




CIVIL ENGINEERING TECHNOLOGY PROGRAM





Open Registration

The Civil Engineering Technology Program at the School of Engineering and Technology - Duy Tan University provides a solid foundation in civil engineering and hands-on experience with modern construction techniques, preparing students for careers in designing, constructing and managing building projects.

Advantages of our Program

- Hands-On Experience 
- Industry Partnerships 
- Cutting-Edge Curriculum 

ENROLL NOW

-  Rm 101 B - Hoa Khanh Nam, Danang
-  (+84) 935551869 - 974451806

Visit Our Website

<https://set.duytan.edu.vn/>



MISSION OF THE SCHOOL OF ENGINEERING & TECHNOLOGY

The mission of the School of Engineering and Technology at Duy Tan University is to commit to providing graduates with the necessary knowledge, skills, and adaptability for professional and research works in the field of engineering and technology, thereby fulfilling both global and local workforce demands



PROGRAM EDUCATIONAL OBJECTIVES of the Civil Engineering Technology Program

① Exemplary Engineering Practices

Develop civil engineering technology solutions for local and global challenges.

② Successful Career Paths

Achieve successful employment in the civil engineering technology industry or related fields.

③ Continuous Learning

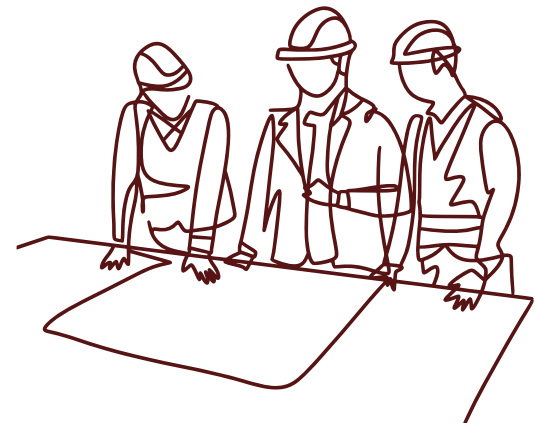
Expand knowledge and capabilities through continuing education, advanced graduate study, or other lifelong learning experiences



STUDENT OUTCOMES of the Civil Engineering Technology Program



1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline
3. an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
4. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes
5. an ability to function effectively as a member as well as a leader on technical teams.





STUDENT ADMISSION REQUIREMENTS

- ✔ Successfully Passing the Vietnam Ministry of Education & Training's High School Graduation Examination
- ✔ Achieving either of:
 - ❑ The Minimum Passing Grade for National College Entrance from the High School Graduation Examination as Required by the Ministry of Education & Training of Vietnam
 - ❑ Minimum total grade of 18 out of 30 points for three courses in the National College Entrance Exam for certain undergraduate disciplines as specified by the Ministry of Education & Training of Vietnam.
- ✔ Register with Duy Tan University before October 31st of the intake year, while freshman slots are still available.



Apply
Now!



1. FUNDAMENTAL KNOWLEDGE IN CIVIL ENGINEERING

CIE 111 – Technical Drawing & Cad **3 credits (2 + 1)**

The course provides learners with the regulations of the state regarding technical drawings. It covers the method of representing objects on technical drawings using orthogonal projection. It also covers the method of representing three-dimensional objects using measurement projections and perspective projections. Besides, the course also provides learners with the instructions on how to use AutoCAD software to support the design and representation of drawings by computer.

FST 342 – Civil Engineering Design Software **3 credits (2 + 1)**

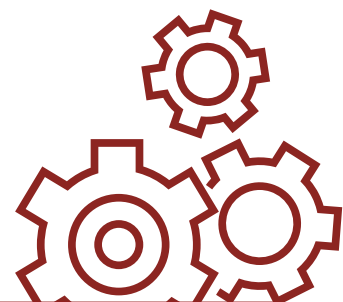
The course helps learners become familiar with some application software for construction majors. The content of the course includes theoretical foundations to the practice of some construction problems commonly encountered in practice. Specialized software taught includes: ETABS (high-rise building design calculations) or advanced SAP 2000 (bridge design calculations), PLAXIS (geotechnical calculations).

CIE 211 – Advanced CAD **2 credits (1 + 1)**

The course provides knowledge on using AutoCAD software, including setting up, editing, and managing technical construction drawings. Arrange layouts, present drawings professionally, and master the drawing environment.

CIE 260 – Geodesy 3 credits (2+1)

The course equips learners with basic knowledge of surveying, projection in surveying, principles of measuring basic elements and errors in measurement, and types of surveying problems. Detailed measuring and drawing work and project layout. The course also covers main parts: describe the structure and features of various types of tools (ruler, odometer), surveying machines (levelling machine, electronic theodolite); Use surveying machines to practice measuring basic elements in surveying such as: measuring level angles, slope angles, measuring direct and indirect side lengths, measuring elevation differences. Practice project layout work.





