

ARCHITECTURE ENGINEERING CONTINUING EDUCATION (AECE2-CS)

AECE2-CS 2000 The Dollars and Sense of Designing Green (0 Credits)

Learn to identify and work with materials, methods, and systems; construction documents; and contract administration in order to facilitate LEED certification while maintaining schedule, quality, budget, and life cycle savings. Topics include an examination of the architect's responsibility for achieving sustainable design and the role of site selection, hazardous waste clean up, and storm water and erosion control in achieving LEED certification.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2002 Structural Steel: Concepts of Design and Construction (0 Credits)

Learn about structural steel engineering design—and concepts of detailing for constructability, explore current state-of-the-art steel fabrication technologies, and compare structural steel with other building materials. Explore the history and technology of structural steel production, fabrication, delivery, and installation. Review case studies of structural steel buildings in New York City and around the world.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2030 Facade and Roof Systems (0 Credits)

Examine key issues of concern to construction and real estate professionals related to exterior wall and roof design, regulation, maintenance, diagnosis, and repair. Topics include inspection, engineering, compliance, management, investment perspectives, and Local Law 11/98.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2039 Green Building Commissioning (0 Credits)

Examine the commissioning (Cx) process for green building projects in this one-day seminar. Using the Cx training course authored by Ron Wilkinson and adopted by the United States Green Building Council (USGBC) for the original LEED-NC program, this course covers the commissioning tasks and procedures for the entire commissioning cycle—from planning to occupancy of a building project. Topics include the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE); USGBC LEED tasks and procedures; documentation such as the OPR, the BOD and the Systems Manual; and the costs and benefits of Cx.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2043 Understanding Change Orders and Their Impact (1 Credit)

Examine the various types, origins, and impacts of change orders on a construction project. Topics include design errors and omissions, differing site conditions, notice provisions, pricing of the changes, schedule impacts, delays, types of productivity losses associated with change orders, the issue of entitlement, and change order avoidance.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2046 From Plans to Practice: Accessible Design and Construction (0 Credits)

The Federal Fair Housing Amendments Act of 1988 requires newly constructed multifamily residential buildings to be designed and constructed to provide access to people with disabilities. The New York State Human Rights Law and the 2008 New York City Building Code include additional requirements for accessible design and construction, some of which are more stringent than those required by the federal law. This one-day seminar examines common oversights made by architects and contractors during design and construction that often result in noncompliance, and it offers practical solutions that can help address such issues.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2047 Section 504: Accessible Design and Construction Requirements (0 Credits)

Section 504 of the Rehab Act of 1973 is an often misunderstood federal accessibility law which seeks to prevent discrimination based on disability under any program or activity receiving federal financial assistance, such as federally supported housing design and construction. Low Income Housing Tax Credit projects funded by the American Recovery and Reinvestment Act's Tax Credit Assistance Program (TCAP) have made the stringent application of accessible design and construction requirements even more critical. In this one-day seminar, learn the scoping provisions of the law and the applicable technical criteria contained in the Uniform Federal Accessibility Standards (UFAS).

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2051 Concrete: History, Technology, and Repair (0 Credits)

Learn the history and technology of Portland cement concrete and its precursors, and examine architectural and engineering uses, inspection techniques, causes of deterioration, and current repair methods. Both cast-in-place concrete and pre-cast concrete are reviewed. The course utilizes several case studies, including examples of repairs required to comply with New York City Local Law 11/98 as well as historic concrete structures such as Fallingwater and the Guggenheim Museum.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2061 Green Roof and Wall Technology (1 Credit)

Examine the latest in green roof and living wall design, installation, and maintenance. Topics include essential components, technology, types of green roof systems, environmental benefits, history of green roofs, trends, and future incentives and legislation.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2062 Environmentally Sustainable Design (0 Credits)

Learn the five categories of U.S. Green Building Council LEED specification: site, water conservation, energy efficiency, materials, and indoor air quality. Terms like ecological literacy, sustainable design, resource reuse, rapidly renewable resources, biomimicry, and water harvesting are becoming commonplace among design professionals and clients. Case studies illustrate the process of using sustainability as the integrating context for the design and construction of green buildings.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 2090 New York City Building Code: Fire Protection (0 Credits)

