Bharath Institute of Higher Education and Research

[Declared Under Section 3 of UGC Act, 1956]
Chennai – 600 073

INTERNAL QUALITY ASSURANCE CELL (IQAC)

DOCUMENTS SUBMISSION FORM

Date of Submission	22/12/2020
Type of Documents	Value Added Course program Report (online)
Description	Skill development on CNC lathe Machine
Enclosures	a) Requisition letter
	b) Circular
	c) Curriculum
	d) Schedule
	e) Attendance Sheet
	f) feedback form
	g) Certificate
	h) Image
No. of Pages	12
Submitted By	**Name** : R. HARIHARAN
	Designation : Assistant professor
	Department : Mechanical Engineering
	Signature :

For Office Use Only

Verified By:	K. Sakthivel	Sign:	Date: 22/12/20
Uploaded By:	K. S. Senthil Kumar	Sign:	Date: 22/12/20
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Requisition Letter

Date: 12.11.2020

From

The HOD,

Department of Mechanical Engineering,

Bharath Institute of Higher Education and Research,

Selaiyur, Chennai.

To

The Dean Engineering,

Bharath Institute of Higher Education and Research,

Selaiyur, Chennai.

Respected Sir,

Sub: Requisition for conducting Value added course (online) – reg.

School of Mechanical Sciences has planned to conduct Value added course on "Skill Development on CNC Lathe Machine" on 9/12/2020. In this regard we kindly request you to grant permission for the same.

Thanking You

Ramadoss

HOD/MECH

Dean Engineering

Head of the Department
Department of Mechanical Engineering
Bharath Institute of Higher Education and Research
(Dec.u/s 3 of UGC Act.1956)
Selaiyur, Chennai-600 073

DEAN
BHARATH INSTITUTE OF HIGHER EDUCATION & RESEARCH
(Declared as Deemed to be University U/S 3 of UGC Act. 1956)
Chennai-600 073. INDIA.

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Date: 16.11.2020

Department of Mechanical Engineering

Circular

The of Department of Mechanical Engineering, BIHER glad to conduct on five days value added program on "***Skill Development on CNC Lathe Machine***" from 09.12.2020 for 30 hours. Those who are interested to participate do register your name to the program coordinator.

All reregistered students must attend all the classes without fail. The students who are completed the course successfully with good score will get the course completion certificate from the institute/Department.

Resource person: Mr.S.Thirumavalavan and Mr.S.Nakkeeran

Maximum no. of registration Allowed – 60.

***First come first serve basis.**

Program coordinator

Mr.V.P.Durairaj

Mr.R J Golden Renjith Nimal

Department of Mechanical Engineering
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Department of Mechanical Engineering

Skill Development on CNC Lathe Machine

OBJECTIVE:

- The aim of the subject is to provide make the students to understand the CNC.
- To emphasize the knowledge on the quality improvement, automation, and advanced manufacturing techniques to create the highest-caliber products quickly, efficiently, inexpensively, and in synchronization with the marketing, sales, and customer service of the company.

MODULE 1 **Advanced Manufacturing Processes** **(10Hrs)**

[DAY: 1]

The Subject deals with Advanced Manufacturing process viz. computer numerical control 5 axis machining, EDM. Various machine elements of CNC 5 Axis machining, CNC EDM Wire cut machining and CNC EDM Die sinker machining. Constructional features of these machines and differentiate between conventional and CNC machines. Illustrate the working principle and operation of these CNC machine

[DAY: 2]

Structure of CNC part programme and preparation of part programme for various machining operations. Usage of different programming cycles. Coordinate Systems used in CNC 5 axis machine. Execute part programme on CNC machines (Machining centre's and EDM's etc.). Preventive and periodical maintenance of CNC machines and Safety measures to be followed.

[DAY: 3]

Various machine elements of CNC turning machine & CNC Milling machines/Machining centres and their constructional features. Differentiate between conventional and CNC machines. Illustrate the working principle and operation of CNC machine. Structure of CNC part programme and preparation of part programme for various machining operations such as milling, drilling and turning and their simulation with software.

MODULE II CAD/CAM **(5 Hrs)**

[DAY: 4]

This Subject deals with Basics of Engineering Drawing, Orthographic projections, Isometric Projections. Introduction to AutoCAD, Co-ordinate system, 2D Drafting, 3D Modeling., Design need and requirements, Importance of Parametric constraints, Types of CAD software and their features, Necessity of CAD-CAM integration. Creating and Editing features, Sheet metal components, Surface modeling, Designing. Developing parametric modeling , Behavioral modeling, Mechanism simulation.

MODULE III

[DAY: 5] CNC Technology **(10 Hrs)**

CNC technology basics: Difference between CNC and conventional lathes. Advantages and disadvantages of CNC machines over conventional machines. Schematic diagram of CNC system. Axes convention. Working of parts explained using multimedia CNC teachware. Parts shown on machine.

