

3D MILL COURSE SYLLABUS

COURSE DESCRIPTION

Manufacturing today is rapidly evolving, and staying on the cutting edge is critical for professional development. Mastercam 2019 puts cutting-edge CAM tools just a mouse click away. With the right training, these tools will assist you in manufacturing the future!

This course will provide advanced knowledge on Mastercam 3D milling topics. You will learn the critical steps needed to take a digital file all the way to the shop floor while learning how to build and setup tool libraries and your machine and control definitions, as well as create 3D geometry and machine complex 3D parts.

METHOD OF INSTRUCTION

This course was designed to be self-paced. Each lesson contains a set of learning objectives, assessment questions, and challenges to be completed by the student.

OBJECTIVES

After completing this course, you will be able to:

- Explain and discuss the workflow for creating 3D toolpaths.
- Manage the workflow of taking a model and creating NC code.
- Demonstrate proficiency in Mastercam 2019.
- Properly setup a TOOLDB file.

COURSE PREREQUISITES

Completion of Mastercam 2019 2D Mill (at a Reseller, school, or online) or a solid understanding of the topics covered in the Mastercam 2019 2D Mill course on Mastercam University.

COURSE TOPICS / COURSE COMPLETION TIME

Each lesson contains video guides, step-by-step documents, challenges, and assessments. Completion time will vary from student to student. The information provided below is the time required to watch all the content. Questions are provided for each video as well as pre-/post-lesson questions and challenge assignments. Challenge assignments range from 2-15 minutes in length.

1. Introduction – 10 minutes.
2. Machine and Control Definitions – 25 minutes
3. Tool Manager – 40 minutes
4. Setting up a CAM program – 22 minutes
5. Model Preparation – 20 minutes
6. Machining a Simple Fixture – 30 minutes
7. Machining a 3D Gas Pedal: Setup 1–50 minutes
8. Machining a 3D Gas Pedal: Setup 2 – 35 minutes
9. Exploring more Surface Finish Options – 30 minutes
10. Backplot and Simulate Toolpaths – 25 minutes
11. Generate NC Files – 15 minutes
12. Conclusion – 10 minutes

(continued)

COURSE REQUIREMENTS

- To view the training materials, you need a device with internet access.
- To complete the exercises, you need a PC with Mastercam Mill 3D or Demo/Home Learning Edition installed.

GRADING

If you are taking this course in a school/classroom environment, the assessment grades will be available to your instructor via the instructor dashboard. Challenge assignments will not be graded in the system and must be reviewed manually.

NEXT STEPS

After completion of this course, students are encouraged to continue exploring 3D toolpath creation. If you have access to multiaxis toolpaths, you are also encouraged to explore areas where multiaxis toolpaths simplify the machining process. Proceed to a Mastercam Lathe course after completing this 3D Mill course.

**For more information, visit
UNIVERSITY.MASTERCAM.COM**

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