

**Career-Technical Credit Transfer (CT)<sup>2</sup>  
Construction Technology Career-Technical Assurance Guide (CTAG)  
February 23, 2016**

The following courses, indicated by a Career-Technical Articulation Number (CTAN), are eligible for post-secondary credit and transfer among Ohio's public secondary career-technical institutions and state institutions of higher education. The SCTAI alignment document with ODE competencies and post-secondary learning outcomes are available on the ODHE website at <https://www.ohiohighered.org/transfer/ct2/ctags>.

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| <b>CTCON001 - Plan Reading</b>   | <b>Credits: 3 Semester Hours</b>  |
| <p><b>Advising Notes:</b> To access post-secondary credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program</li> <li>• Successfully complete <u>ODE secondary course <b>Plan Reading and Estimating (178019)</b></u> and earn a qualifying score on the End of Course examination. The score will be determined at the conclusion of field-testing at the end of the 2019-2020 academic year.</li> </ul>   | <p>Secondary institutions must have pathway approval from the Ohio Department of Education. Certificate of Affirmation assurances are now incorporated into the CTE-26 application process.</p> |
| <b>CTCON002 - Construction Safety</b>  | <b>Credits: 3 Semester Hours</b>  |
| <p><b>Advising Notes:</b> To access post-secondary credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program</li> <li>• Successfully complete <u>ODE secondary course <b>Construction Safety and Crew Leadership (178018)</b></u> and earn a qualifying score on the corresponding End of Course examination. The score will be determined at the conclusion of field-testing at the end of the 2019-2020 academic year.</li> <li>• Obtain a valid OSHA 30 hour card in general construction</li> </ul> | <p>Secondary institutions must have pathway approval from the Ohio Department of Education. Certificate of Affirmation assurances are now incorporated into the CTE-26 application process.</p> |
| <b>CTCON003 - Construction Methods and Materials (OAN OET016)</b>  | <b>Credits: 3 Semester Hours</b>  |
| <p><b>Advising Notes:</b> To access post-secondary credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program</li> <li>• Successfully complete <u>ODE secondary course <b>Carpentry and Masonry Technical Skills (178001)</b></u> and earn a qualifying score on the End of Course examination. The score will be determined at the conclusion of field-testing at the end of the 2019-2020 academic year.</li> </ul>  | <p>Secondary institutions must have pathway approval from the Ohio Department of Education. Certificate of Affirmation assurances are now incorporated into the CTE-26 application process.</p> |

Each CTAN identifies the learning outcomes equivalent or common to those taught in introductory technical courses. To receive credit under these agreements, career-technical programs and the state institutions of higher education must document that their course content matches the learning outcomes in the CTANS. In accordance with Ohio Revised Code 3333.162, industry standards and certifications provide documentation of student learning.

#### **Requirements and Credit Conditions:**

1. The receiving institution must have a comparable program, major, or course(s) approved through submission to the Ohio Department of Higher Education (CT)<sup>2</sup> approval process for the CTANS listed in this document.
2. Credits apply to courses offered in the specified technical area at Ohio's public institutions of higher education. In the absence of an equivalent course, and when the institution offers the technical program, the receiving institution will guarantee to grant and apply an equivalent credit value of the Career-Technical Articulation Number (CTAN) toward the technical requirements of the specific degree/certificate program.
3. The applicant must provide proof to the receiving institution that she/he completed a course that has been approved through the (CT)<sup>2</sup> approval process and that she/he holds the appropriate credential or has passed the end-of-course assessment(s) where required.
4. A career-technical student seeking credit under the terms of this CTAG must enroll and submit their verification form to the college within three years of completing a career-technical course. Students may earn credit within the currency of the industry certificate or license.
5. A career-technical student who meets all eligibility criteria will receive the credit hour value for the comparable course(s) as offered at the receiving state institution of higher education.
6. The admission requirements of individual institutions and/or programs are unaffected by the implementation of (CT)<sup>2</sup> outcomes.
7. The transfer of credit through this CTAG will not exempt a student from the residency requirements at the receiving institution.

#### **CTCON001 - Plan Reading**

**General Course Description:** This course provides the context and skills required for students to interpret, visualize, and apply technical information contained within a set of construction drawings and sets the foundation for further study in design and construction. Upon completion of this course, the student will be able to interpret working drawings including scales, dimensions, notes, symbols, sections, schedules, and how the various drawing views relate to each other. Students will learn how specifications and other contract documents relate to the construction drawings.

**Credits:** 3 Semester Hours

#### **Learning Outcomes:**

1. \*Interpret Views and Scales, Lines and Symbols, Plan Views, Elevation Views, and Sections and Details as they pertain to construction drawings.
2. \*Read and interpret plans within a construction drawing set including topographical, grading and drainage, architectural, structural, plumbing, mechanical, and electrical drawings.
3. \*Explain how specifications and other contract documents relate to construction drawings.
4. \*Use construction drawings to visualize a proposed project and transfer data relating to the project design.

