COURSE MODULES

Module	Name
Intro — Mastercam	Introduction to Mastercam
1	Mastercam Interface/Layout
2	Setting Up Your Part
3	Gnomon Control and Plane Creation
4	General Design
5	Chaining and Toolpath Parameters
6	Toolpath Setup and Creation
7	Tool Manager
8	Mastercam Simulator and Code Expert

1 — MASTERCAM INTERFACE/LAYOUT

Competency	Objective	Cognitive	Importance	Difficulty
Interface **MC 1.1a** — The student will describe various aspects of the interface.				
	MC1.1a.1 — The student will describe the major elements of the ribbon bar in context.	2	3	2
	MC1.1a.2 — The student will identify the benefits of using the selection bar.	1	3	2
	MC1.1a.3 — The student will identify the main functions of the Quick Mask toolbar.	1	2	2
	MC1.1a.4 — The student will describe the functions of the status bar.	2	2	2
	MC1.1a.5 — The student will describe the advantage of the gnomon.	2	3	2
	MC1.1a.6 — The student will identify the benefits of the function prompt.	1	2	2

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Competency	Objective	Cognitive	Importance	Difficulty
Interface **MC 1.1b** — The student will describe the various managers and describe how they are used during design and programming.				
	MC1.1b.1 — The student will identify the benefits of the various managers.	1	3	2
	MC1.1b.2 — The student will describe the use of managers during design and programming.	2	2	2

2 — SETTING UP YOUR PART

Competency	Objective	Cognitive	Importance	Difficulty
Setting up your part MC 1.2 — The student will apply the concepts involved with setting up a part to be accurately machined in Mastercam.		3	2	2
	MC 1.2.1 — The student will demonstrate manipulating the model within the graphics view, including rotating, zooming in/out, and panning.	3	3	2
	MC 1.2.2 — The student will demonstrate the coordinate system in Mastercam and how it relates to various T planes, C planes, and WCS.	3	3	3
	MC 1.2.3 — The student will identify the benefits of selecting a machine prior to programming a part.	1	1	2
	MC 1.2.4 — The student will demonstrate job setup with stock.	3	2	2

3 — GNOMON CONTROL AND PLANE CREATION

Competency	Objective	Cognitive	Importance	Difficulty
Gnomon Control and Plane Creation **MC 1.3** — The student will apply the Mastercam gnomon and plane creation.		3	4	4
	MC 1.3.1 — The student will apply the translation and rotation tools of the gnomon.	3	4	3
	MC 1.3.2 — The student will identify the difference between GView, CPlane, WCS, and TPlane.	1	3	2
	MC 1.3.3 — The student will create and manipulate new planes.	3	3	2
	MC 1.3.4 — The student will identify the "Follow Rules" settings for how planes interact in Mastercam.v	1	2	1

4 — BASIC DESIGN

Competency	Objective	Cognitive	Importance	Difficulty
Basic Design: Wireframe **MC 1.4a** — The student will demonstrate geometry creation and how it pertains to the level manager and solids manager.				
	MC 1.4a.1 — The student will describe the general workflow of creating geometry on the screen.	2	4	2
	MC 1.4a.2 — The student will create basic wireframe geometry based off of 2D prints (PDFs).	3	4	2
	MC 1.4a.3 — The student will create and manipulate levels.	3	3	2

Competency	Objective	Cognitive	Importance	Difficulty
Basic Design: Solids and Model Prep MC 1.4b — The student will demonstrate solid geometry creation and editing and how it pertains to the solids manager.				
	MC 1.4b.1 — The student will demonstrate basic solid creation including extrude boss and cut.	3	3	2
	MC 1.4b.2 — The student will demonstrate interaction within the solids manager.	3	2	2
	MC 1.4b.3 — The student will identify the major tools used in Model Prep to prepare or adjust a model for machining.	1	2	2

5 — CHAINING AND TOOLPATH PARAMETERS

Competency	Objective	Cognitive	Importance	Difficulty
Chaining and Toolpath Parameters **MC 1.5** — The student will demonstrate general toolpath creation skills.				
	MC 1.5.1 — The student will describe the general steps needed to program a toolpath.	2	3	3
	MC 1.5.2 — The student will demonstrate proper chaining techniques and identify results based on examples.	3	5	4

6 — TOOLPATH SETUP AND CREATION

Competency	Objective	Cognitive	Importance	Difficulty
Toolpath Setup and Creation MC 1.6 — The student will demonstrate proper knowledge of toolpath creation.				
	MC 1.6.1 — The student will demonstrate proper use of the toolpaths manager to edit, move, select, and display toolpaths.	3	4	3
	MC 1.6.2 — The student will demonstrate proper programming and iteration techniques to "fine tune" a desired toolpath.	3	4	2

7 — TOOL MANAGERS

Competency	Objective	Cognitive	Importance	Difficulty
Tool Managers MC 1.7 — The student will understand the general use of the integrated and standalone integrated Mastercam Tool Manager.		2	2	2
	MC 1.7.1 — The student will identify the major benefits of the integrated tool manager.	1	2	2
	MC 1.7.2 — The student will demonstrate the creation of tool assemblies, adding to tool libraries, and editing tool projection.	3	3	2

8 — MASTERCAM SIMULATOR AND CODE EXPERT

Competency	Objective	Cognitive	Importance	Difficulty
Simulation and Posting MC 1.8 — The student will understand the general process to simulate and post toolpaths using the Mastercam Simulator and Mastercam Code Expert.		2	2	1
	MC 1.8.1 — The student will demonstrate backplotting and verifying a toolpath in the Mastercam Simulator.	3	3	1
	MC 1.8.2 — The student will demonstrate setting up a fixture to be accurately represented in the Mastercam Simulator.	3	3	2
	MC 1.8.3 — The student will demonstrate posting out code in Mastercam and reviewing it in Code Expert.	3	3	1
	MC 1.8.4 — The student will identify the code created in Code Expert.	1	1	1
	MC 1.8.5 — The student will identify the various settings in Code Expert.	1	1	1

MC
Mastercam
CERTIFICATION