

Associate in Applied Science in CONSTRUCTION MANAGEMENT

Curriculum by Semester

The College will grant an associate in applied science degree (AAS) with a major in construction management technology upon satisfactory completion of the required 64 credits listed.

FIRST SEMESTER		Credits
CMCE 1104	Statics & Strength of Materials I ¹	2
CMCE 1110	Construction Drawings	2
CMCE 1114	Methods & Materials of Construction I	3
CMCE 1152	Surveying	3
MAT 1275 ¹	Intro to Mathematical Analysis	4
ENG 1101	English Composition I	3
Subtotal		17
SECOND SEMESTER		
CMCE 1204	Statics & Strength of Materials II	3
CMCE 1220	Construction Management I	3
CMCE 1224	Methods & Materials of Construction II	2
CMCE 1255	Computer Applications in Civil Engineering Technology	3
PHYS 1433	Physics 1.2	4
Subtotal		15
THIRD SEMESTER		
CMCE 2306	Materials Testing Laboratory	2
CMCE 2315 ³	Elements of Structural Design-Steel ²	3
CMCE 2452	Structural Drawings (CAD)	2
CMCE 2320	Construction Management II	3
LAP ²	Literature/Aesthetics/Philosophy	3
ENG 121 or 133	Communications	3
Subtotal		16
FOURTH SEMESTER		
CMCE 2412	Construction Estimating	2
CMCE 2415 ³	Elements of Structural Design-Concrete ²	3
CMCE 2419	Building Service Systems	2
CMCE 2420	Construction Management III	2
MAT 1375 ¹	Mathematical Analysis	4
BS/SS ²	Behavioral Science/Social Science	3
Subtotal		16
TOTAL CREDITS REQUIRED FOR THE DEGREE		64

NOTES:

1 Students without the requisite math background to enter MAT 1375 will be required to take MAT 1175 and/or MAT 1275 in preparation. This will increase the number of required credits for the degree by up to eight.

2 See the college catalog for detailed explanation of core required courses and categories.

3 See the course descriptions for an important message regarding these courses.

COURSE DESCRIPTIONS:

CMCE 1104

Statics & Strength of Materials I

2 cl hrs, 2 cr

This course provides an introduction into the basic theory necessary for structural analysis and design. It emphasizes the use of standard charts and tables in conjunction with a calculator, for the solution of elementary Statics and Strength of Materials problems. The concepts of force, stress, strain and equilibrium are explored in depth. Student projects include the use of a desktop computer programs.

Pre- or corequisite: MAT 1175

CMCE 1110

Construction Drawings

1 cl hr, 2 lab hrs, 2 cr

This course will introduce the student to the basic drafting techniques that are required in the construction field. Students will learn the proper use of drafting equipment. Students will develop an understanding of architectural working drawings relating to wood frame residential buildings and commercial buildings and their use in construction projects. Topics include drafting techniques and equipment, lettering, line work, geometric constructions, site plans, foundation drawings, floor plans, electrical, plumbing and heating/air conditioning plans.

CMCE 1114

Materials & Methods of Construction I

2 cl hr, 3 lab hrs, 3 cr

This course introduces the student to wood and masonry construction and the study of modern building techniques. The student applies the theory through the construction of a scaled detailed project of a residential dwelling. In addition, the student will be introduced to the basic principles of construction management.

CMCE 1152

Surveying

1 cl hr, 4 lab hrs, 3 cr

This course enables students to perform actual surveying work using traditional surveying equipment. Fundamental theory of plane surveying, surveying procedures including measurements of distances, elevations and direction are studied. Principles and use of field equipment, including tapes, levels, transits, theodolites and electronic distance meters (EDM), field and office work, including traverses, topographic surveys and mapping, construction surveys, earthwork computations, stadia, note-keeping and office calculations.

Pre- or corequisites: MAT 1275, CMCE 1110

CMCE 1204

Statics and Strength of Materials II

3 cl hr, 3 cr

This course is a continuation of CT104, and provides additional theory necessary for structural analysis and design. Engineering concepts for shear and bending moment diagrams, section properties, beam analysis and truss analysis are explored in depth. Student projects include the use of a desktop computer for the solution of beam analysis, section properties, and trusses.

Prerequisite: CMCE 1104

CMCE 1220

Construction Management I

3 cl hrs, 3 cr

This course introduces the student to the basic practice of construction management and is designed to give the student a thorough understanding of the construction process. Topics covered will include the discussion of the design and construction process, types of contracts, responsibilities of participating parties, zoning and building codes, specifications and drawings, construction bidding and award of contracts, law and labor relations, risk allocation and liability sharing.