***\*Asterisk Indicates Essential Learning Outcomes***

**CTCON002 - Construction Safety**

**General Course Description:** This course introduces occupational safety hazards associated with the construction industry. Emphasis placed on recognition, evaluation, and control of safety hazards particularly as they relate to the Occupational Safety and Health Act (OSHA) standards and requirements as they apply to the construction industry. Topics include safety and health hazards workers may face on construction work sites, safe practices, and construction safety management. Emphasis is placed on hazard identification, avoidance, control, and prevention. Upon successful completion, this course provides students with a 30-hour OSHA card.

**Credits:** 3 Semester Hours

**Learning Outcomes:**

1. \*Identify safe practices on different construction activities (e.g. materials handling, welding, excavations, fall protection, electrical work, fire protection, etc.) and proper use of personal protective equipment, hand and power tools, cranes, scaffolds, and ladders.
2. \*Identify common safety hazards on a construction site (e.g., Focus 4: falls, electrocution, caught in or between, and struck by) and recommend proper preventive and corrective measures.
3. \*Identify and describe the primary health and environmental hazards on a construction site and be able to recommend proper preventive and/or control measures.
4. \*Communicate safe practices to team members.
5. \*Recognize the various aspects of OSHA safety regulations for the construction industry (29 CFR part 1926) including the terms used, mandatory procedures, record keeping, emergency response, compliance, inspection, and penalties.

***\*Asterisk Indicates Essential Learning Outcomes***

**CTCON003 - Construction Methods and Materials (OAN OET016)**

**General Course Description:** This course provides an overview of various common construction methods and building details and the various materials used in construction. After receiving an introduction into fundamental principles of structural, physical, and long-term performance, students learn about material and product manufacturing techniques and properties of the various materials. Topics include analyzing architectural drawings, construction terminology, sectors of the construction industry, that is, residential, commercial, industrial, institutional, and highway, and the various individuals involved in the industry.

**This CTAN is an approved OAN in the Civil/Construction Engineering Technology (CCET) TAG. The number and title are OET016 - Construction Methods and Managements.**

**Credits:** 3 Semester Hours

**Learning Outcomes:**

1. \*Demonstrate basic understanding of architectural blueprints.
2. \*Understand the terminology related to the building construction.
3. \*Identify the people involved in the construction industry.
4. \*Know the origin, development, and use of common building materials.
5. \*Compare methods of construction used in buildings.

**\*Asterisk Indicates Essential Learning Outcomes**

**Construction Technology Panel Participants  
Fall 2014**

|                     |  |   |
|---------------------|--|---|
| John Buttelwerth    | Cincinnati State Technical & Community College         | SCTAI Panel Lead Expert (Construction Technology) |
| Craig Wise          | University of Akron                                    | SCTAI Panel Lead Expert (Pre-Construction Design) |
| Tom Burns           | Cincinnati State Technical & Community College         | SCTAI Panel Expert                                |
| Eric Dunn           | Sinclair Community College                             | SCTAI Panel Expert                                |
| Hazem Elzarka       | University of Cincinnati                               | SCTAI Panel Expert                                |
| Todd Hoffman        | Hocking College  | SCTAI Panel Expert                                |
| Joseph Karpinski    | Kent State University                                  | SCTAI Panel Expert                                |
| Scott Laslo         | Columbus State Community College                       | SCTAI Panel Expert                                |
| Daniel Linger       | Stark State College                                    | SCTAI Panel Expert                                |
| Jason Sanson        | Youngstown State University                            | SCTAI Panel Expert                                |
| Geoffrey Wopershall | Stark State College                                    | SCTAI Panel Expert                                |
| Anton Harfmann      | University of Cincinnati                               | Item Writer                                       |
| Larry Miller        | Columbus State Community College                       | Item Writer                                       |
| Mac Ware            | The Ohio State University                              | Item Writer                                       |
| Cyndi Brill         | Ohio Department of Education                           | Program Specialist                                |
| Mike Cowles         | Ohio Department of Education                           | Assistant Director                                |
| Jim Austin          | Center on Education and Training for Employment at OSU |   |
| Pete Ross           | Ohio Department of Higher Education                    | SCTAI Special Coach                               |
| Jamilah Tucker      | Ohio Department of Higher Education                    | Director of Career-Technical Transfer Initiatives |
| Anne Skuce          | Ohio Department of Higher Education                    | Senior Associate Director, SCTAI                  |
| Misty McKee         | Ohio Department of Higher Education                    | Assistant Director, SCTAI                         |
| Jessi Spencer       | Ohio Department of Higher Education                    | Administrative Coordinator, SCTAI                 |