BUILDING CONSTRUCTION TECHNOLOGY

Associate of Applied Science Degree

- Building Construction Technology (60 credits)

The Associate of Applied Science Degree in Building Construction Technology prepares students for opportunities within the growing construction industry. Providing significant hands-on instruction and student participation, the degree includes basic construction safety, technical math skills, blueprint reading, use of hand and power tools, wood building materials, concrete work, masonry construction, and basic plumbing skills. This competency and performance-based degree follows nationally recognized National Center for Construction Education and Research (NCCER) accreditation and certification standards. Students may enroll on a full-time or part-time basis. Some courses are offered in the evening to accommodate students’ work schedules.

Students may also choose to pursue a Certificate of Completion in Building Construction Technology (44-45 credits), Basic Solar (21 credits), Energy Auditing (23 credits), and/or Plumbing (17 credits) while pursuing an Associate of Applied Science Degree in Building Construction Technology.

Certificates of Completion - Important information about the educational debt, earnings, and completion rates of students who attend this program can be found on the following https://dacc.nmsu.edu/gainfulemployment/.

- Building Construction Technology (43-44 credits)
- Basic Solar (22 credits)
- Energy Auditing (23 credits)
- Plumbing (17 credits)

The certificates of completion in Building Construction Technology prepare students for basic, entry-level positions within the growing construction industry. Providing hands-on instruction and student participation, the certificates include basic construction safety, technical math skills, blueprint reading, use of hand and power tools, construction materials, and other related, applicable skills and training as described below. These competency and performance-based certificates follow nationally recognized National Center for Construction Education and Research (NCCER) accreditation and certification standards. Students may enroll on a full-time or part-time basis. Some courses are offered in the evening to accommodate students’ work schedules.

- The Certificate of Completion in Basic Solar prepares a student with the skills for entry-level employment in the field of basic solar panel installation and construction related solar energy applications.
- The Certificate of Completion in Energy Auditing prepares a student with the skills for entry-level employment in the field of energy auditing, including the analysis of existing structures for energy efficiency and conservation.
- The Certificate of Completion in Plumbing prepares a student with the skills for entry-level employment in the plumbing field, including basic residential plumbing procedures and practices.

All Building Construction Technology students are encouraged to join the student chapter of the National Association of Home Builders (NAHB). Membership provides students an opportunity to develop their leadership skills, become proficient in public speaking and parliamentary procedures, network with industry professionals, attend training provided by Las Cruces Home Builders Association (LCHBA), and attend other relevant professional development activities. Through their membership, students will have the opportunity to participate in service-learning events that support the local community. Students may also be able to demonstrate their technical skills at the International Builders Show (IBS) or through SkillsUSA competitions.

Whether during class, laboratory, or working on a class-related job site, students enrolled in the Building Construction Technology program will be required to perform the same job duties and be able to meet the same physical requirements that they will as a graduate in the field. Depending where they find employment, graduates may be required to:

- Work in inclement weather,
- Lift up to 50 pounds from the ground,
- Possess good eye-hand coordination,
- Work safely around electrical hazards using the appropriate safety equipment,
- Work safely using hand and power tools,
- Ascend and descend stairs and ladders, and
- Stand, squat, or kneel for long periods.


Basic Solar - Certification of Completion (http://catalogs.nmsu.edu/dona-ana/academic-career-programs/building-construction-technology/basic-solar-certificate)

Energy Auditing - Certificate of Completion (http://catalogs.nmsu.edu/dona-ana/academic-career-programs/building-construction-technology/energy-auditing-certificate)

Plumbing - Certificate of Completion (http://catalogs.nmsu.edu/dona-ana/academic-career-programs/building-construction-technology/plumbing-certificate)

BCT 100. Building Trades I
8 Credits (2+12P)
Equipment and general safety. Human relations, building construction surveying, footings, foundation form work, framing, sheathing, insulation. Basic electrical wiring and plumbing. Classroom instruction, on-the-job training, and problem solving.

