



National Craft Assessment and Certification Program  
S P E C I F I C A T I O N S

**HEAVY EQUIPMENT OPERATOR: SKID STEER**  
**AEN22SKID01**

February 2018

**Focus Statement**

A skid steer operator masters all concepts and procedures involved in the operation of skid steers. This includes basic daily preventive maintenance, safety checking, and control of the machine. He/she identifies the main attachments used with skid steers and uses the skid steer to perform the appropriate work-related tasks.

**Overview**

- Two-hour closed-book examination
- May use a basic function, non-printing calculator
- No extra papers, books, notes or study materials are allowed
- The minimum passing score is 75
- A corresponding hands-on Performance Verification is available

**NCCER Curriculum**

All NCCER knowledge assessments are referenced to NCCER's curriculum modules as listed on this specification sheet. You may order modules from Pearson (800.922.0579) or from NCCER's Online Catalog at [www.nccer.org](http://www.nccer.org).

**Assessment Development**

All questions are developed and approved by subject matter experts under the direction of NCCER.

**Credentials**

Upon successful completion of the knowledge assessment, NCCER will send applicable credentials to the assessment center.

**Score Report and Training Prescription**

Each candidate will have access to their assessment results including their overall score and recommended training.

**NCCER Registry**

Knowledge assessment results are recorded in NCCER's Registry and become a part of the portable record of an individual's NCCER credentials.

**Knowledge Assessment Contents:**

Content Domain	Number of Questions
<b>Safety</b> (22102-12)	10
<b>Basic Operations</b> (22104-12)	10
<b>Grades</b> (22106-12)	10
<b>Math</b> (22207-13)	10
<b>Skid Steer Operations</b> (22212-13)	30
<b>Total Number of Questions</b>	<b>70</b>

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Learning Objectives related to Assessment:

Safety	
Registry ID Number:	Module Title and Objectives:
22102-12	<b>Heavy Equipment Safety</b>
	Explain the importance of safety when working with heavy equipment.
	State the purposes of signs, tags, barricades, and lockout/tagout devices used on construction sites.
	Describe the long- and short-term health effects, first-aid measures, handling and storage, and/or required personal protective equipment (PPE) for a chemical using a material data safety sheet (MSDS).
	Identify safeguards used in a highway construction work zone.
	State general guidelines for safe operation, maintenance, and transportation of heavy equipment.
	Explain the dangers of working around an excavation area with heavy equipment.
Basic Operations	
Registry ID Number:	Module Title and Objectives:
22104-12	<b>Basic Operational Techniques</b>
	Describe basic prestart activities for heavy equipment machinery.
	Describe basic safety measures associated with operating heavy equipment.
	Explain how to properly start, operate, and shut down the following types of heavy equipment: utility tractors, dozers, loaders, backhoes, excavators, compaction equipment, motor graders, scrapers, on-road dump trucks, off-road dump trucks, forklifts, skid steers, and trenchers.
Grades	
Registry ID Number:	Module Title and Objectives:
22106-12	<b>Grades</b>
	Explain the terms used in grade work.
	Identify types of stakes and explain markings on grade stakes and benchmark (BM) stakes.
	Identify equipment used by the operator to check stakes.
	Explain different types of slopes and slope ratio.
	Check horizontal and vertical distance of cut and fill slope stakes.
	Check finish subgrade on a cross slope.
Math	
Registry ID Number:	Module Title and Objectives:
22207-13	<b>Excavation Math</b>
	Explain how to use formulas. a. Explain the sequence of operations in solving a problem using a formula. b. Explain how squares and square roots are derived. c. Define angles and identify the types of angles.
	Explain how math is used to solve right triangle problems.

	<ul style="list-style-type: none"> <li>a. Explain how to determine the length of a slope.</li> <li>b. Explain how a building is laid out using right triangle math.</li> </ul>
	<p>Define area and explain why determining the area of a space is required.</p> <ul style="list-style-type: none"> <li>a. Determine the area of squares and rectangles.</li> <li>b. Determine the area of a triangle.</li> <li>c. Determine the area of a trapezoid.</li> <li>d. Determine the area of a circle.</li> </ul>
	<p>Define volume and explain the purpose of calculating volume.</p> <ul style="list-style-type: none"> <li>a. Calculate the volume of a cube.</li> <li>b. Calculate the volume of a prism.</li> <li>c. Calculate the volume of a cylinder.</li> <li>d. Describe the estimating process used to determine the volume and weight of simple and complex excavations.</li> </ul>
<b>Skid Steer Operations</b>	
<b>Registry ID Number:</b>	<b>Module Title and Objectives:</b>
<b>22212-13</b>	<b>Skid Steers</b>
	<p>Identify and describe the components of a skid steer.</p> <ul style="list-style-type: none"> <li>a. Identify and describe chassis components.</li> <li>b. Identify and describe skid steer controls.</li> <li>c. Identify and describe skid steer instrumentation.</li> <li>d. Identify and describe skid steer attachments.</li> </ul>
	<p>Describe the prestart inspection requirements for a skid steer.</p> <ul style="list-style-type: none"> <li>a. Describe prestart inspection procedures.</li> <li>b. Describe preventive maintenance requirements.</li> </ul>
	<p>Describe the startup, shutdown, and operating procedures for a skid steer.</p> <ul style="list-style-type: none"> <li>a. State skid steer-related safety guidelines.</li> <li>b. Describe startup, warm-up, and shutdown procedures.</li> <li>c. Describe basic maneuvers and operations.</li> <li>d. Describe related work activities.</li> </ul>