SCHOOL OF BUILDING CONSTRUCTION

The construction industry is among the largest in the United States, employing nearly seven million people and contributing 5 percent of the United States gross national product. The School of Building Construction (BC) at Georgia Tech offers one of the nation’s leading academic programs in building construction and is at the forefront of research in the built environment. The School’s mission is to be the hub of excellence for construction teaching, research, and service by promoting the development of an adaptive knowledge-based, sustainability-conscious industry framework. Supported by the pillars of project delivery, construction management, and facility management, the aim is to advance emerging construction practices, technology innovation, and integrated delivery systems. The School’s vision is to be a global leader in innovation and delivery of technological and methodological sustainability-focused advances for the construction and facility management industry through relevant, applied, and fundamental research. With a problem-focused approach to global outreach, the School will lead an expansion of our global footprint and influence to ensure that we are graduating good global citizens, and to ensure that our fundamental and applied construction research remains relevant at the local, regional, national, and international levels.

Employment prospects for BC students are excellent. Students are recruited by general contractors, residential home builders, project management firms, cost value and consulting firms, real estate and property development companies, building material suppliers, and local, state, and federal government agencies. The School offers a certificate in Construction Management for undergraduate students. The average starting salary for the BC graduate is among the highest for Georgia Tech alumni and ranks at the top of the industry. The School offers master’s degrees in Building Construction and Facility Management, Occupational Safety and Health, and Real Estate Development.

Students in the School of Building Construction learn the basic principles and practices of construction management, real estate development, science, and technology. BC students are educated on how to manage the functions and processes of every aspect of the construction industry. The business climate in Atlanta is vibrant and provides an excellent laboratory opportunity for students to observe various construction sites and activities. The construction companies in the Atlanta area also provide many internships and part-time jobs for students during their study in the BC program.

The Master of Science in Building Construction and Facility Management is accredited by the International Facility Management Association (IFMA) Foundation. The accreditation ensures the School continues to meet the standards set by the IFMA Foundation for quality facility management education.

Master’s Degree

- Master of Science in Building Construction and Facility Management (http://www.catalog.gatech.edu/programs/building-construction-facility-management-ms)
- Master of Real Estate Development (http://www.catalog.gatech.edu/programs/master-real-estate-development)

Doctoral Degree

- Doctor of Philosophy with a Major in Building Construction (http://www.catalog.gatech.edu/programs/building-construction-phd)

Certificate Programs

The School of Building Construction offers a certificate in Construction Management, which is available to students in all majors at Georgia Tech. The certificate is designed to provide a specialized education in evolving integrated management approaches to the delivery of built environment, from concept to implementation. The certificate exposes students to the multi-disciplinary nature of construction project development and management and introduces them to the latest technologies and processes developed to enhance interdisciplinary collaboration and integration.

Certificates will be granted only to students who, in addition to the certificate program requirements, have satisfied requirements for a Georgia Tech degree. Each certificate requires a minimum of twelve credit hours, at least nine of which are at the 3000 level or higher in the designated area. Courses required by a student’s program of study may not be credited by that student toward a certificate. Courses counting toward a certificate must be taken on a letter-grade basis, and a C or better must be received in each course.

Interested students should consult http://www.bc.gatech.edu/content/undergraduate-certificate and consult with an academic advisor for more details.

BC 1XXX. Bldg Construction Elect. 1-21 Credit Hours.
BC 2600. Construction Contracting. 3 Credit Hours.
The goal of this course is to teach students the basics of construction contracting, business methods, organizational models, bidding, construction insurance, and labor relations.
BC 2610. Construction Technology I. 3 Credit Hours.
An introduction to the planning and physical development process for the construction of projects of residential and light construction scale.
BC 2620. Construction Technology II. 3 Credit Hours.
A continuation of Construction Technology I with an emphasis on large-scale and high-rise building, i.e., commercial building construction.
BC 2630. Construction Seminar. 1 Credit Hour.
Provides an introduction to the construction industry with emphasis on exploring career opportunities in construction.
BC 2698. Undergraduate Research Assistantship. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.
BC 2699. Undergraduate Research. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.
BC 2XXX. Bldg Construction Elect. 1-21 Credit Hours.
BC 3600. Construction Cost Management. 3 Credit Hours.
Introduction to cost principles and cost analysis of construction projects, including classification of work, quantity survey techniques, construction operation costs, and bid proposals.
BC 3610. Construction Law. 3 Credit Hours.
Legal aspects of construction contracts, bonds, insurance, and bidding. Owner, architect, contractor, and subcontractor relationships.