BCT 101. Introduction to Construction I
2 Credits (2+1P)
Basic safety, including personal protective equipment, how to perform basic construction tasks safely, and what to do if an accident occurs. Includes basic construction methods. May be repeated up to 2 credits. Restricted to Community Colleges campuses only.

Corequisite(s): BCT 102 and BCT 103.
BCT 102. Introduction to Construction II
2 Credits (2+1P)
Introduction to power and hand tools, blueprints, and basic rigging hardware and techniques. May be repeated up to 2 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 101 and BCT 103.

BCT 103. Introduction to Construction Laboratory
3 Credits
Provides students the opportunity to practice skills they have acquired in BCT 101 and BCT 102. It includes task-oriented projects in which students can apply many of the skills and knowledge that have been presented throughout the National Center for Construction and Education Research (NCCER) Carpentry Program. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 101 and BCT 102.

BCT 104. Woodworking Skills I
3 Credits (1+4P)
Use and care of hand tools and elementary power tools, safety procedures, and supervised project construction.

BCT 105. Woodworking Skills II
3 Credits (1+4P)
Advanced woodworking skills to include use of advanced power tools, power tool safety, and supervised construction.
Prerequisite: BCT 104 or consent of instructor.

BCT 106. Woodworking Theory and Practice
3 Credits (2+2P)
History of wood manufacturing, industrial techniques, wood characteristics, stains and finishes. Design and construction of minor wood projects.

BCT 107. Painting I
4 Credits (2+4P)
Types and applications of paints and clear coatings. Use of fasteners, caulks, and sealants. Restricted to: Community Colleges only.

BCT 109. Plumbing I
3 Credits (2+3P)
Covers orientation to the trade. Students will learn about materials used in the plumbing industry and the different types of plumbing fixtures. It includes task-oriented projects in which the students apply many of the skills and knowledge that are presented through the National Center for Construction and Education Research (NCCER) Plumbing Program. May be repeated up to 3 credits.
Prerequisite(s/Corequisite(s): BCT 101, BCT 102. Restricted to Community Colleges campuses only.

BCT 110. Blueprint Reading for Building Trades
4 Credits (2+4P)
Same as DRFT 151, OEET 101, OEPB 110.

BCT 111. Small Equipment Maintenance and Repair
4 Credits (2+4P)
Covers small engine theory, troubleshooting and repair, auto maintenance, hydraulic theory and repair lubricants, batteries and scheduled tool maintenance. Restricted to: Community Colleges only.

BCT 114. Basic Carpentry
3 Credits (1+4P)
Covers orientation to the trade; wood building materials, fasteners, and adhesives; detailed description and explanations of hand-operated and power tools, including safety; framing basics including laying out and constructing of wood floors, walls and ceilings and includes roughing in of door and window openings. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 115 and BCT 116.

BCT 115. Carpentry Level I
3 Credits (1+4P)
Describes the various kinds of roofs and provides instructions for lay out of the different roofing systems. Describes the various types of windows, skylights, and exterior doors and provides instruction for installation. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 114 and BCT 116.

BCT 117. Plumbing 1A
3 Credits (2+2P)
This course will introduce students to the plumbing profession. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field. Restricted to Community Colleges campuses only.

BCT 118. Math for Building Trades
3 Credits
Geometry, algebra, arithmetic, and basic trigonometry pertaining to mathematical applications in the building trades field. Same as OEET 118, DRFT 118, OEPB 118.
Prerequisite: CCDM 103 N.

BCT 119. Plumbing 1B
3 Credits (2+2P)
This course continues the introduction of students to the plumbing profession. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field. Restricted to Community Colleges campuses only.

BCT 121. Construction Law
3 Credits
Using the New Mexico Contractors Reference manual, this course covers licensing requirements and regulations, business, law and other important aspects of owning and running a construction business. Restricted to: Community Colleges only.
BCT 123. Residential Wiring I  
3 Credits (2+3P)  
Introduction to residential electrical wiring trade, electrical safety practices, basic electrical circuits and theory, reading and interpreting applicable construction prints/drawings, introduction to basic National Electric Code (NEC), and preparation for entry-level employment in residential electrical wiring. Restricted to Community Colleges campuses only.

