

FR. Conceicao Rodrigues College of Engineering
 Father Agnel Ashram, Bandstand, Bandra-west, Mumbai-50
Department of Production Engineering

S.E. (Production) (semester IV) (2020-2021)

Lab Plan

Subject: CNC and 3-D Printing (MESBL401)

Credits-02

Faculty: Dr. A.B.Rane (CNC)

Syllabus (Any four)

Sr. No.	List of Exercises
1	Part programming and part fabrication on CNC Turning trainer (Involving processes like Step turning, facing, Taper turning, threading, etc.) (One job in a group of 4-5 students)
2	Part programming and part fabrication on CNC Milling trainer (Involving processes like contouring, drilling, facing, pocketing etc.) (One job in a group of 4-5 students)
3	Part Programming Simulation for any Unconventional Machining Process (Electric Discharge Machining, laser cutting Machining, Plasma Cutting Machining etc.)
4	Tool-path generation by translation of part geometry from computer aided design (CAD) to computer aided manufacturing (CAM) systems.
5	Post processing of Code generated via CAM system

CO Statements

Learner will be able to

PEL401.1	Write programme for CNC Lathe
PEL401.2	Write programme for CNC Mill
PEL401.3	Simulate Tool path
PEL401.4	Post process code

CO-PO-PSO Mapping.

CO# / PO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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PEL401.1	3	0	3	-	-	-	-	-	-	-	-	2
PEL401.2	3	2	3	-	-	-	-	-	-	-	-	2
PEL401.3	3	2	3	-	-	-	-	-	-	-	-	2
PEL401.4	3	2	3	-	-	-	-	-	-	-	-	2

CO# / PSO#	PSO1	PSO2
PEL401.1	3	-
PEL401.2	3	-
PEL401.3	3	-
PEL401.4	3	-

CO Assessment

Final CO achievement = 80 % of Direct assessment + 20 % of Indirect assessment

Direct assessment = 40 % of Lab work + 60 % of End semester result

In-direct assessment = Course exit survey

Curriculum Gap/Content beyond syllabus (if any).

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Lab Plan

Week No.	Topics	Hours (Per Batch)
<u>Week 4</u> (15/2/2021 to 20/2/2021)	Part programming and part fabrication on CNC Turning	2
<u>Week 5</u> (22/2/2021 to 27/2/2021)	Part programming and part fabrication on CNC Turning	2
<u>Week 6</u> (01/3/2021 to 06/3/2021)	Unit Test 1	2
<u>Week 7</u> (08/3/2021 to 13/3/2021)	Part programming and part fabrication on CNC Turning	2
<u>Week 8</u> (15/03/2021 to 20/3/2021)	Part programming and part fabrication on CNC Milling	2

<u>Week 9</u> (22/03/2021 to 27/3/2021)	Part programming and part fabrication on CNC Milling	2
<u>Week 10</u> (29/03/2021 to 3/04/2021)	Part Programming Simulation for Electric Discharge Machining	2
<u>Week 11</u> (05/4/2021 to 10/4/2021)	Tool-path generation by translation of part geometry from computer aided design (CAD) to computer	2
<u>Week 12</u> (12/4/2021 to 17/4/2021)	Tool-path generation by translation of part geometry from computer aided design (CAD) to computer	2
<u>Week 13</u> (19/4/2021 to 24/4/2021)	Post processing of Code generated via CAM system	2
<u>Week 14</u> (26/4/2021 to 30/4/2021)	Unit Test 2 and Term End	