BC 3620. Real Estate and Construction Finance and Accounting. 3 Credit Hours.
General introduction to the financing of construction and real estate development projects. Emphasis on financing requirements, activities, sources, and uses.

BC 3630. Project Management I. 3 Credit Hours.
This course will offer construction planning and management techniques for project design and construction with a focus on different scheduling methods and their use.

BC 3640. Construction Mechanics. 3 Credit Hours.
An introductory course to the evaluation of behavior of buildings, the properties of structural materials, and the behavior of load-resisting members.

BC 3XXX. Bldg Construction Elect. 1-21 Credit Hours.

BC 4050. Building Information Modeling for Multi-disciplinary Integration. 3 Credit Hours.
This course introduces students to BIM and the changes it has been causing to the traditional design, planning, management, construction, facility management, and contracting practices.

BC 4110. Trends & Pol For Res Dev. 3 Credit Hours.
An overview of development in the United States, current trends in residential development, and the impact of external factors on residential development. This course is designed to help Building Construction students understand how their development impacts the social environment and quality of life of the community.

BC 4120. Community Dsgn & Constr. 3 Credit Hours.
An overview of the principles of smart growth, livable communities and new urbanism and how these principles are implemented in the process from design to construction and marketing.

BC 4130. Intg Design Constr & Dev. 3 Credit Hours.
A study of contemporary examples of an integrated approach to design, construction and development. Course involves real-world project analysis from multiple points of view.

BC 4140. Construction Management Project. 3 Credit Hours.
This class is the application of course materials covered throughout the Certificate in Construction Management to an actual construction project with a simulated business construct.

BC 4600. Project Management II. 3 Credit Hours.
This course covers practical project management, technology, and tools for this approach and the required management skills for successful execution of projects.

BC 4610. Value Engineering and Building Economics. 3 Credit Hours.
First part is an introduction to principles and methodology. Second part is an introduction to economic principles and theories and how to apply the concepts and methods of building economics.

BC 4620. Building Structural Analysis. 3 Credit Hours.
Emphasis being placed on the practical design and construction of structural elements. The course includes basic design principles with a heavy emphasis on constructability and buildability.

BC 4630. Senior Capstone Project. 3 Credit Hours.
A senior construction project that includes redevelopment analysis and feasibility study, project development, and construction.

BC 4640. Construction Marketing. 3 Credit Hours.
Methods of construction marketing and business development. Innovative computer applications, verbal skills development, professional strategies, market segmentation, and buyer behavior.

BC 4650. Laboratory for Sustainable Design and Construction. 3 Credit Hours.
The goal of the laboratory is to teach students a comprehensive sustainable design and construction information system and a program of real-world, hands-on projects.

BC 4660. Entrepreneurship in Construction. 3 Credit Hours.

BC 4672. Mechanical, Electrical and Plumbing Systems for Construction Managers. 3 Credit Hours.
The course will cover the fundamentals of design, selection, installation, commissioning, and maintenance of mechanical, electrical and plumbing systems. Credit not allowed for both BC 4672 and BC4670.

BC 4680. Professional Internship. 3 Credit Hours.
Students work for a professional architecture/engineering/ construction company in which they learn, first-hand, about the construction industry.

BC 4699. Undergraduate Research Assistantship. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.

BC 4699. Undergraduate Research. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.

BC 4700. Construction Management. 3 Credit Hours.
An accelerated-pace course designed to provide a basic understanding of fundamental topics including planning, budgeting, estimation, scheduling, and project close out.

BC 4710. Green Construction. 3 Credit Hours.
This course focuses on the means, methods, strategies, and technologies to improve the energy efficiency and performance of buildings, and to reduce the environmental impact of buildings.

BC 4720. Residential Construction and Property Management. 3 Credit Hours.
A course designed to orient students to the basics of apartment management and includes the business functions of marketing, leasing, and financing.

BC 4730. Best Practices in Multi-Family Property. 3 Credit Hours.
A course designed to provide students with a broad range of the best practices related to the management of all types of multi-family residential property.

BC 4735. Real Estate Development and Construction. 3 Credit Hours.
Provides an overview of the real estate development process as it pertains to construction development including trends and current issues.

BC 4801. Special Topics. 1 Credit Hour.

BC 4802. Special Topics. 2 Credit Hours.

BC 4803. Special Topics. 3 Credit Hours.

BC 4823. Special Topics. 3 Credit Hours.

BC 4833. Special Topics. 3 Credit Hours.

BC 4843. Special Topics. 3 Credit Hours.
Topics of current interest in building construction.
BC 4900. Special Problems. 1-21 Credit Hours.

BC 4XXX. Bldg Construction Elect. 1-21 Credit Hours.