This course examines basic components of a fire alarm system, sequence of operation for general evacuation and selective evacuation types of fire alarm and voice communication systems, types of systems required by the 1968, 2008 and 2014 versions of the NYC Building Code for various occupancies. This course also examines basic components of sprinkler and standpipe systems, types of systems required by the 1968, 2008 and 2014 versions of the NYC Building Code.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9125 New York Commercial Energy Code (0 Credits)

Understand the essential elements of the new New York State and New York City Energy Codes that were officially enacted in January 2011. This course covers the mechanical, envelope, and lighting/power requirements of New York State and New York City. Topics include prescriptive and performance-based ways to comply with the code, standard compliance methodology using COMcheck, an introduction to the performance-based Energy Cost Budget Method of ASHRAE 90.1, and code enforcement. Architects, engineers, code enforcement officials, contractors, and building owners will find this information useful.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9126 HVAC Systems and Equipment (0 Credits)

Gain a working knowledge of how HVAC systems heat, cool, dehumidify, and ventilate commercial buildings. Topics include HVAC equipment, application and selection, refrigeration cycle basics, chilled water systems, heat pump systems, variable refrigerant flow (VRF) systems, principles of heat rejection devices, geothermal systems, variable air volume (VAV), constant volume (CV), dual duct systems, and system sizing. The seminar concludes with a practical approach to energy-efficient HVAC designs in high-performance buildings. Strategies such as air-side and water-side economizers, variable flow water systems, variable air volume systems, supply air temperature reset, demand control ventilation, constant pressure systems, hot gas reheat, energy recovery ventilation systems, wraparound heat pipes, run around systems, boiler vent energy recovery and combined heat and power (CHP) concepts are reviewed. This course is designed for engineers, architects, contractors, real estate developers, and plant managers with a desire to understand the different HVAC systems for commercial buildings and to obtain knowledge of emerging technologies in HVAC.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9130 NYC Building Code: Structural (0 Credits)

Receive a detailed overview of the updated Building Code of New York City. Topics include codes and guidelines for the design of concrete, masonry, steel, timber, and glass structures. The seminar highlights means for establishing environmental loads, as well as the aims and objectives of these provisions. Examine significant changes in the code and its referenced documents, alongside new requirements for structural tests and special inspections on site. The material covered is critical for those seeking to participate in the design or construction administration of buildings in New York City.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9132 New York City Building Code Overview (0 Credits)

Gain a solid understanding of the main code provisions of the current 2008 New York City Building Code. Areas covered include occupancies, building height and area, construction types, means of egress, accessibility, and some fire protection and structural provisions.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9133 Solar Essentials: PV and Thermal (1 Credit)

Learn the essential elements of solar photovoltaic (PV) and thermal system design and integration in this detailed, six-hour seminar. Solar PV topics include both grid-tied and off-grid systems; safety, site assessment, and site restraints; user demand; sizing and designing a system; codes; building-integrated PV (BIPV); and installing, inspecting, commissioning, maintaining, and troubleshooting a system. The course covers overall system costs; NYSERDA, city, state, and federal incentives; tax credits; net metering; and all system components, including thin-film and crystalline panels, inverters, wiring, connections, mounting options, battery backup and chargers, and local and Internet data collection devices and monitoring systems. Solar thermal topics include collection, storage, and distribution for domestic hot water; space heating; commercial applications; flat-plate panels and evacuated tube collectors; system sizing and components; heat storage and heat exchange tanks; closed-loop, pressurized glycol antifreeze systems; the single and double-pump drain-back system; and the drain-down, open-loop active system.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9134 Building Energy Modeling Using eQuest (0 Credits)

Building energy modeling is an essential part of energy efficient integrated design, LEED certification, and compliance with many state and federal programs. Learn the fundamentals of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 90.1 Appendix G by creating an energy model for a case study using the eQuest freeware building energy analysis tool in this hands-on, two-day workshop. Each student has access to a computer station loaded with eQuest, so there is no need to bring a laptop.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9135 Structural Renovations: Understanding NYC Buildings and How to Modify Them (1 Credit)

