CENTRAL CAROLINA COMMUNITY COLLEGE

Applied Technologies

Program Planning Guide

Building Construction Technology Associate in Applied Science Degree (A35140)

Program Length: 5 semesters
Program Sites: Chatham Main Campus
Career Pathway Options: Associate in Applied Science Degree in Building Construction

Suggested Course Schedule		Class	Lab	Work	Credits	Notes:
1st Semester (fall)						
ACA 122	College Transfer Success	0	2	0	1	
BPR 130	Print Reading Construction	3	0	0	3	
CST 111	Construction I	3	3	0	4	
CST 131	OSHA/Safety Certification	2	2	0	3	
MAS 140	Intro to Masonry	1	2	0	2	
Mathematics requirement, select one:		2	2	0	3	
MAT 110	Math Measurement & Literacy					
MAT 143	Quantitative Literacy					
	Total Semester Hours	**11**	**11**	**0**	**16**	
2nd Semester (spring)						
CST 112	Construction II	3	3	0	4	
CST 241	Planning & Estimating I	2	2	0	3	
CMT 120	Codes and Inspections	3	0	0	3	
ELC 113	Residential Wiring	2	6	0	4	
PLU 111	Intro to Plumbing	1	3	0	2	
	Total Semester Hours	**11**	**14**	**0**	**16**	
3rd Semester (summer)						
CST 113	Construction III	3	3	0	4	
ENG 111	Writing & Inquiry	3	0	0	3	
	Total Semester Hours	**6**	**3**	**0**	**7**	

Effective Term: 2023FA

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4th Semester (fall)						
CST 221	Statistics/Structures	3	3	0	4	
SST 120	Energy Use Analysis	2	2	0	3	
SST 140	Green Bldg. & Design Concepts	3	0	0	3	
Humanities/Fine Arts Elective		3	0	0	3	
Communications Elective		3	0	0	3	
	Total Semester Hours	**14**	**5**	**0**	**16**	
5th Semester (spring)						
ARC 111	Intro to Architecture	1	6	0	3	
BUS 280	REAL Small Business	4	0	0	4	
CST 150	Building Science	2	2	0	3	
WBL 111	Work-based Learning	0	0	10	1	
Social/Behavioral Science Elective		3	0	0	3	
	Total Semester Hours	**10**	**8**	**10**	**14**	
Total Semester Credit Hours Required for Graduation: 69						

Course Descriptions

ACA 122 College Transfer Success
This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college policies and culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. This course has been approved for transfer under the CAA/ICAA as a premajor and/or elective course requirement.

ARC 111 Introduction to Arch Technology
This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and oblique drawing techniques using architectural plans, elevations, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum architectural standards.

BPR 130 Print Reading-Construction
This course covers the interpretation of prints and specifications that are associated with design and construction projects. Topics include interpretation of documents for foundations, floor plans, elevations, and related topics. Upon completion, students should be able to read and interpret construction prints and documents.

BUS 280 REAL Small Business
This course introduces hands-on techniques and procedures for planning and opening a small business, including the personal qualities needed for entrepreneurship. Emphasis is placed on market research, finance, time management, and day-to-day activities of owning/operating a small business. Upon completion, students should be able to write and implement a viable business plan and seek funding.

CMT 120 Codes and Inspections
This course covers building codes and the code inspections process used in the design and construction of residential and commercial buildings. Emphasis is placed on commercial, residential, and accessibility (ADA) building codes. Upon completion, students should understand the building code inspections process and apply building code principles and requirements to construction projects.

CST 111 Construction I
This course covers standard and alternative building methods to include wall framing. Topics include safety and footings, foundations, floor framing systems, and wall framing systems commonly used in the construction industry. Upon completion, students should be able to safely erect all framing necessary to begin roof framing.

CST 112 Construction II
Prerequisites: CST 111
This course covers building methods and materials used to dry-in a building. Topics include safety, ceiling/roof framing applications, roof finishes, windows, and exterior doors. Upon completion, students should be able to safely erect different roof types and properly install windows and exterior doors, roofing, and exterior finish materials.

CST 113 Construction III
Prerequisite: CST 112
This course covers building methods and materials used to complete the interior of a structure. Topics include safety, installation of thermal and acoustical barriers, and interior finishes including millwork, cabinets, interior doors, flooring, and wall treatments. Upon completion, students should be able to safely and accurately install interior treatments including insulation, paneling, drywall, molding, doors, flooring, and cabinetry.

CST 131 OSHA/Safety/Certification
This course covers the concepts of work site safety. Topics include OSHA regulations, tool safety, and certifications which relate to the construction industry. Upon completion, students should be able to identify and maintain a safe working environment based on OSHA regulations and maintain proper records and certifications.

CST 150 Building Science
This course introduces concepts and techniques for the design and interaction of the mechanical systems of high performance buildings. Topics include building envelope, heating, ventilation and air conditioning (HVAC), indoor air quality, lighting, plumbing and electrical. Upon completion, students should be able to understand building systems interaction and performance.

CST 221 Statics/Structure
Prerequisite: Take one set:
Set 1: ARC-112 and MAT-110; Set 2: ARC-112 and MAT-121; Set 3: ARC-112 and MAT-171; Set 4: CAR-112 and MAT-110; Set 5: CAR-112 and MAT-121; Set 6: CAR-112 and MAT-171; Set 7: CST-112 and MAT-110; Set 8: CST-112 and MAT-121; Set 9: CST-112 and MAT-171
This course covers the principles of statics and strength of materials as applied to structural building components. Topics include forces on columns, beams, girders, and footings and connection points when timber, steel, and concrete members are used. Upon completion, students should be able to accurately analyze load conditions present in structural members.

