

# Department of Civil Engineering and Geomatics

## Curriculum Requirements for Enrollees in the Academic Year 110 (Fall 2021)

|                                    |                                                                                                                                                                                                                |                                                                        |                   |       |                             |        |                                                 |                 |                 |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------|-------|-----------------------------|--------|-------------------------------------------------|-----------------|-----------------|
| Program                            | Four-year technical college program of the Day Division                                                                                                                                                        |                                                                        |                   |       |                             |        |                                                 |                 |                 |
| Group                              | None                                                                                                                                                                                                           |                                                                        |                   |       |                             |        |                                                 |                 |                 |
| Class Type                         | Regular Class                                                                                                                                                                                                  |                                                                        |                   |       |                             |        |                                                 |                 |                 |
| Special Program                    | None                                                                                                                                                                                                           |                                                                        |                   |       |                             |        |                                                 |                 |                 |
| Curriculum Committee               | Department Curriculum                                                                                                                                                                                          |                                                                        |                   |       |                             |        |                                                 |                 |                 |
|                                    | College Curriculum                                                                                                                                                                                             |                                                                        |                   |       |                             |        |                                                 |                 |                 |
|                                    | University Curriculum                                                                                                                                                                                          |                                                                        | 111.06.07         |       |                             |        |                                                 |                 |                 |
|                                    | Academic Affairs                                                                                                                                                                                               |                                                                        | 110.06.07         |       |                             |        |                                                 |                 |                 |
| 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                           | 88 Credits                                                                                                                                                                                                     |                                                                        | General Education |       | 16 Credits                  |        |                                                 |                 |                 |
|                                    |                                                                                                                                                                                                                |                                                                        | Major Required    |       | 72 Credits                  |        |                                                 |                 |                 |
|                                    |                                                                                                                                                                                                                |                                                                        | College Major     |       | 0 Credits                   |        |                                                 |                 |                 |
| Elective                           | 40 Credits                                                                                                                                                                                                     |                                                                        | General Education |       | 8 Credits                   |        |                                                 |                 |                 |
|                                    |                                                                                                                                                                                                                |                                                                        | Major Elective    |       | 32 Credits                  |        |                                                 |                 |                 |
| Other Regulations                  |                                                                                                                                                                                                                |                                                                        |                   |       |                             |        |                                                 |                 |                 |
| Remarks                            | "Computer Course" means computer access is required (computer and internet usage fee).                                                                                                                         |                                                                        |                   |       |                             |        |                                                 |                 |                 |
| First Semester, First Year         |                                                                                                                                                                                                                |                                                                        |                   |       | Second Semester, First Year |        |                                                 |                 |                 |
| Course                             | Course                                                                                                                                                                                                         | Course Name                                                            | Credits / Hours   | Notes | Course                      | Course | Course Name                                     | Credits / Hours | Notes           |
| General Education                  | 435001                                                                                                                                                                                                         | Chinese(1)                                                             | 2/2               |       | General Education           | 435002 | Chinese(2)                                      | 2/2             |                 |
| General Education                  | 400E00                                                                                                                                                                                                         | English(I)                                                             | 2/2               |       | General Education           | 400F00 | English(II)                                     | 2/2             |                 |
| General Education                  | 43500D                                                                                                                                                                                                         | Community Service & Learning(1)                                        | 0/1               |       | General Education           | 43500E | Community Service & Learning(2)                 | 0/1             |                 |
| General Education                  | 400A00                                                                                                                                                                                                         | physical education (1)                                                 | 1/2               |       | General Education           | 400B00 | physical education (2)                          | 1/2             |                 |
| General Education                  | 300A00                                                                                                                                                                                                         |                                                                        | 2/2               |       | General Education           | 300B00 | General Courses (II)                            | 2/2             |                 |
| Major Required                     | 435601                                                                                                                                                                                                         | Physics (1)                                                            | 3/3               |       | Major Required              | 435A79 | Contemporary Taiwan and Modern World            | 2/2             |                 |
| Major Required                     | 435604                                                                                                                                                                                                         | Calculus (1)                                                           | 3/3               |       | Major Required              | 435602 | Physics (2)                                     | 3/3             |                 |
| Major Required                     | 435A50                                                                                                                                                                                                         | Introduction to Civil Engineering and Geomatics                        | 1/1               |       | Major Required              | 435603 | Laboratory of Physics                           | 1/2             |                 |
| Major Required                     | 435A51                                                                                                                                                                                                         | Fundamental Mathematics Drilling                                       | 1/2               |       | Major Required              | 435605 | Calculus (2)                                    | 3/3             |                 |
| Major Required                     | 435606                                                                                                                                                                                                         | Chemistry                                                              | 3/3               |       | Major Required              | 435A53 | Engineering Material                            | 2/2             |                 |
| Major Required                     | 435018                                                                                                                                                                                                         | Labor education (1)                                                    | 0/1               |       | Major Required              | 435A81 | Engineering Mechanics                           | 2/2             |                 |
| Major Required                     | 435013                                                                                                                                                                                                         | All-out Defense Education Military Training - International Situations | 0/2               |       | Major Required              | 435005 | Computational Thinking and Creative Programming | 2/3             | Computer Course |

