

MS-CPAS Blueprint Summary

Assessment: Tool and Die Technology
Test Code: 21397Y1-2010
CIP Code: 480507
Course Codes:
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: Tool and Die Technology	DOK Level(s)			Instructional Hours	Total Items
Test Code: 21397Y1-2010					
CIP Code: 480507					
Total Hours: 23.0					
TDT 1113: Safety and Fundamentals of Die Fabrication				3	5
1. Describe general safety rules for working in a shop/lab and industry. 2. Identify and apply safety around machine tool operations. 3. Explain lifting. 4. Explain the Material Safety Data Sheet (MSDS). 5. Explain fires. 6. Explain safety in and around tool and die situations. 7. Identify the basic parts of an elementary die and metals used in fabrication of dies. 8. Describe the use and maintenance of carbide and diamond tipped tools in die making equipment. 9. Describe the three cortical stages of shearing action on metals. 10. Safely fabricate, harden, temper, and test steel die components to a specified Rockwell hardness.					
DDT 1114: Fundamentals of Drafting				4	7
1. Discuss classroom procedures and drafting occupations. 2. Explain and apply safety rules and regulations. 3. Apply proper techniques in technical drawings. 4. Sketch and develop views of basic shapes. 5. Use geometric constructions. 6. Construct orthographic projections. 7. Dimension objects. 8. Construct sectional views.					
TDT 1144: Die Fabrication I				4	7
1. Discuss and apply general tool and die shop safety. 2. Identify and describe the various components of a blanking die. 3. Fabricate die components to specifications. 4. Assemble and try out blanking die.					
MST 1114-6: Power Machinery I				4	7
1. Discuss and apply general machine shop safety and job planning. 2. Discuss, set up, and perform operations using a band saw and drill press safely. 3. Perform cutting operations to project specifications safely. 4. Set up milling machine and perform milling operations safely.					
MST 1124-6: Power Machinery II				4	7
1. Discuss and apply general tool and die shop safety. 2. Prepare the engine lathe, and perform various operations according to specifications safely. 3. Explain and use a precision surface grinder safely. 4. Set up and perform vertical milling operations safely according to project specifications.					
MST 2714-6: Computer Numerical Control Operations I				4	7
1. Discuss and apply general machine shop safety. 2. Describe CNC machining, uses, and applications of CNC program.					



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CIP Code: 480507	DOK	Instructional	Total
3. Discuss commands for CNC machine codes.			
4. Discuss tooling for CNC operations, and safely use CNC mill, CNC lathe, and CNC machine centers to project specifications.			
Active Items			40
Field-Test Items			10
TOTAL ASSESSED ITEMS			50

MS-CPAS Blueprint Summary

Assessment: Tool and Die Technology
Test Code: 21397Y2-2010
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Test Code: 21397Y2-2010					
CIP Code: 480507					
Total Hours: 19.0					
TDT 1133: Die Design I				3	6
1. Discuss and apply general tool and die shop safety. 2. Describe the basic types of die designs and characteristics. 3. Sketch a die showing its components and strip layout. 4. Make required calculations for die fabrications. 5. Select, describe, and determine procedures obtaining die-to-press relationship.					
TDT 2153: Die Design II				3	6
1. Discuss and apply general tool and die shop safety. 2. Design various dies, and select proper tool steel for fabrication. 3. Describe CAD/CAM as it applies to die design.					
TDT 2164: Die Fabrication II				4	8
1. Discuss and apply general tool and die shop safety. 2. Fabricate progressive die components to specifications. 3. Compare and contrast EDM fabrication to conventional fabrication procedures.					
TDT 2174: Die Fabrication III				4	8
1. Discuss and apply general tool and die shop safety. 2. Describe wire EDM application. 3. Fabricate a compound die.					
MST 2724-5: Computer Numerical Control Operations II				5	12
1. Discuss and apply general machine shop safety. 2. Manipulate CNC machine programs to specifications safely. 3. Perform CNC procedures safely to specifications. 4. Apply preventive maintenance procedures for CNC machines. 5. Discuss operation of CMM (Coordinant Measuring Machine). 6. Discuss the theories of flexible manufacturing equipment.					
Active Items					40
Field-Test Items					10
TOTAL ASSESSED ITEMS					50