

MS-CPAS Blueprint Summary

Assessment:	Process Operations Technology
Test Code:	21386Y1-2015
CIP Code:	150699
Certificate:	Career
Type:	PS

The MS-CPAS 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-CPAS 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 Hours:	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>

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Assessment: Process Operations Technology	DOK Level(s)			Instructional Hours	Total Items
Test Code: 21386Y1-2015					
CIP Code: 150699					
Total Hours: 19					
PPT1133: Introduction to Process Technology	1	2		3	6
1. Discuss the history and development of various types of process industries. 2. Identify and describe the duties, responsibilities, and expectations of a process technician. 3. Not tested on MS-CPAS 4. Not tested on MS-CPAS 5. Identify fundamental process systems such as distillation, utilities and auxiliaries. 6. Investigate the relationship of math, physics, and chemistry to process technology.					
PPT 1413: Quality Concepts	1	2		3	7
1. Discuss the history of the quality movement in the United States and the state of the movement in the process industry today. 2. Describe the impact of quality on the organization's economic performance. 3. Understand and use effective system communication techniques to ensure operating consistency and reduce variability in the process. 4. Not tested on MS-CPAS 5. Discuss the principles associated with process orientation and systems thinking and theory. 6. Demonstrate how to follow procedures and policies in order to ensure operating consistency, reduce variability in the process, reduce waste and prevent safety incidents. 7. Use continuous improvement methodology to optimize processes. 8. Take preventive or corrective action to ensure operating consistency, reduce variability in the process, reduce waste and prevent safety incidents. 9. Use statistical thinking in one's work as necessary. 10. Use Quality Tools and team problem solving to resolve a real-world dilemma.					
PPT 1424: Process Equipment	1	2		4	8
1. Describe various types of piping equipment commonly found in process industries. 2. Describe various types of rotating equipment commonly found in process industries. 3. Describe various types of fixed equipment commonly found in process industries. 4. Not tested on MS-CPAS					
PPT 1434: Process Systems	1	2		3	6
1. Describe how process industry facilities are divided into systems. 2. Identify the types of systems used in the process industry. 3. Describe typical process technician responsibilities for the following ; operating systems, monitoring systems, troubleshooting systems, completing rounds, communication between inside and outside operator, and communication between process technician and other departments. 4. List factors that can affect plant economics.					

PPT 1513: Safety, Health, and Environment	1	2	3	7
1. Describe various types of physical hazards commonly found in process industries. 2. Describe the chemical hazards in process industries. 3. Describe the biological, ergonomic and plant specific hazards associated with various processes. 4. Describe the environmental hazards in process industries. 5. Identify the various Engineering controls used to make process areas safe. 6. Discuss the various Administrative controls - Programs and Practices. 7. Describe the importance and application of PPE in process industries. 8. Describe the important role OSHA plays in the process industries. 9. Not tested on MS-CPAS 10. Describe the other regulatory agencies that impact the Process Industry.				
PPT 1713: Process Instrumentation I	1	2	3	6
1. Describe and apply the major elements of process technology. 2. Describe and explain the functions and components of process control. 3. Describe and interpret the types of process industry drawings. 4. Not tested on MS-CPAS				
Active Items				40
Field-Test Items				10
TOTAL ASSESSED ITEMS				50

MS-CPAS Blueprint Summary

Assessment:	Process Operations Technology
Test Code:	21386Y2-2015
CIP Code:	150699
Certificate:	Technical
Type:	PS

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Assessment: Process Operations Technology Test Code: 21386Y2-2015 CIP Code: 150699 Total Hours: 6	DOK Level(s)			Instructional Hours	Total Items
	1	2	3		
PPT 2723: Process Instrumentation II	1	2		3	20
1. Recall the types of instrumentation used in the petrochemical and refining industry to monitor and control the process. 2. Given a drawing, picture or actual device, identify and describe pressure regulators. 3. Define the function of a switch. 4. Explain how relays are used in the process industry. 5. Explain the purpose of annunciator systems. 6. Review the purpose and operation of transmitters. 7. Identify and describe types of control schemes. 8. Explain the purpose of digital control. 9. Define terms associated with Programmable Logic Control (PLC). 10. Explain the purpose of a DCS. 11. Define terms associated with instrumentation power supply. 12. Define the terms associated with emergency shutdown systems, interlocks and alarms. 13. Describe the failure modes. 14. Explain how a control loop will respond to typical malfunctions.					
PPT 2443: Process Operations	1	2		3	20
1. Discuss the importance of this course and how the material learned here will prepare the student for work "on-the-job," including the role and responsibilities of a Process Technician. 2. Recall the key concepts from PT I and II, Equipment and Systems and understand how they build into an Operating System. 3. Discuss the importance of Equipment maintenance. 4. Use drawings and operating manual to learn about the basic elements of a specific operating unit. 5. Describe the conditions and activities related to the initial start-up or commissioning of the unit. 6. Describe the conditions and activities related to the Normal Operation of the unit. 7. Describe the conditions and activities related to the Abnormal Operation or Emergencies in the unit. 8. Describe the conditions and activities related to the Normal shutdowns of the unit.					
Active Items					40
Field-Test Items					10
TOTAL ASSESSED ITEMS					50