CST 241 Planning/Estimating I
Prerequisite: Take one: BPR 130, MAT 121, MAT 171
This course covers the procedures involved in planning and estimating a construction/building project. Topics include performing quantity take-offs of materials necessary for a building project. Upon completion, students should be able to accurately complete a take-off of materials and equipment needs involved in a construction project.

ELC 113 Residential Wiring
This course introduces the care/usage of tools and materials used in residential electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical print reading; planning, layout, and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.

ENG 111 Writing and Inquiry
Prerequisite: Take one set: Set 1: DRE 097; Set 2: ENG 002; Set 3: BSP 4002
Corequisite: Take ENG 011
This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved for transfer under the CAA/ICAA as a general education course in English Composition.

MAS 140 Introduction to Masonry
This course introduces basic principles and practices of masonry. Topics include standard tools, materials, and practices used in basic masonry and other related topics. Upon completion, students should be able to demonstrate an understanding of masonry and be able to use basic masonry techniques.

MAT 110 Math Measurement & Literacy
Prerequisite: Take one set: Set 1: DMA 010 DMA 020, DMA 030; Set 2: DMA 025; Set 3: MAT 003; Set 4: BSP 4003
Corequisite: Take MAT 010
This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

MAT 143 Quantitative Literacy
Prerequisite: Take one set: Set 1: DMA 010, DMA 020, DMA 030, and DRE 098; Set 2: DMA 010, DMA 020, DMA 030, and ENG 002; Set 3: DMA 010, DMA 020, DMA 030, and BSP 4002; Set 4: DMA 025 and DRE 098; Set 5: DMA 025 and ENG 002; Set 6: DMA 025 and BSP 4002; Set 7: MAT 003 and DRE 098; Set 8: MAT 003 and ENG 002; Set 9: MAT 003 and BSP 4002; Set 10: BSP 4003 and DRE 098; Set 11: BSP 4003 and ENG 002; Set 12: BSP 4003 and BSP 4002
Corequisite: Take MAT 043
This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship. Upon completion, students should be able to utilize quantitative information as consumers and to make personal, professional, and civic decisions by decoding, interpreting, using, and communicating quantitative information found in modern media and encountered in everyday life. This course has been approved for transfer under the CAA/ICAA as a general education course in Mathematics (Quantitative).

PLU 111 Intro to Basic Plumbing
This course introduces basic plumbing tools, materials, and fixtures. Topics include standard tools, materials, and fixtures used in basic plumbing systems and other related topics. Upon completion, students should be able to demonstrate an understanding of a basic plumbing system.

SST 120 Energy Use Analysis 2-2-3
This course introduces the principles of analyzing energy use, energy auditing tools and techniques, conservation techniques, and calculating energy savings. Topics include building system control theory, calibrating digital controls, energy loss calculations, and applicable conservation techniques. Upon completion, students should be able to demonstrate an understanding of energy use, audits, and controls in the analysis of energy consumption.

SST 140 Green Building & Design Concepts 3-0-3
This course is designed to introduce the student to sustainable building design and construction principles and practices. Topics include sustainable building rating systems and certifications, energy efficiency, indoor environmental quality, sustainable building materials and water use. Upon completion, students should be able to identify the principles and practices of sustainable building design and construction.

WBL 111 Work-Based Learning I 0-10-1
Local Prerequisite: Approval of Instructor or Department Chairperson
This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

Approved Humanities/Fine Arts Electives
Associate in Applied Science Degree/Diploma

ART 111	Art Appreciation
ART 114	Art History Survey I
ART 115	Art History Survey II
DRA 111	Theatre Appreciation
ENG 125	Creative Writing I
ENG 231	American Literature I
ENG 232	American Literature II
ENG 241	British Literature I
ENG 242	British Literature II
HUM 110	Technology & Society
HUM 115	Critical Thinking
HUM 120	Cultural Studies
HUM 122	Southern Culture
HUM 150	American Women's Studies
HUM 160	Introduction to Film
MUS 110	Music Appreciation
MUS 112	Introduction to Jazz
PHI 240	Introduction to Ethics
REL 110	World Religions
REL 211	Intro to Old Testament
REL 212	Intro to New Testament

Communications Electives:
ENG 112 Writing/Research in the Disc
ENG 114 Prof Research & Reporting
COM 120 Intro Interpersonal Com

Approved Social/Behavioral Science Electives
Associate in Applied Science Degree/Diploma

ANT 210	General Anthropology
ANT 220	Cultural Anthropology
ECO 151	Survey of Economics
ECO 251	Principles of Microeconomics
ECO 252	Principles of Macroeconomics
HIS 111	World Civilization I
HIS 112	World Civilization II
HIS 131	American History I
HIS 132	American History II
HIS 222	African-American History I
HIS 223	African-American History II
HIS 226	The Civil War
HIS 236	North Carolina History
POL 120	American Government
PSY 150	General Psychology
PSY 237	Social Psychology
PSY 241	Developmental Psychology
PSY 246	Adolescent Psychology
PSY 281	Abnormal Psychology
SOC 210	Introduction to Sociology
SOC 213	Sociology of the Family
SOC 220	Social Problems
SOC 225	Social Diversity
SOC 232	Social Context of Aging
SOC 240	Social Psychology