Prerequisites: CMCE 1110, CMCE 1114, CUNY certification in reading and writing

CMCE 1224

Materials & Methods of Construction II

1 cl hr, 2 lab hrs, 3 cr

This course provides the student with an understanding of the three major categories of construction: foundations, substructure and superstructure. Topics will include cast-in-place and precast concrete frame construction, masonry stone construction, steel frame construction, glass and glazing and curtain wall construction systems.

Prerequisites: CMCE 1110, CMCE 1114, CUNY certification in reading and writing

CMCE 1255

Computer Applications in Civil Engineering Technology

2 cl hrs, 2 lab hrs, 3 cr

This course provides a working knowledge of computers and their application in the fields of Construction and Civil Engineering. Topics include microcomputer systems and attendant hardware, computer terminology, disk operating system (DOS & Windows), word processing programs, spreadsheets and presentation software. Visual basic is also introduced in this course.

Pre- or corequisites: MAT 1275, CMCE 1104, certification in reading and writing

CMCE COURSES continued:

CMCE 2306

Materials Testing Laboratory

1 cl hr, 2 lab hrs, 2 cr

This course will explore the mechanical properties of steel, timber and concrete through laboratory testing. Standard tension, compression, shear, torsion, ductility and bending tests are performed in accordance with ASTM standards. Principles of field inspection of fresh concrete are covered as well. Students are given the opportunity to earn certification by the American Concrete Institute as "Field Inspectors, Level 1, of Fresh Concrete."

Pre- or corequisites: CMCE 2315 or CMCE 2415, CUNY certification in reading and writing

CMCE 2315

Elements of Structural Design–Steel

3 cl hrs, 3 cr

This course provides a working knowledge of the basic concepts encountered in the analysis and design of structural steel elements. The American Institute of Steel Construction (AISC) specifications for the design, fabrication and erection of structural steel for buildings are studied particularly as they apply to the design of beams, columns and connections. Analysis methods and procedures are developed for solving practical problems.

Prerequisite: CMCE 1204; Note: Students should not register for both CMCE 2315 and CMCE 2415 simultaneously without departmental approval.

CMCE 2452

Civil Engineering Drawing (AUTOCAD)

1 cl hr, 3 lab hrs, 2 cr

This course provides the students with a working knowledge of Computer Aided Drafting. Through the use of structural drawings for steel, wood and concrete, students build on their basic knowledge of both civil engineering and construction drawing principles and standards. Students will learn the sequence of commands and/or steps required to start, create, save and plot CAD drawings.

Prerequisites: CMCE 1110, CMCE 1252; pre- or corequisite: CMCE 2315 or CMCE 2415

CMCE 2320/CT 320

Construction Management II

3 cl hrs, 3 cr

This course introduces the student to site organization and management techniques that are required in construction project management. Students will gain a thorough understanding of all aspects of field supervision and contract administration. Topics will include field office setup, record keeping, reports, meeting minutes, change orders, measurement and payment, quality control, claims and disputes.

Prerequisites: CMCE 1110, CMCE 1114, CMCE 1220

CMCE 2412/CT 412

Construction Estimating

1 cl hr, 3 lab hrs, 2 cr

This course prepares the student to estimate the cost of various types of construction. A detailed material takeoff is made from typical construction documents. Pricing, including the cost of labor, material, equipment, subcontracts, overhead, contingencies and profit is discussed. Annually updated costs from Means' "Building Construction Cost Data" are used in preparing the cost estimate. Commercial computer software is used in this class.

Prerequisites: CMCE 1220, CMCE 1224

CMCE 2415

Elements of Structural Design–Concrete

3 cl hrs, 3 cr

This course provides a working knowledge of the basic concepts encountered in the analysis and design of reinforced concrete elements. The Building Code Requirements for Reinforced Concrete (ACI latest edition) is studied as it applies to the design and analysis of concrete beams, slabs, columns and footings for buildings. Analysis methods and procedures are developed and applied. Students will learn to use tables and select design aids for simple designs.

Prerequisite: CMCE 1204; Note: Students should not register for both CMCE 2315 and CMCE 2415 simultaneously without departmental approval.

CMCE 2419

Building Service Systems

2 cl hrs, 2 cr (spring only)

Analysis of plumbing, heating, ventilating, air conditioning and electrical equipment appropriate for residential and commercial-industrial buildings are explored. Modern methods and current equipment are emphasized.

Prerequisite: PHYS 1433

CMCE 2420

Construction Management III

1 cl hr, 2 lab hrs, 2 cr (spring only)

This course teaches current practices in preparing project schedules, including bar charts and Critical Path Method (CPM). Emphasis will be placed on using industry standard computer scheduling software.

Prerequisite: CMCE 2320