	J.S. University, Shikohabad Faculty of Mechanical engineering	Value Added Course AY: 2020-21

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Value Added Courses

Faculty of Mechanical Engineering

	J.S. University, Shikohabad Faculty of Mechanical engineering	Value Added Course
		AY: 2020-2021

CNC PROGRAMMING AND CNC MACHINING

Learning Objectives:

This Course will provide knowledge of CNC Programming and CNC Machining

Duration: 30 Hours. (Theory and Practical)

Course Outcomes: -

After completion of the course the student shall be able to:-

1. Evaluate manufacturing assignment based on critical thinking and problem solving skills. Become a good communicator and effective team member
2. Practice writing complex "G" code programs for CNC turning centers that meet the part specification
3. Interpret and demonstrate complex "G" code programs for CNC milling centers that meet the part specification
4. Prepare "G: code programs to perform secondary operations including tapping, countersinking, counter boring, and threading.
5. Describe and illustrate common problems with tooling and fixtures in CNC programming and machining.
6. Explain applications and advantages of CNC machines and technology.

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Syllabus

Module I:

Introduction Numerical control on CNC machine tools CNC control .Calculation of technological data for CNC machining. CNC clamping system. Drawing interpretation practice, identifying feature from sketch and operation from feature

Module 2:

Introduction to CNC programming, Introduction and demonstration of line programs CNC programming or lathe & milling machine using is o codes into the CNC simulator. CNC programming for lathe and milling machines using different machining cycles into the CNC simulator. G & M Codes, Interpolations, Canned Cycles and Subprograms.

Module 3:

Tool compensations Exposure for programming and simulator of FANUC, SINUMERIC . Programming Plan and optimize programs for CNC turning operations. Prepare operation and operation sequence for the lathe operations like turning, grooving etc. Prepare & set CNC lathe operations.

Module 4:

Plan and optimize programs for CNC Milling operations. Prepare & set CNC Milling operations and test run programmed.

Module 5:

Comparison of manual part programming and CAPP for a simple component, Automatic Tool Changer, Automatic Pallet Control,

References:-

1. Programming of CNC machines, by Ken Evans
2. CNC Programming Handbook by Peter Smid
3. NC Control by Kundra Rao, Tewari.
4. G codes, M codes Handbook, by Mazak Corporation

Course Coordinator
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Dr. Akhilesh

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