|                             |        |                                  |                 |                 |                              |        |                                                                   |                 |                 |
|-----------------------------|--------|----------------------------------|-----------------|-----------------|------------------------------|--------|-------------------------------------------------------------------|-----------------|-----------------|
| Major Elective              | 435012 | Morality and Professional Ethics | 2/2             |                 | Major Required               | 435019 | Labor education (2)                                               | 0/1             |                 |
| Major Elective              | 435N50 | Career student Counselling       | 2/2             |                 | Major Required               | 435014 | All-out Defense Education Military Training -Defense Mobilization | 0/2             |                 |
|                             |        |                                  |                 |                 |                              |        |                                                                   |                 |                 |
| 22 Credits, 28 Hours        |        |                                  |                 |                 | 22 Credits, 29 Hours         |        |                                                                   |                 |                 |
| First Semester, Second Year |        |                                  |                 |                 | Second Semester, Second Year |        |                                                                   |                 |                 |
| Course                      | Course | Course Name                      | Credits / Hours | Notes           | Course                       | Course | Course Name                                                       | Credits / Hours | Notes           |
| General Education           | 400G00 | English(III)                     | 2/2             |                 | General Education            | 400H00 | English (IV)                                                      | 2/2             |                 |
| General Education           | 400C00 | Physical Education (III)         | 1/2             |                 | General Education            | 400D00 | physical education (4)                                            | 1/2             |                 |
| General Education           | 300C00 |                                  | 2/2             |                 | General Education            | 300D00 | General Courses (IV)                                              | 2/2             |                 |
| Major Required              | 435607 | Programming Language             | 2/3             | Computer Course | Major Required               | 435003 | Practical Chinese                                                 | 2/2             |                 |
| Major Required              | 435A54 | Material Testing                 | 1/3             |                 | Major Required               | 435004 | Human Rights and Legal Education                                  | 2/2             |                 |
| Major Required              | 435A55 | Project Management and Practice  | 1/3             |                 | Major Required               | 435A61 | Theory of Structures(1)                                           | 3/3             |                 |
| Major Required              | 435A56 | Mechanics of Materials           | 2/2             |                 | Major Required               | 435A62 | Reinforced Concrete(1)                                            | 3/3             |                 |
| Major Required              | 435A57 | Surveying                        | 2/2             |                 | Major Required               | 435A63 | Theory and Practice for Protioning Concret Mixing                 | 1/3             |                 |
| Major Required              | 435A58 | Surveying Practice               | 1/3             |                 | Major Required               | 435A65 | Drawing Engineering(2)                                            | 1/3             | Computer Course |
| Major Required              | 435A59 | Engineering drawing (1)          | 1/3             | Computer Course | Major Required               | 435A80 | Engineering Mathematics(1)                                        | 3/3             |                 |
| Major Required              | 435A85 | Numerical Methods                | 2/2             | Computer Course | Major Elective               | 435R33 | Engineering Surveying                                             | 2/2             |                 |
| Major Elective              | 435N51 | Originality Thinking Training    | 2/2             |                 |                              |        |                                                                   |                 |                 |
|                             |        |                                  |                 |                 |                              |        |                                                                   |                 |                 |
| 19 Credits, 29 Hours        |        |                                  |                 |                 | 22 Credits, 27 Hours         |        |                                                                   |                 |                 |
| First Semester, Third Year  |        |                                  |                 |                 | Second Semester, Third Year  |        |                                                                   |                 |                 |
| Course                      | Course | Course Name                      | Credits / Hours | Notes           | Course                       | Course | Course Name                                                       | Credits / Hours | Notes           |
| Major Required              | 435A68 | Construction Management Practice | 1/3             |                 | Major Required               | 435A70 | Soil Mechanics Testing                                            | 1/3             |                 |
| Major Required              | 435A83 | Soil Mechanics                   | 3/3             |                 | Major Required               | 435A71 | Computer Applications in Engineering                              | 2/2             | Computer Course |
| Major Required              | 435A84 | constraction drawing             | 2/2             |                 | Major Required               | 435A72 | Foundation Engineering                                            | 2/2             |                 |
| Major Elective              | 435N53 | Theory of Structures (2)         | 3/3             |                 | Major Elective               | 435N62 | Concrete Technology of Construction                               | 2/2             |                 |
| Major Elective              | 435N54 | Reinforced Concrete(2)           | 3/3             |                 | Major Elective               | 435N63 | Occupational health and safety                                    | 2/2             |                 |
| Major Elective              | 435N56 | Road Engineering                 | 2/2             |                 | Major Elective               | 435N65 | Construction Provisions                                           | 2/2             |                 |
| Major Elective              | 435N60 | Foundation Construction          | 2/2             | Computer Course | Major Elective               | 435N66 | Structural Steel Design                                           | 3/3             |                 |
| Major Elective              | 435N61 | Building Information Model       | 2/2             | Computer Course | Major Elective               | 435N68 | Pavement Technology                                               | 2/2             |                 |