BC 6002. Issues in Sustainable Construction Technology. 3 Credit Hours.
Course designed to help students achieve a basic understanding of the materials used in the commercial segments in the construction industry and how these relate to sustainable construction.

BC 6004. Sustainable Energy in Architecture, Engineering and Construction. 3 Credit Hours.
An introductory course on sustainable energy in architecture, engineering and construction. The goal of the course is to introduce students to fundamental concepts of sustainable sources of energy to power buildings and address the impact of these sources to applicable green building rating systems.

BC 6005. Technology Applications in the Construction Industry. 3 Credit Hours.
Hands-on exploration of various present and Future technologies that can be applied in all stages of a facilities’ lifecycle.

BC 6025. Construction Management. 3 Credit Hours.
An accelerated paced course providing graduate students a basic understanding of fundamental topics including planning, budgeting, estimating, scheduling and project closeout.

BC 6050. Building Information Modeling for Multi-disciplinary Integration. 3 Credit Hours.
This course introduces students to BIM and the changes it has been causing to the traditional design, planning, management, construction, facilitation management, and contracting practices. Credit will not be awarded for both BC 4050 and BC 6050.

BC 6070. Professional Trends in Facility Management. 3 Credit Hours.
An introductory course covering the organizational, managerial, ethical, and legal principles for the delivery of facility management services. Includes contracts and risk management.

BC 6100. Professional Internship. 3 Credit Hours.
A course in which students work for a professional architecture/engineering/construction company in which they learn, first-hand, about the construction industry.

BC 6125. Professional Internship. 3 Credit Hours.
A course in which students work for a professional architecture/engineering/construction company in which they learn, first-hand, about the construction industry.

BC 6150. Design-Build Organization and Management. 3 Credit Hours.
Introduction to Design-Build (DB) as a project delivery system. Provides information about the organization, the process, and the effects of DB on the industry.

BC 6175. Real Estate Development and Construction. 3 Credit Hours.
Provides an overview of the real estate development process as it pertains to construction development including trends and current issues.

BC 6185. Introduction to Construction Program Management. 3 Credit Hours.
Survey of the construction program management profession, focusing on the comprehensive management of single and multiple building programs including pre-design, design, construction and post-construction activities.

BC 6200. Maintenance Management of Built Assets. 3 Credit Hours.
This course covers the processes by which a facility and its systems are serviced and maintained during the facility’s life cycle. Includes acquisition, installation, operation, maintenance, and disposal of built assets.

BC 6250. Value Management for Integrated Facility Design and Construction. 3 Credit Hours.
Principles and methodology of value management analysis concepts and an examination of future values and worth criteria affecting building design, construction, furnishings, and operations performance.

BC 6275. Community Dsgn & Constr. 3 Credit Hours.
An overview of the principles of smart growth, livable communities and new urbanism and how these principles are implemented in the process from design to construction and marketing.

BC 6285. Management of Pre-design Phase as Owner. 3 Credit Hours.
Examination of the Program Manager’s role and responsibilities as owner during the pre-design phase including feasibility, organization, financing, legal, entitlement, planning, budgeting, scheduling, and team selection.

BC 6300. Safety and Environmental Issues. 3 Credit Hours.
This course covers the environmental issues related to the performance of buildings and the health and risk factors for new and existing buildings.

BC 6350. Design and Construction Law. 3 Credit Hours.
Overview of construction law and legal issues encountered by the construction manager including U.S. laws, general concepts and definitions, contractor relationships, and relevant case studies.

BC 6375. Trends & Pol For Res Dev. 3 Credit Hours.
An overview of development in the United States, current trends in residential development, and the impact of governmental regulations on residential development. This course is designed to help Building Construction students understand how their development impacts the social environment and quality of life of the community.

BC 6385. Management of Design Phase as Owner. 3 Credit Hours.
Examination of the Program Manager’s role and responsibilities as Owner during the design phase.

BC 6400. Facility Planning, Project Management, and Benchmarking. 3 Credit Hours.
This course introduces the techniques of planning project management, benchmarking, and their applications to facility management. Includes space forecasting, scheduling and control of projects, and benchmarking studies.

BC 6500. Real Estate Asset and Income Property Management. 3 Credit Hours.
This course covers real estate financial management and performance topics from a decision making and strategic planning orientation for facilities management professionals.

BC 6550. Design and Construction Processes for Integrated Services. 3 Credit Hours.
Offers a framework for use and application of design, contract, and performance documents for successful execution of various forms of integrated project delivery systems.

