3           | Computer Course | Major Elective               | 405Q20        | Control System Design                                                     | 3/3           |                 |
|-----------------------------|---------------|--------------------------------------------------------|---------------|-----------------|------------------------------|---------------|---------------------------------------------------------------------------|---------------|-----------------|
| Major Elective              | 405Q16        | Distribution Design                                    | 3/3           |                 | Major Elective               | 405Q40        | Computer Graphics on Electrical Engineering                               | 3/3           | Computer Course |
| Major Elective              | 405Q21        | Elementals of Sensor and Transducers                   | 3/3           |                 | Major Elective               | 405Q42        | Electrical Machinery(2)                                                   | 3/3           |                 |
| Major Elective              | 405Q41        | Electromagnetism                                       | 3/3           |                 | Major Elective               | 405Q71        | The introduction of embeded system                                        | 3/3           |                 |
| Major Elective              | 405R13        | Introduction to Electro-optics Engineering             | 3/3           |                 | Major Elective               | 405R15        | Materials and Elements of Fiber-Optics                                    | 3/3           |                 |
| Major Elective              | 405R14        | Physics of Semiconductor                               | 3/3           |                 | Major Elective               | 405R50        | Introduction to Energy Management                                         | 3/3           |                 |
| Major Elective              | 405R51        | Programming and Analysis of Power System               | 3/3           |                 | Major Elective               | 405R71        | Semiconductor and optoelectronic manufacturing equipment                  | 3/3           |                 |
| Major Elective              | 405T08        | Industrial distribution and Lab.                       | 2/3           |                 | Major Elective               | 405T31        | Distribution Design and Lab.                                              | 2/3           |                 |
| Major Elective              | 400N01        | Teaching assistant practice                            | 1/1           |                 |                              |               |                                                                           |               |                 |
|                             |               |                                                        |               |                 |                              |               |                                                                           |               |                 |
| 49 Credits, 54 Hours        |               |                                                        |               |                 | 45 Credits, 53 Hours         |               |                                                                           |               |                 |
| First Semester, Fourth Year |               |                                                        |               |                 | Second Semester, Fourth Year |               |                                                                           |               |                 |
| Course Category             | Course Number | Course Name                                            | Credits/Hours | Notes           | Course Category              | Course Number | Course Name                                                               | Credits/Hours | Notes           |
| General Education           | 492248        | English Proficiency qualification                      | 1/N           | G03             | College Major                | 40TNJ9        | Interdisciplinary program learning                                        | 1/1           | G01             |
| Major Elective              | 405865        | Introduction to Semiconductor Manufacturing Technology | 3/3           |                 | College Major Required       | 40TNK1        | Interdisciplinary Micro Course Program for Engineering Digital Technology | 1/1           | G02             |
| Major Elective              | 405N06        | Originality Thinking Training                          | 2/2           |                 | Major Required               | 405C53        | Professional Certification Preparation                                    | 1/N           | G05             |
| Major Elective              | 405N07        | Personal Character and Professional Ethics             | 2/2           |                 | Major Elective               | 405848        | Thin Film Engineering and Lab                                             | 3/3           |                 |
| Major Elective              | 405Q19        | Power Systems(2)                                       | 3/3           |                 | Major Elective               | 405891        | Numerical Methods                                                         | 3/3           |                 |
| Major Elective              | 405Q24        | Power electronics                                      | 3/3           |                 | Major Elective               | 405N08        | Life-Career Counseling                                                    | 2/2           |                 |
| Major Elective              | 405Q25        | Energy Technology.                                     | 3/3           |                 | Major Elective               | 405N44        | Electrical Engineering Practical Capability Certification                 | 2/2           |                 |
| Major Elective              | 405Q27        | System Protections and Coordinations                   | 3/3           |                 | Major Elective               | 405Q32        | Electrical Supervisory and Control Automation                             | 3/3           |                 |
| Major Elective              | 405Q43        | Project Management                                     | 3/3           |                 | Major Elective               | 405Q33        | Renewable Electricity                                                     | 3/3           |                 |
| Major Elective              | 405Q49        | Summer Internship                                      | 3/3           | G06             | Major Elective               | 405Q34        | Power system simulation                                                   | 3/3           |                 |
| Major Elective              | 405Q55        | Semester Off-campus Internship (1)                     | 9/9           | G06             | Major Elective               | 405Q39        | Electrical Technology Evaluation                                          | 2/2           |                 |
| Major Elective              | 405Q59        | Practic of Electrical Facility Testing                 | 2/3           |                 | Major Elective               | 405Q56        | Semester Off-campus Internship (2)                                        | 9/9           | G06             |
| Major Elective              | 405R16        | Introduction to Nanotechnology                         | 3/3           |                 | Major Elective               | 405Q60        | Electric Motor Control and Practice                                       | 2/4           |                 |
| Major Elective              | 405R19        | Vacuum Technique                                       | 3/3           |                 | Major Elective               | 405R24        | The Theory and Technique of Solar Cell                                    | 3/3           |                 |

|                      |        |                                               |     |  |                      |        |                                                         |     |  |
|----------------------|--------|-----------------------------------------------|-----|--|----------------------|--------|---------------------------------------------------------|-----|--|
| Major<br>Elective    | 405T01 | Distribution of<br>electricity<br>regulations | 3/3 |  | Major<br>Elective    | 405R81 | LED Lighting and<br>Applications                        | 3/3 |  |
|                      |        |                                               |     |  | Major<br>Elective    | 405T13 | Engineering quality<br>control and budget<br>production | 2/4 |  |
|                      |        |                                               |     |  |                      |        |                                                         |     |  |
| 46 Credits, 46 Hours |        |                                               |     |  | 43 Credits, 46 Hours |        |                                                         |     |  |