



SEC -Science of Agricultural Mechanization Blueprints

This document contains the blueprints for the concentration areas
 in secondary Science of Agricultural Mechanization.

Course Code(s)	Test Code	Program Name	Supplemental Materials/Notes
991004	10171Y1-2010	Science of Agricultural Mechanization	

Curriculum	Perkins Assessment 2016-17		Teacher Evaluation Pilot 2016-17			
	Y1 Post-Test	Y2 Post-Test	Y1 Baseline	Y1 Post-Test	Y2 Baseline	Y2 Post-Test
Science of Agricultural Mechanization	MS-CPAS2*	NA*	NA*	NA*	NA*	NA*

* These assessments are subject to change based on funding and policy changes/updates. Information for test coordinators will be disseminated on the ordering process for the national certification by the Research and Curriculum Unit at Mississippi State University.



MS-CPAS2 Blueprint Summary

Assessment: Science of Agricultural Mechanization
Test Code: 10171Y1-2010
CIP Code: 010201
Course Codes: 991004
Type: CP

The MS-CPAS2 Blueprint Summary indicates the number of assessment questions related to each unit on the assessment and indicates the relative emphasis placed on each unit. All of the listed competencies will appear on the assessment, but because of the length of the assessment, not every competency will be equally represented in the assessment.

The MS-CPAS2 Blueprint Summary includes a variety of information, which is explained below:

Terms and Definitions	
Assessment:	This signifies the name of the assessment, which corresponds with the name of the pathway or program.
CIP Code:	Developed by the U.S. Department of Education's National Center for Education Statistics (NCES), CIP codes are a federal coding system utilized for assessment and reporting of fields of study and program completions activity tracking.
Test Code:	A unique code that serves to numerically identify a specific assessment
DOK Levels:	Based on Webb's Depth of Knowledge (DOK), this signifies the assessment item difficulty factor to be expected in each unit. The three levels are as follows: <i>1 = Recall and Reproduction, 2 = Skills and Concepts, 3 = Short-term Strategic Thinking</i> Some postsecondary programs will not use DOK levels until the next revision.
Instructional	The total number of hours assigned to a unit per the pathway's curriculum
Total Items:	The total number of items assigned to each unit on the assessment. It is calculated as follows: <i>(Unit Instructional Hours / Total Instructional Hours) * Total Active Items</i>
Active Items:	The number of items on the assessment that will be graded
Field-test Items:	The number of items that are being field-tested, or piloted, to determine their eligibility for inclusion as an Active Item on future assessments. These items are not graded and, thus, will not impact the student's final score.
Total Assessed Items:	The total number of items on the given assessment. It is calculated as follows: <i>Active Items + Field-test Items</i>

For more information regarding this MS-CPAS2 Blueprint Summary, please contact the Mississippi Assessment Center by phone at 1.866.901.7433 or by e-mail at helpdesk@rcu.msstate.edu.



Assessment: Science of Agricultural Mechanization Test Code: 10171Y1-2010 CIP Code: 010201 Total Hours: 80	DOK Level(s)			Instructional Hours	Total Items
	1	2	3		
Unit 1: Not on CPAS					
Unit 2: Management and Operation of Agricultural Equipment	1	2		10	15
1. Examine concepts of machinery management and maintenance. 2. Operate mechanized equipment in a safe and proper manner. 3. Describe and perform principles of preventive maintenance. 4. Perform preventive maintenance services. 5. Apply principles of engine diagnostics and testing.					
Unit 3: Analyzing Electrical and Electronic Systems	1	2		10	13
1. Describe and apply the use of electronic components and systems in agricultural equipment.					
Unit 4: Using Hydraulic and Pneumatic Systems	1	2		15	13
1. Apply principles of hydraulics. 2. Apply principles of pneumatics.					
Unit 5: Principles of Internal Combustion Engines	1	2		20	13
1. Describe the functions and operation of major systems of a small gasoline engine. 2. Disassemble, inspect, and reassemble a small gasoline engine.					
Unit 6: Principles of Metal Fabrication (Arc Welding)	1	2		15	13
1. Describe basic equipment, operations, and procedures, including safety precautions, of arc welding. 2. Perform arc welding techniques.					
Unit 7: Principles of Metal Fabrication (Oxyacetylene Cutting Operations)	1	2		10	13
1. Describe and demonstrate principles of oxyfuel cutting procedures.					
Active Items					80
Field-Test Items					20
TOTAL ASSESSED ITEMS					100