2. FUNDAMENTAL KNOWLEDGE IN MECHANICS

MEC 201– Engineering Mechanics: Statics **2 Credits**

Statics deals with the study of the conditions under which rigid bodies are in a state of static equilibrium. This course provides the fundamental principles and tools for the analysis of structures.

MEC 202– Engineering Mechanics: Dynamic **2 Credits**

Kinematics and kinetics principles of rigid-body are introduced. This course emphasizes on the analysis of bodies in plane motion.

MEC 306– Structural Mechanics 1 (including SAP) **4 credits (3+1)**

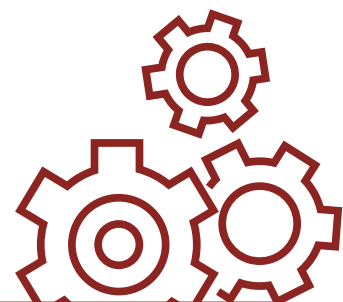
This course will provide the student with a brief presentation of the theory and application of structural analysis as it applies to beams, trusses, frames... Emphasis is placed on developing the student's ability to both model and analyze a structure and to provide realistic applications encountered in professional practice. This course also will provide the student with the practical knowledge and basic steps of performing a structural analysis using SAP2000 software package.

MEC 212– Mechanic of material 2 **2 Credits**

This course continues the development of stress-strain analysis techniques for structural members in mechanical systems. The course also introduces students to theories of failure for static load conditions and the design of machinery components. The course concludes with the analysis of indeterminate beams, the buckling stability of columns and an introduction of energy methods.

MEC 211– Mechanic of material 1 **3 Credits**

The course provides students with basic knowledge related to the design and calculation of basic components of structures and works by using simple mechanical models. The course also shows how to establish formulas and conditions for their use to apply to the analysis and design of structural and mechanical parts.





2. FUNDAMENTAL KNOWLEDGE IN MECHANICS

MEC 307– Structural Mechanics 2 **2 Credits**

This course provides students with fundamental theoretical knowledge of force methods and displacement methods for determining internal forces and displacements in statically indeterminate structures under various loading conditions.

HYD 201 – Hydraulics **3 credits (2+1)**

This course covers the study and application of the fundamental principles of fluid mechanics. The course focuses in the static, kinematic and dynamic analysis of fluids in civil engineering systems. Application of momentum, energy and continuity principles to the analysis of incompressible flow applications. The course concludes with the analysis of viscous flows in pipes and open channels. This course is also composed of a set of selected experiments about general fluid mechanics. The Lab experiments study the basic phenomena and principles of fluid mechanics.

MEC 316 – Soil Mechanics **3 credits (2+1)**

This course covers fundamental topics of soil mechanics: soil properties and soil behaviors as related to problems encountered in engineering structures, Consolidation, Shear strength, Stability Analysis, and Lateral earth pressures.

This course also provides students with comprehensive guidance and resources to understand soil properties and behavior. It covers various topics, including: Particle Size Analysis; Moisture Content, Density (Specific Weight) of soil; Atterberg Limits (Liquid limit test, Plastic limit test); Consolidation Test; Direct Shear Test; Unconfined Compression Test; Standard Proctor Compaction test. The course also emphasizes soil mechanics principles, experimental testing methods, and effective data interpretation and presentation.





3. ARCHITECTURE KNOWLEDGE

ARC 392 – Architectural Design for Building 3 credits (2 + 1)

The course equips students with practical application theories into specific projects such as the functional chain of a small and medium-sized civil project, functional chains, and the arrangement of traffic flows in functional areas, zoning functions, and their relationships.

The course provides students with basic knowledge of architectural design principles, solutions, and standards. Understand experimental research methods. Analyze, research, and develop specific solutions under each design condition.

The project will focus on studying the design of public or private buildings. Help students master the functional layout and organization of architectural spaces to ensure the effectiveness of activities. The types of buildings studied include public buildings with research, educational, and community living functions, such as kindergartens, elementary schools, etc.



4. MATERIAL KNOWLEDGE

CIE 321 – Building Materials –2 Credits

The course presents fundamental knowledge about the concepts and formulas for calculating basic physical properties, principles of quality assessment, advantages and disadvantages, and the scope of use of traditional construction materials such as natural stone, ceramics, cement, concrete, mortar, steel, bitumen, and wood.

CIE 322 – Building Materials – 1 Credit

The course covers methods of sampling, testing techniques, and technical requirements for various construction materials such as cement, sand, stone, concrete, and steel according to current standards.