Learn how to design an efficient renovation project so you get the most out of an architectural design and the inherent strengths of the existing building. This course covers the primary styles of historical construction in New York City. It also presents new methods for solving age-old problems, along with proven techniques for redesigning a structure to fit your needs. Learn the history of building materials, and explore what can be accomplished with each, including steel material from its conception, rivets, welding and bolts, terra cotta and brick arch slabs, early reinforced concrete construction, cast and wrought iron, and different forms of shallow and deep foundations. A brief history of the New York City Building Codes also is presented.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9136 Retail Architecture Imagery, Trends, and Technology (0 Credits)

The growth of online retail sales is forcing traditional in-shop owners increasingly to retain the professional services of architects to develop venues to attract and keep customers inside the stores. This one-day seminar for architects and designers covers the fundamentals of retail architecture and its evolution by exploring the latest merchandising and technological developments in the industry. Examine the roles of in-house store planners and construction and display professionals, which include creating exterior and interior store images that reflect the brand; recognizing the balance between creativity and standards, current lighting design and audio-visual display, anchor and specialty stores, retail leasing and the tenant package, and international development and cultural challenges; and establishing a design sequence from merchandising to planning to display by evaluating back of house support functions, such as recording sales, loss prevention, and customer service.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9137 Complex Facade System Design and Construction (0 Credits)

Examine the latest technology and equipment used in the design, fabrication, and construction of complex facade systems. Topics include facade design and engineering; sustainability; new materials, such as thermal, fire, and bird-friendly glass; sustainable products; facade access systems; and facade design with stones, concrete, metals, and glass. Also, learn the latest about 2D versus 3D; building information modeling (BIM) technology; 3D design for complex geometries; laser survey and 3D construction assistance; and "3D straight to fabrication," which doesn't require fabrication or shop drawings. Discuss how these tools and techniques have been applied to local and international projects, including the Bank of America Tower, the Hearst Tower, the IAC Building, the Yas Hotel, the Seattle Central Library, the Wyly Theatre, and CCTV Headquarters.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9138 Lighting System Design (0 Credits)

Receive training on fundamental lighting concepts, and gain an understanding of how they are applied to the selection and layout of lighting systems. Topics include the properties of light, light sources, lamp characteristics, photometry, luminaire efficiency, luminaire selection, spacing requirements, and lighting level calculations.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9139 Lighting Technologies (0 Credits)

Explore the latest lighting technologies and control systems, and learn how they are being applied in today's buildings to improve energy efficiency and conservation. Topics include light-emitting diode (LED) light sources and their operation, characteristics, life expectancy, and lumen maintenance; lighting control systems, including their elements, system features, operation; and a review of energy conservation code criteria.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9140 Fire Alarm Systems (0 Credits)

Examine various types of fire alarm systems required under the current 2008 New York City Building Code and the updated 2013 Code for office buildings, hotels, schools, hospitals, and public assemblies. Topics include building code requirements, sequences of operation, system installation methods, filing, approval and sign-off procedures. The course also covers fire alarm system maintenance and testing requirements under the N.Y.C. Fire Code.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9145 Facade Inspection Safety Program (FISP) (1 Credit)

The Facade Inspection Safety Program (FISP) of New York City Local Law 11/98 requires that exterior walls and appurtenances of properties of six or more stories in height be inspected every five years. This seminar covers the origins, recent changes, and current requirements of this law. Case studies are used as examples of compliance with the law.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9146 Daylight Analysis for Building Design (0 Credits)

Learn how to integrate daylight simulations into your professional design practice in this hands-on seminar. Using the DIVA plug-in for Rhino, conduct a series of simulation exercises for Radiance and Daysim. Exercises include conducting a LEED 3.0 compliance analysis, detecting glare at key positions within a building throughout the year, and developing suitable automated electric lighting and shading controls to maximize daylight availability while controlling glare.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9147 Energy Modeling for Building Design (0 Credits)

In this seminar, learn to use energy analysis tools to make informed early-design decisions. Using COMFEN, OpenStudio, eQUEST, and Sefaira modeling interfaces, set up, run, and interpret results from single-zone and core-perimeter models to quickly study the impact of design alternatives on building performance across various interdependent metrics, including energy consumption, peak demand, and thermal and visual comfort.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9148 Combined Heat and Power (CHP) Cogeneration (1 Credit)