BCT 130. Professional Development and Leadership  
1 Credit  
As members and/or officers of various student professional organizations, students gain experience in leadership, team building, and community service. Students competing or participating in Skills USA are required to register for the course. May be repeated up to 6 credits. Consent of Instructor required. Restricted to: BCT majors. S/U Grading (S/U, Audit). Restricted to: Community Colleges only.

BCT 150. Forklift Operation  
1 Credit  
Classroom instruction and hands-on practice to prepare students to operate a forklift safely in the workplace. Students will have the opportunity to earn a forklift operator's permit. Consent of Instructor required. Restricted to Community Colleges campuses only.

BCT 200. Building Trades II  
8 Credits (2+12P)  
Continuation of BCT 100: roofing; exterior and interior finish; masonry; door, window, and cabinet installation.

BCT 206. Advanced Cabinetmaking  
3 Credits (1+3P)  
Advanced cabinetmaking skills, to include expert use of hand and power tools, professional construction and finishing techniques. Prerequisites: BCT 105, BCT 106, or consent of instructor.

BCT 209. Plumbing II  
3 Credits (2+3P)  
Continuation of BCT 109. Provides students the opportunity to gain more practice in the skills and knowledge learned in Plumbing I. Students will install fixtures and run the various plumbing supply lines from Plumbing Level I. The course included hands on projects in which the students apply many of the competencies that have been presented through the National Center for Construction and Education Research (NCCER) Plumbing Program. May be repeated up to 3 credits. Prerequisite(s)/Corequisite(s): BCT 109.

BCT 217. Building and the Environment  
3 Credits  
Introduction to LEED's, and Green Building Fundamentals, sustainability, sustainable design and green building evaluating cost implication of green building. Describes site development; managing site water runoff, improving a project’s water use efficiency. Discusses renewable energy sources, and introduces student to generating power on-site using renewable energy sources, improving a building's indoor environment quality, improving the building industries’ environmental performance and environmental aspects of building maintenance, re-use and conservation. Restricted to: Community Colleges only.

BCT 218. Plumbing 2  
4 Credits (2+4P)  
This course builds on the skills and knowledge students have gained in previous BCT introduction to plumbing courses, focusing on installation of plumbing systems. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field. Prerequisite(s): BCT 117 and BCT 119.

BCT 219. Weatherization in Construction  
3 Credits (2+2P)  
Introduction to industry weatherization standards and practices utilized in the construction of buildings for the purpose of energy conservation. Economic and environmental impacts of the use of energy in heating and cooling building will be examined. Prerequisite(s): BCT 101, BCT 102 and BCT 103.

BCT 221. Cooperative Experience I  
1-4 Credits  
Supervised cooperative work program. Student is employed in an approved occupation and is supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Prerequisite: consent of instructor.

BCT 222. Alternative Building  
3 Credits (2+2P)  
Exploration of different types of building techniques and materials other than the traditional wood framed structures. Materials and techniques will include adobe, straw bale, insulated concrete forms, rammed earth and structural insulated panels with an emphasis on "green building" methods. Restricted to: Community Colleges only.

BCT 223. Residential Wiring II  
3 Credits (2+3P)  
Introduction to electrical raceways and fittings; electrical conductors and cables; basic electrical construction drawings, residential electrical services, and electrical test equipment. Restricted to Community Colleges campuses only. Prerequisite(s): BCT 123.

BCT 255. Special Topics  
1-6 Credits (1-6)  
Topics to be announced in the Schedule of Classes. May be repeated up to 12 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.

BCT 290. Special Problems in Building Technology  
1-4 Credits  
Individual studies in areas directly related to building technologies. Prerequisite: consent of instructor.

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