CIE 371 – Advanced Building Materials 2 Credits

The Advanced Building Materials course presents expanded knowledge about fired and non-fired materials, special types of concrete such as lightweight concrete, high-strength concrete, roller-compacted concrete, etc., and some new products of insulating materials, paint materials, composite materials, and plastic materials.





5. STRUCTURE KNOWLEDGE

CIE 376 – Reinforced Concrete Structures 3 Credits

This course covers fundamental concepts, advantages, disadvantages, and the physical properties of reinforced concrete (RC), the principles of construction, and the calculation of basic RC components: flexural, combined flexural and torsional, and axial compression according to Load and Resistance Factor Design (LRFD) and Allowable Stress Design (ASD) methods. Additionally, the course provides a concise introduction to prestressed concrete structures.

CIE 377 – Reinforced Concrete Structure Project 1 Credit

This course provides students with fundamental knowledge in designing components of a monolithic reinforced concrete frame and slab system. In this context, the floor slab and secondary beams are designed using the elastic deformation method, while the main beams are designed using the elastic analysis method. Through this, students are able to create drawings of the details of slab, secondary beams, and main beams.

CIE 426 – Reinforced Concrete Building Structures – 3 Credits

The course covers the principles of designing reinforced concrete structures, the design and calculation of various reinforced concrete roof structures (roof beams, trusses, vaults), the design and calculation of one-story prefabricated industrial building frames, the design and calculation of low-rise building frames (monolithic and prefabricated), the design and principles of calculating high-rise buildings (monolithic and prefabricated), and the design and calculation of reinforced concrete foundations.

CIE 427 – Reinforced Concrete Building Structure Project – 1 Credit

The course covers the structure of components in a single-story prefabricated industrial building, the principles of selecting dimensions for various components such as the roof, roof support structure, roof openings, crane beams, determining preliminary dimensions for the horizontal frame of the industrial building, principles of load calculation, internal force analysis, combination of internal forces, calculation of reinforcement for the frame columns of the single-story prefabricated industrial building, the structure of the bracing system in industrial buildings, and the principles of presenting structural drawings for industrial buildings.





5. STRUCTURE KNOWLEDGE

CIE 428 – Steel Building Structures **2 Credits**

The course "Steel Structure Building" provides students with basic knowledge about calculating dimensional parameters, loads and designing some basic parts of steel structures such as: industrial buildings, large span houses, high-rise buildings.

CIE 429 – Steel Building Structure Project **1 Credit**

The course "Steel Structure Building Design Project" provides students with the knowledge and skills needed to calculate dimensions, loads, internal forces, and design the lateral frame of a lightweight single-story industrial building made of steel.

CIE 477 – Pre-stress reinforced concrete structures – 2 Credits

The course "Prestressed Concrete Structures" provides students with fundamental knowledge about the principles of prestressed concrete technology, various methods of analyzing and calculating basic structural elements such as simple beams, continuous beams, slabs with beams, and columns.

CIE 475 – High-rise Building Structures **2 Credits**

This course covers various topics related to structural engineering and includes calculations for retaining walls (both monolithic and modular), liquid storage tanks (rectangular and circular), bunkers, and silos. Additionally, the course addresses the design of thin shell structures, methods for determining internal forces and displacements in elastic thin shells (according to elasticity theory). It also explores the principles and construction of dome shells, two-dimensional curved shells with rectangular planar faces, and rotational curved shells.

CIE 471 – Specialized reinforced concrete structures – 2 Credits

The course covers topics related to the calculation of retaining walls, both solid and modular, liquid storage tanks, calculations for rectangular and circular tanks, bunker and silo calculations. Additionally, the course also discusses the structural analysis of thin-shell roofs, methods for determining internal forces and displacements in elastic thin-shell structures (according to the theory of elasticity). Principles of calculation and the construction of shell roofs, two-dimensional curved shell roofs with rectangular plan, and rotating circular shell roofs are also presented in the course.





6. CONSTRUCTION AND PROJECT MANAGEMENT

FIN 441 – Construction Cost Estimate **2 Credits**

The course provides fundamental knowledge about construction cost estimation. It covers methods for quantity surveying, creating construction cost estimates following current regulations, and using software for cost estimation.

FIN 442 – Construction Investment Project **2 Credits**

The course provides fundamental knowledge about construction investment project. It covers methods for setting up important contents of construction investment project document, especially financial and economic analysis.

CIE 404 – Construction Management **2 Credits**

The course provides fundamental knowledge in construction organization, construction scheduling, construction organization using the assembly line method, scheduling calculations based on network diagrams, and basic knowledge of construction site layout.