|                             |        |                                                 |                 |                 |                              |        |                                                                           |                 |                 |
|-----------------------------|--------|-------------------------------------------------|-----------------|-----------------|------------------------------|--------|---------------------------------------------------------------------------|-----------------|-----------------|
| Major Elective              | 435009 | Summer Off-campus Internship                    | 2/2             |                 | Major Elective               | 435014 | Topographic Surveying                                                     | 2/2             |                 |
| Major Elective              | 435013 | Cadastral Surveying                             | 2/2             |                 | Major Elective               | 435020 | Three-dimensional visual design (1)                                       | 3/3             | Computer Course |
| Major Elective              | 435018 | UAV design and implementation                   | 3/3             |                 | Major Elective               | 435R20 | Global Navigation Satellite System                                        | 2/2             |                 |
| Major Elective              | 435R16 | Engineering Mathematics(2)                      | 2/2             |                 | Major Elective               | 435R22 | Engineering Geology                                                       | 3/3             |                 |
| Major Elective              | 435R17 | Fluid Mechanics                                 | 2/2             |                 | Major Elective               | 435R26 | Hydrology                                                                 | 2/2             |                 |
| Major Elective              | 435R43 | Environmental Engineering                       | 2/2             |                 | Major Elective               | 435R27 | Basic Professional Counseling                                             | 3/3             |                 |
|                             |        |                                                 |                 |                 |                              |        |                                                                           |                 |                 |
| 31 Credits, 33 Hours        |        |                                                 |                 |                 | 31 Credits, 33 Hours         |        |                                                                           |                 |                 |
| First Semester, Fourth Year |        |                                                 |                 |                 | Second Semester, Fourth Year |        |                                                                           |                 |                 |
| Course                      | Course | Course Name                                     | Credits / Hours | Notes           | Course                       | Course | Course Name                                                               | Credits / Hours | Notes           |
| Major Required              | 435012 | English Proficiency qualification               | 0/2             |                 | College Major                | 40TND9 | Interdisciplinary program learning                                        | 0/1             |                 |
| Major Required              | 435A74 | Practical Project                               | 2/3             |                 | College Major Required       | 40TNF1 | Interdisciplinary Micro Course Program for Engineering Digital Technology | 0/1             |                 |
| Major Required              | 435A75 | Engineering Statistics                          | 2/2             |                 | Major Required               | 435A76 | Analysis of Mechanics Testing                                             | 1/3             |                 |
| Major Required              | 435A82 | Structural Steel Design                         | 3/3             |                 | Major Required               | 435A77 | Professional ability test                                                 | 0/2             |                 |
| Major Elective              | 435N70 | Prestressed Concrete                            | 3/3             |                 | Major Elective               | 435N76 | Geographic Information System                                             | 2/2             | Computer Course |
| Major Elective              | 435N72 | Foundation Construction                         | 2/2             |                 | Major Elective               | 435N77 | Introduction of Earth Quake Engineering                                   | 2/2             |                 |
| Major Elective              | 435N74 | Methods of Civil Engineering                    | 2/2             |                 | Major Elective               | 435N79 | Structural Steel Engineering                                              | 2/2             |                 |
| Major Elective              | 435N75 | Construction Estimates and Costs                | 2/2             |                 | Major Elective               | 435N80 | Tunnel Engineering                                                        | 3/3             |                 |
| Major Elective              | 435010 | Semester Off-Campus Internship(1)               | 9/9             |                 | Major Elective               | 435N81 | Introduction of Deep Excavation Engineering                               | 2/2             |                 |
| Major Elective              | 435015 | The Adjustment of Surveying                     | 3/3             |                 | Major Elective               | 435011 | Semester Off-Campus Internship(2)                                         | 9/9             |                 |
| Major Elective              | 435017 | Remote Sensing                                  | 2/2             | Computer Course | Major Elective               | 435016 | Geodetic Surveying(Including Practice)                                    | 3/3             |                 |
| Major Elective              | 435R21 | Conservation of Water and Soil Project          | 2/2             |                 | Major Elective               | 435019 | UAV control and verification                                              | 2/2             |                 |
| Major Elective              | 435R23 | Construction Contracts and Technical Provisions | 2/2             |                 | Major Elective               | 435R24 | Hillside Developing Engineering                                           | 3/3             |                 |
| Major Elective              | 435R28 | Professional Professional Counseling            | 3/3             |                 | Major Elective               | 435R29 | Advanced Professional Counseling                                          | 3/3             |                 |
| Major Elective              | 435R31 | Patent Research and Development Practice        | 2/2             |                 | Major Elective               | 435R32 | quality management                                                        | 2/2             |                 |
|                             |        |                                                 |                 |                 |                              |        |                                                                           |                 |                 |
| 39 Credits, 42 Hours        |        |                                                 |                 |                 | 34 Credits, 40 Hours         |        |                                                                           |                 |                 |