

# Construction Equipment II

<b>Career Cluster</b>	<b>Architecture and Construction II</b>
<b>Course Code</b>	17991
<b>Prerequisite(s)</b>	Introduction to Architecture and Construction, Construction Equipment I
<b>Credit</b>	.5 - 1
<b>Program of Study and Sequence</b>	Foundation Courses, Introduction to Architecture and Construction, Construction Equipment I, Capstone
<b>Student Organization</b>	SkillsUSA
<b>Coordinating Work-Based Learning</b>	This standard includes Workplace Tours, Service learning and Apprenticeship
<b>Industry Certifications</b>	None
<b>Dual Credit or Dual Enrollment</b>	TBD
<b>Teacher Certification</b>	Architecture & Construction Cluster Endorsement; Construction Pathway Endorsement; Maintenance/Operations Pathway; Construction Trades II Endorsement;
<b>Resources</b>	

## Course Description:

Students will gain an advanced understanding of safely operating the tools and equipment in the construction trades. Operation of earth-moving and construction equipment within the context of OSHA and industrial operations standards. Emphasis should be placed on controlling equipment to perform specific operations per industry standards and on basic troubleshooting and maintenance procedures.

## Program of Study Application

Construction Equipment II is an advanced pathway course in the Architecture & Construction career cluster. It can be found in both the Construction and Maintenance/Operations pathways. It is to be preceded by a cluster course, Construction Equipment I and followed by a capstone course.

## Indicator #CEII 1: Orientation to the Trade

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 1: Recall</b>	CEII 1.1 Explain the basic terminology, types, and uses of equipment	
<b>Level 1: Recall</b>	CEII 1.2 Identify career opportunities available to construction equipment operators and explain the purpose and objectives of an apprentice training program	
<b>Level 1: Recall</b>	CEII 1.3 Explain the responsibilities and characteristics of a good operator	
<b>Level 2: Skill/Concept</b>	CEII 1.4 Explain the importance of construction equipment safety	
<b>Level 1: Recall</b>	CEII 1.5 Describe preventive maintenance procedures	

**Indicator #CEI 2: Construction Equipment Safety**

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 1: Recall</b>	CEI 2.1 Explain the importance of safety when working with construction equipment	
<b>Level 1: Recall</b>	CEI 2.2 State the purpose of signs, tags, barricades, and lockout/tagout devices used on construction sites	
<b>Level 1: Recall</b>	CEI 2.3 Describe the long- and short-term health effects, first-aid measures, handling, and storage, and/or required personal protective equipment (PPE)	
<b>Level 1: Recall</b>	CEI 2.4 Identify safeguards used in a highway construction work zone	
<b>Level 1: Recall</b>	CEI 2.5 State the general guidelines for a safe operation, maintenance, and transportations of construction equipment	
<b>Level 1: Recall</b>	CEI 2.6 Explain the dangers of working around an excavation area with construction equipment	

<b>Level 1: Recall</b>	CEI 2.7 Describe the importance of Safety Data Sheets (SDS)	
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**Indicator # CEI 3: FORKLIFTS-Students understand and perform, where possible, lifting, transporting, and placement forklift operations with a focus on safety.**

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
<b>Level 2: Skill/Concept</b>	CEII 3.1 Demonstrate the operations of various components	
<b>Level 1: Recall</b>	CEII 3.2 Perform preventive maintenance procedures and explain the operations of various components	
<b>Level 2: Skill/Concept</b>	CEII 3.3 Demonstrate proper startup and operating procedures for forklift	

**Indicator #CEI 4: ON-ROAD DUMP TRUCKS-Students understand and perform, where possible, appropriate operations using On-Road Dump Trucks.**

<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
<b>Level 1: Recall</b>	CEII 4.1 Review the various types of on-road dump trucks	
<b>Level 1: Recall</b>	CEII 4.2 Review the requirements of a CDL for on road dump truck operation	
<b>Level 1: Recall</b>	CEII 4.3 Understand the use of instruments and specialized control systems in dump trucks	
<b>Level 1: Recall</b>	CEII 4.4 List the operator inspection and maintenance requirements	

<b>Level 2: Skill/Concept</b>	CEII 4.5 Demonstrate safe driving practices for dump trucks	
<b>Level 2: Skill/Concept</b>	CEII 4.6 Perform basic operations using a dump truck	

**Indicator #CEI 5: SKID STEER-Students understand and perform, where applicable, usage and proper functionality of skid steers.**

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 2: Skill/Concept</b>	CEII 5.1 Operate a skid loader safely	
<b>Level 1: Re- call</b>	CEII 5.2 Demonstrate the pre start inspection requirements for skid loader	
<b>Level 2: Skill/Concept</b>	CEII 5.3 Demonstrate startup, shutdown, and operations procedures for a skid loader	

**Indicator #CEII 6: EXCAVATION DIMENSIONS-Students perform calculations to carry out excavation operations.**

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 1: Re- call</b>	CEII 6.1 Explain and demonstrate the correct use of formulas for site layout	
<b>Level 1: Re- call</b>	CEII 6.2 Understand the proper sequence of operations in a formula	
<b>Level 1: Re- call</b>	CEII 6.3 Demonstrate understanding of different types of angles	
<b>Level 2: Skill/Concept</b>	CEII 6.4 Demonstrate how to calculate/estimate area and volume	

**Indicator #CEII 7: INTERPRETING CIVIL DRAWINGS-Students read and interpret construction site drawings to perform operations.**

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 2: Skill/Concept</b>	CEII 7.1 Analyze types of drawings and prints used in equipment operations	
<b>Level 2: Skill/Concept</b>	CEII 7.2 Demonstrate the ability to read and interpret drawings	
<b>Level 1: Recall</b>	CEII 7.3 Define common abbreviations	
<b>Level 1: Recall</b>	CEII 7.4 Explain the purpose of the plan specifications for projects	
<b>Level 1: Recall</b>	CEII 7.5 Describe how as-built drawings are prepared	

**Indicator #CEII 8: SITE WORK-Students perform appropriate on-site heavy equipment operations including interpreting grade stakes and controlling surface and ground and surface water at a worksite.**

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 1: Recall</b>	CEII 8.1 Explain the purpose of site safety	
<b>Level 1: Recall</b>	CEII 8.2 Understand the different types of sites and conditions (e.g. building site, highway site, etc.) and how they differ	

**Indicator #CEII 6: EXCAVATION DIMENSIONS-Students perform calculations to carry out excavation operations.**

<b>Webb Level</b>	<b>Sub-indicator</b>	<b>Integrated Content</b>
<b>Level 1: Recall</b>	CEII 9.1 Demonstrate the functions of various components of equipment	
<b>Level 2: Skill/Concept</b>	CEII 9.2 Demonstrate pre-start inspection requirements for various pieces of machinery	

<b>Level 2: Skill/Concept</b>	CEII 9.3 Demonstrate task-related work activities	
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