Learn how the fundamental scientific and economic principles of combined heat and power (CHP) make this century-old technology a powerful strategy for reducing operating costs and greenhouse gas emissions in today's building environment. Topics include the specific technologies that are used in CHP systems and their pros and cons, ways of integrating CHP with existing building systems, and strategies for successfully executing CHP projects with a focus on the multifamily and commercial building sectors.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9149 Legionella Control and Water Treatment in Commercial Buildings (7 Credits)

Three major outbreaks of Legionnaires' disease occurred in New York City in 2015. Each outbreak was linked to contaminated cooling tower(s) operating on rooftops of buildings within the outbreak zone. This public health threat prompted the promulgation of emergency regulations to clean and disinfect every cooling tower in New York City and New York State. In this seminar, gain an overview of Legionella issues in buildings. Examine the components of a comprehensive water treatment program to control microbiologic and chemical fouling of cooling towers and other heat transfer equipment in typical commercial office buildings.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9150 The "New" New York State Mold Law (1 Credit)

Gain a comprehensive understanding of the new 2015 New York State Mold Law (New York State Bill S3667D-2013) and examine its impact on the design, construction, and maintenance of real estate in New York State. Topics include the microbiological principles of mold, the moisture issues responsible for mold proliferation in buildings, the health and legal uncertainties of mold contamination in buildings, the licensure of mold assessment and remediation specialists, and the setting of minimum work standards for mold assessment and remediation specialists.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9151 Indoor Environmental Quality (0 Credits)

Study the principles of indoor environmental quality (IEQ) and learn how to direct, interpret, and evaluate IEQ site investigation reports. Topics include an overview of the general principles governing the indoor building environment, gaseous compounds, particulates, asbestos, vermiculite, microbiology, mold issues, physical factors, LEED and green building IEQ credits, chemical and biological agents in terrorism, and air modeling methods.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9152 Fundamentals of Energy Management (0 Credits)

Examine fuels, alternative energy, power generation, district energy, regulatory considerations, energy efficiency, environmental matters, and basic energy/utility finance. This course benefits engineers, architects, developers, planners, and those in the financial arena who deal with the energy and utilities sectors.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9153 New Urbanism (1 Credit)

This seminar provides an introduction to the principles and values of the important urban design movement—new urbanism. Learn about the historical context of the rise of new urbanism, and explore how it relates to past movements and how it informs real estate development, urban planning, and municipal land-use strategies.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9154 Understanding the New York City Zoning Resolution (1 Credit)

The course discusses the legal and technical framework of the New York City Zoning Resolution, including zoning applications to existing and new construction. Topics covered include the history of zoning; an overview of zoning text and maps; general provisions; residence, commercial, and manufacturing district regulations; nonconforming and noncomplying uses; and administration, special districts, and index of uses.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes

AECE2-CS 9155 Solar and Renewable Energy Policy (1 Credit)

Learn the essential elements of solar photovoltaic (PV), wind, and energy storage integration and policy. Explore increasing renewable energy penetration on the grid, changes to net-metering policies, remote/virtual net metering, curtailment, grid stability, and utility company operational structure. Topics include federal renewable energy policy including the Clean Power Plan, the Investment Tax Credit (ITC) and Production Tax Credit (PTC), EPA regulations, the Paris Climate Agreement, and Renewable Portfolio Standards (RPS). State-level policy in Nevada, Florida, New York, California, Hawaii, and Arizona is emphasized. Additional topics include utility, commercial, and residential scale solar; financial/ownership structures including third party, leases, power purchase agreements, and yield cost; comparative cost of energy (LCOE) for alternative energy technologies versus conventional generation; the effect of oil and natural gas prices on renewable energy growth; future energy demands; grid-tied and off-grid systems; site assessment; user demand; safety; environmental concerns; and costs. Discuss sizing, designing, installing, and maintaining systems. Wind farm-specific topics include offshore versus onshore sites, vertical axis versus traditional wind turbines, and fabrication and logistical challenges. Energy storage-specific topics will focus on battery storage with regards to different chemistry types, deployment, backup power, demand response, peak shaving, and frequency regulation.

Grading: SPS Non-Credit Graded

Repeatable for additional credit: Yes