MCH 103. Intro to Computer Aided Manufacturing Level I. 3 Credits. (3 Lec) F
This is an online course that teaches the fundamental concepts necessary to interpret drawings and produce sketches for machine tool applications as applied to CNC Machining. Topics include advanced sectioning, geometric dimensioning, geometric tolerancing, assembly and drawing.

MCH 120. Blueprint Reading. 2 Credits. (2 Lec) F
This course is designed to teach the student to read and interpret blueprints and technical drawings for the purpose of constructing or assembling parts, assemblies, or systems. It includes instruction in the principles of engineering graphics, including orthographic projection, isometric projection, and 3D modeling.

MCH 122. Introduction to CAM (GibbsCAM). 3 Credits. (2 Lec, 1 Lab) S
PREREQUISITE: MCH 120, and MCH 231 or MCH 234. MCH 122, Intro to CAM (GibbsCAM), is designed to give students practical experience in the application of a Computer Aided Machining Program to create production code for CNC Mills and Lathes. The class includes basic CAM drafting practices, Coordinate Systems, Modeling (surface and solid) and tool development.

MCH 130. Machine Shop. 3 Credits. (Lec 1, Lab 2) F
The content covers a broad range of manual and CNC machining with the emphasis on shop and work area safety. The course will include an introduction to measurement and materials. Job planning, bench work and layout will be presented.

MCH 160. Machine Shop Level I. 3 Credits. (1 Lec. 2 Lab) F
Machine Shop I introduces students to the common shop equipment used in the modern machining and manufacturing. Through a combination of lectures and practical lab exercises, the student will utilize common and essential machine shop tools and develop safe and correct practices thru proper use. During this class students will apply basic operation of metal lathes, Milling machines, pedestal/bench grinders, saws, and drill press. This course is also an introduction to measurement, materials, job planning, bench work and precision layout.

MCH 230. Tooling and Work Holding for CNC. 2 Credits. (2 Lec) S
PREREQUISITE: MCH 234. MCH 230, Tooling and Fixturing is a course designed to introduce students to the wide variety and complexity of work holding and tooling available for CNC Machining. This class will discuss tool design, shape, and its effects on machining. Work holding and its effect on part density, repeatability and rigidity will also be discussed.

MCH 231. CNC Turning Operations Level I. 3 Credits. (3 Lec) F
CO-REQUISITENTS: MCH 234 CNC Milling Operations Level I. This course is an introduction to CNC Turning Centers and the safe operation of common operating procedures, set-up and maintenance and control panel. The student will become acquainted with the ways in which various companies utilize CNC machine tools.

MCH 232. CNC Lathe Operation Level II. 3 Credits. (3 Lab) S
PREREQUISITE: MCH 231. MCH 232, CNC Lathe Operation Level II, reinforces student’s understanding of CNC Lathe operation and programming developed in MCH 231. Concepts to be covered include program planning (setup sheets, tool setup, offsets) metrology, program trouble shooting and intro to bar pulling.

MCH 234. CNC Milling Operations Level I. 3 Credits. (3 Lec) F
CO-REQUISITENTS: MCH 231 CNC Turning Operations Level I. This course is an introduction to CNC Milling Centers. The common operating procedures, set-up, and maintenance of the machine and control panel will be introduced and implemented. The student will become acquainted with the way CNC machine tools are utilized, while learning programming setup and operations, methods for the installation of tools, establishing machine, fixture, and part zero reference offsets.

MCH 235. CNC Milling Programmer Level II. 3 Credits. (3 Lab) S
PREREQUISITE: MCH 234. MCH 235, CNC Mill Programmer Level II, reinforces student’s understanding of CNC Mill operation and programming. Concepts to be covered include program planning, setup sheets, tool setup, offsets, metrology and intro to fourth axis.
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.