CIE 431 – Assembly Techniques for Civil & Industrial Building – 3 Credits

The course provides students with fundamental knowledge in the field of assembly techniques for civil and industrial construction, including suspension and anchoring techniques, equipment selection for assembly, and assembly techniques. Additionally, the course also covers knowledge related to construction finishing and completion work.

CIE 433 – Civil and Industrial Construction Management – 3 Credits

The course provides fundamental knowledge in construction organization, construction scheduling, construction organization using the assembly line method, scheduling calculations based on network diagrams, and basic knowledge of construction site layout.

CIE 432 – Assembly Techniques for Civil & Industrial Building Project – 1 Credit

The course provides knowledge for calculating and designing technical methods for suspending structural components, selecting the appropriate crane for assembly, developing technical methods, and organizing the construction assembly of a project. The outcomes of this course include a design report and construction method drawings.

CIE 434 – Civil and Industrial Construction Management Project – 1 Credit

The course provides comprehensive and systematic knowledge for designing methods to organize the construction of civil or industrial projects, including designing the overall construction schedule, designing the construction site layout, and planning the supply and use of materials.

CIE 435 – Construction Equipment **1 Credit**

The course provides students with an overview of the types of machinery used in the construction industry. It includes groups of machines such as earthmoving equipment, concrete work machines, lifting machines, foundation construction equipment, and specialized road and bridge construction machinery.

CIE 441 – Construction project management **2 Credits**

This course aims to provide students with a comprehensive understanding of project management principles, including project scheduling, cost estimation, risk management, quality control, and resource allocation. Through a combination of theoretical instruction and practical applications, students will learn to use industry-standard tools and techniques to ensure successful project delivery, meeting both client requirements and regulatory standards.



7. CDIO PROJECT

CIE 296 – CDIO Project 296 – 1 Credit

Project CDIO 296 (in which: Conceive – Idea generation; Design – Idea/Product design; Implement – Implement/Deploy Idea/Product; Operate – Operate the Product/Project). Students are assigned the task of designing and building a bridge model, fully implementing the C–D–I–O steps.

CIE 396 – CDIO project 396 – 1 Credit

Project CDIO 396 (in which: Conceive – Conceptualize; Design – Design Idea/Product; Implement – Implement/Deploy Idea/Product; Operate – Operate Product/Project) is a compulsory course for Civil Engineering students at Duy Tan University. The subject requires students to form ideas to solve practical construction problems, apply learned professional knowledge to practice designing and manufacturing models of construction products.

CIE 446 – CDIO projec 446 – 1 Credit

In this course, students are guided to undertake a creative project in the field of construction following the complete CDIO approach, comprising all four steps. Through this course, students become familiar with construction, problem-solving skills, teamwork, communication skills, and the ability to present scientific and technical issues.



8. GRADUATION

CIE 498 – Internship for Graduation 2 Credits

After completing their specialized coursework at the university, students undergo internships in the role of technical officers at real companies, engaging in construction activities. Through the internship process, learners apply their knowledge to carry out practical production tasks in various capacities, such as operations management, design consultancy and supervision as engineers, and direction of new construction, renovation, or maintenance of civil, industrial, bridge, and road construction projects.

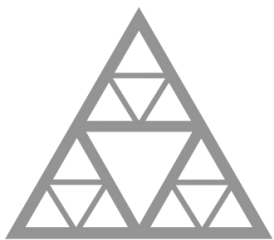
CIE 497 – Graduation Project 8 Credits

As the concluding component of the academic program, the Graduation Project is designed to consolidate the knowledge and skills of students for executing a construction project in their chosen field of study. The project is expected to help students consolidate basic knowledge while gaining advanced know-hows in their areas of specialty through self-training and lifelong study. The project also encourages students to work independently as well as to collaborate closely with their supervisor(s) and colleagues in the industry so as to enhance their expertise, communication skills, and vision in the field of Civil Engineering Technology for later career development.



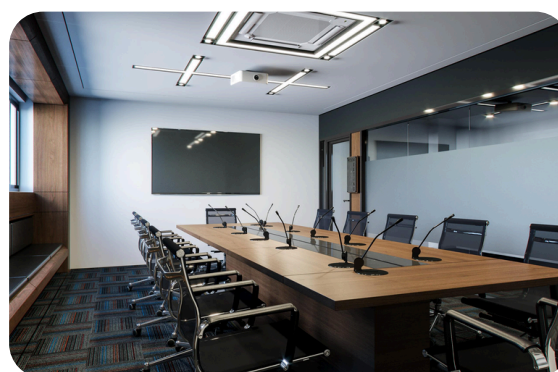
INDUSTRY PARTNERSHIPS

OF THE CIVIL ENGINEERING TECHNOLOGY PROGRAM



École des Ponts
ParisTech





**“
CAMPUS LIFE
”**