Programming - sequence, formats, different codes, canned cycles. Absolute and incremental programming. Tool nose radius compensation (G41/42). Cutting tool materials, cutting tool geometry - insert types, holder types, insert cutting edge geometry, ISO nomenclature for turning tools, boring tools, inserts. Cutting parameters - cutting speed, feed rate, depth of cut, constant surface speed, limiting spindle speed. Process planning, tool selection and cutting parameters selection. Explained using multimedia CNC teachware and CNC machine simulator.
CNC part programming with simple exercises and various programming codes. Practice on CNC machine simulator. CNC machining center operation in various modes: jog, single block, auto, MDI, edit, etc. Program entry. Setting of tool offsets, entry of tool radius. Practice on CNC machine simulator.

MODULE IV

[DAY: 6] **(5 Hrs)**

Usage of different programming cycles. CNC Grinding machine construction and its elements, CNC Part programming on Grinding machine. Coordinate Systems used in CNC Grinding. Execute part programme on CNC machines (Machining centre's and Turning centre's, Grinding machines etc.). Preventive and periodical maintenance of CNC machines and Safety measures to be followed.

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Department of Mechanical Engineering
One Week Value added Program on "*Skill Development on CNC Lathe Machine*"
9th Dec to 15th Dec 2020

Date	Morning Session (9 AM – 12 PM)	Afternoon Session (1:30 PM – 3:30 PM)
09 – 12 – 2020	**Program Inauguration** **Mr.S.Thirumavalavan** *computer numerical control 5 axis machining, EDM. Various machine elements of CNC 5 Axis machining, CNC EDM Wire cut machining and CNC EDM Die sinker machining.*	**Mr.S.Nakkeeran** *Constructional features of these machines and differentiate between conventional and CNC machines. Illustrate the working principle and operation of these CNC machine*
10 – 12 – 2020	**Mr.S.Nakkeeran** *Structure of CNC part programme and preparation of part programme for various machining operations. Usage of different programming cycles. Coordinate Systems used in CNC 5 axis machine*	**Mr.S.Thirumavalavan** *Execute part programme on CNC machines (Machining centre's and EDM's etc.). Preventive and periodical maintenance of CNC machines and Safety measures to be followed.*
11 – 12 – 2020	**Mr.S.Thirumavalavan** *Various machine elements of CNC turning machine & CNC Milling machines/Machining centres and their constructional features. Differentiate between conventional and CNC machines. Illustrate the working principle and operation of CNC machine.*	**Mr.S.Nakkeeran** *Structure of CNC part programme and preparation of part programme for various machining operations such as milling, drilling and turning and their simulation with software.*
12 – 12 – 2020	**Mr.S.Nakkeeran** *Isometric Projections. Introduction to AutoCAD, Co-ordinate system, 2D Drafting, 3D Modeling., Design need and requirements, Importance of Parametric constraints, Types of CAD software and their features, Necessity of CAD-CAM integration.*	**Mr.S.Thirumavalavan** *Creating and Editing features, Sheet metal components, Surface modeling, Designing, Developing parametric modeling, Behavioral modeling, and Mechanism simulation.*
14 – 12 – 2020	**Mr.S.Thirumavalavan** *CNC technology basics: Difference between CNC and conventional lathes. Advantages and disadvantages of CNC machines over conventional machines. Schematic diagram of CNC system. Axes convention. Working of parts explained using multimedia CNC teachware. Parts shown on machine.*	**Mr.S.Nakkeeran** *Programming - sequence, formats, different codes, canned cycles. Absolute and incremental programming. Tool nose radius compensation (G41/42). Cutting tool materials, cutting tool geometry - insert types, holder types, insert cutting edge geometry.*
15 – 12 – 2020	**Mr.S.Nakkeeran** *Usage of different programming cycles. CNC Grinding machine construction and its elements, CNC Part programming on Grinding machine. Coordinate Systems used in CNC Grinding. Execute part programme on CNC machines (Machining centre's and Turning centre's, Grinding machines etc.).*	**Mr.S.Thirumavalavan** *Preventive and periodical maintenance of CNC machines and Safety measures to be followed.* ***Quiz/ Feedback / valedictory Session***

Program Coordinator:
Mr.V.P.Durairaj
Mr.R J Golden Renjith Nimal
Assistant Professor,
E-Mail: vpdurairaj57@gmail.com
goldenrenjith.mech@bharathuniv.ac.in