BC 6575. Real Estate Production Finance. 3 Credit Hours.
Business model and financing process required to produce new real estate developments through an investigation of land acquisition, development and construction financial management.

BC 6585. Management of Construction as Owner. 3 Credit Hours.
Survey of construction management from the owner’s perspective.

BC 6600. Facilities Management Financial Analysis. 3 Credit Hours.
This course covers real property concepts, issues, and topics pertinent to the facility management professional. The topics include site selection, property market analysis, legal documents, and land use control.
BC 6650. Advanced Project Management. 3 Credit Hours.
A four-phased coverage of project management including organization, planning and scheduling, control, budgeting, and ending with project testing, evaluation, and termination.

BC 6675. Residential Design and Construction. 3 Credit Hours.
Course will examine the application of market, community, and regulatory factors to single family housing design and construction; construction management process required for efficient delivery.

BC 6685. Leadership and Communications in Design and Construction. 3 Credit Hours.
Framework and guidelines for effective leadership and communications during design and construction.

BC 6700. Advanced Facility Management Practices. 3 Credit Hours.
Students apply specific methods and procedures from core courses to actual business situations in the facility and property management industry.

BC 6731. Zero Energy Housing. 3 Credit Hours.
Design, analysis, operation, construction, and cost feasibility of so-called "zero energy" houses. Credit not allowed for both BC 6731 and ARCH 6731.

BC 6800. Facility and Property Management Capstone. 3 Credit Hours.
Designed to integrate the learning from basic topics through the use of actual case studies and situations found within the facility and property management industry.

BC 6850. Building Construction and Facility Management Capstone. 3 Credit Hours.
Application of coursework covered in the Master of Science in Building Construction and Facility Management curriculum with a stimulated business construct from different perspectives: construction manager, program manager, or facility manager.

BC 6875. Real Estate Development Capstone Project. 3 Credit Hours.
Formulation and exploration of a real estate development project. Topics include business plan, market analysis, site selection, regulations, finance, project delivery, design and engineering.

BC 6910. Best Practices in Multi-Family Property. 3 Credit Hours.
A course designed to provide students with a broad range of the best practices related to the management of all types of multi-family residential property.

BC 6920. Introduction to Residential Property Management. 3 Credit Hours.
A course designed to orient students to the basics of apartment management and includes the business functions of marketing, leasing, and financing.

BC 6930. Intg Design Constr & Dev. 3 Credit Hours.
This course will focus on contemporary integrated approach to design, construction and development. Course involves real-world project analysis from multiple points of view. Examples to be selected from the Atlanta region.

BC 6XXX. Bldg Construct Elective. 1-21 Credit Hours.

BC 7000. Master's Thesis. 1-21 Credit Hours.

BC 7100. Quantitative Methods for Construction Research. 3 Credit Hours.
Introductory course in graduate research in the building construction industry. Covers types of research, sampling methods, and basic analysis and evaluation techniques.

BC 7200. Advanced Readings in BC in Preparation for the PhD Comprehensive Examination. 1-12 Credit Hours.
This course is designed around advanced readings in research and practice for PhD students working in the building construction area.

BC 8000. PhD Seminar for Students with Building Construction Emphasis. 1 Credit Hour.
This is an introduction to PhD-level research in Building Construction.

BC 8100. Research Methodology. 3 Credit Hours.
Research design course that teaches the basics of creating credible scientific research plans with examples from construction related research.

BC 8803. Special Topics. 3 Credit Hours.

BC 8811. Special Topics. 1 Credit Hour.

BC 8812. Special Topics. 2 Credit Hours.

BC 8813. Special Topics. 3 Credit Hours.

BC 8814. Special Topics. 4 Credit Hours.

BC 8815. Special Topics. 5 Credit Hours.

BC 8823. Special Topics. 3 Credit Hours.

BC 8833. Special Topics. 3 Credit Hours.

BC 8843. Special Topics. 3 Credit Hours.

BC 8901. Special Problems. 1-21 Credit Hours.

BC 8902. Special Problems. 1-21 Credit Hours.

BC 8903. Special Problems. 1-21 Credit Hours.

BC 8997. Teaching Assistantship. 1-9 Credit Hours.
For graduate students holding graduate teaching assistantship.

BC 8998. Research Assistantship. 1-9 Credit Hours.
For graduate students holding graduate research assistantship.

BC 8999. Doctoral Thesis Preparation. 1-21 Credit Hours.
This course is designed to synthesize the knowledge and skills developed in previous research courses and apply them to the doctoral dissertation process for students in Building Construction.

BC 9000. Doctoral Thesis. 1-12 Credit Hours.
Preparation of doctoral thesis for Ph.D. in Building Construction.