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09-12-2020

Skill Development on CNC Lathe Machine

Attendance sheet

S.No	Reg.No	Name	Department
1.	U13ME005	ABHISHEK MARKI	Mechanical Engineering
2.	U13ME006	ABINASH MISHRA	Mechanical Engineering
3.	U13ME007	ACHARI RAGHU GANAPATHY	Mechanical Engineering
4.	U13ME008	ADARSH GIRI	Mechanical Engineering
5.	U13ME009	ADITYA ANANDKAR	Mechanical Engineering
6.	U13ME010	ADITYA RAJ	Mechanical Engineering
7.	U13ME011	AISHWARY PRATAP SINGH	Mechanical Engineering
8.	U13ME012	AJIT KUMAR KESHRI	Mechanical Engineering
9.	U13ME013	AJMAL ALIKHAN M	Mechanical Engineering
10.	U13ME014	AKASH PANDEY	Mechanical Engineering
11.	U13ME027	AMLAN BHUYAN	Mechanical Engineering
12.	U13ME028	AMUDHAN R	Mechanical Engineering
13.	U13ME029	ANIL KUMAR GOPE	Mechanical Engineering
14.	U13ME030	ANKIT	Mechanical Engineering
15.	U13ME031	ANKIT KUMAR	Mechanical Engineering
16.	U13ME032	ANKIT PRAVAKAR	Mechanical Engineering

17.	U13ME033	ANMOL PURTY	Mechanical Engineering
18.	U13ME034	ARAVINDAN R	Mechanical Engineering
19.	U13ME036	ARUL SELVAN K	Mechanical Engineering
20.	U13ME037	ARUN KUMAR YADAV	Mechanical Engineering
21.	U13ME121	MOHAMED SUHAIL S	Mechanical Engineering
22.	U13ME122	MOHAMED YASIN K	Mechanical Engineering
23.	U13ME123	MOHAMMAD JAWED RAIN	Mechanical Engineering
24.	U13ME124	MOHAMMED IBRAHIM N	Mechanical Engineering
25.	U13ME125	MOHAMMED IMRAN BAIG I	Mechanical Engineering
26.	U13ME159	RAHUL RAM R	Mechanical Engineering
27.	U13ME160	RAJA BAL	Mechanical Engineering
28.	U13ME161	RAJAN KUMAR	Mechanical Engineering
29.	U13ME162	RAJIYAPRABU P	Mechanical Engineering
30.	U13ME163	RAJMOHAN KUMAR	Mechanical Engineering
31.	U13ME713	SANDEEP.S	Mechanical Engineering
32.	U13ME714	KASINATHAN R	Mechanical Engineering
33.	U13ME717	A.KARTHIKEYAN	Mechanical Engineering
34.	U13ME719	DIPTADIP ROY	Mechanical Engineering
35.	U13ME722	RAMAIAHGARI HARI PRASAD	Mechanical Engineering
36.	U14ME003	ABHILASH .S	Mechanical Engineering
37.	U14ME004	ABHISHEK	Mechanical Engineering
38.	U14ME005	ABHISHEK KUMAR	Mechanical Engineering

39.	U14ME006	ABISHEK .N	Mechanical Engineering
40.	U14ME007	ABI SHANTH.C	Mechanical Engineering
41.	U14ME161	JYOTI RANJAN BADU	Mechanical Engineering
42.	U14ME162	KANCHARLA HARISH	Mechanical Engineering
43.	U14ME168	KARTHICK .S	Mechanical Engineering
44.	U14ME169	KARUNAGARAN.K	Mechanical Engineering
45.	U14ME170	KATTA.SAICHAND	Mechanical Engineering
46.	U14ME171	KESHAVAN.R	Mechanical Engineering
47.	U14ME172	KILLO SAI VIJENDRA PADAL	Mechanical Engineering
48.	U14ME175	KONISHETTY PHANEENDRA	Mechanical Engineering
49.	U14ME176	KORADA PRABHAKAR RAO	Mechanical Engineering
50.	U14ME177	KORNU YERRAMNAIDU	Mechanical Engineering
51.	U14ME717	MOHANASUNDRAM M	Mechanical Engineering
52.	U14ME718	SHOAIBAHMED WANTMORE	Mechanical Engineering
53.	U14ME719	DILLIBABU P	Mechanical Engineering
54.	U14ME720	BALASUBRAMANI S	Mechanical Engineering
55.	U14ME721	AVINASH R	Mechanical Engineering
56.	U14ME722	IMRAN KHAN Y	Mechanical Engineering

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FEEDBACK FORM

❖ As part of a continuing improvement process, our college appreciates suggestions and inputs regarding the institution. We request you to sincerely answer these questions under assurance of complete confidentiality. Your interest in making our institution better is greatly appreciated.

Name of Department : Mechanical Engineering

Date : 09/12/2020

Event / Speaker Name : Skill development on CNC Lathe M/c

- Please rate the session on the scale indicated. Your comments are most appreciated.

S.NO	Parameters	Below Average	Average	Good	Excellent	Outstanding
1.	**The Topic**					
	The choice of topic was relevant to me				✓	
2.	**The Lecturer / Speaker**					
	Self-confidence				✓	
	Communication skills				✓	
	Doubts/ queries were answered satisfactorily				✓	
3.	**The Content (Topic)**					
	Refers to latest developments in the field				✓	
	Career oriented					✓
	Innovative learning, if any					✓

- Overall, how would you rate this Guest Lecture / Workshop / Seminar / Event/Value added course?

1. Below Average	2. Average	3. Good	4. Excellent	5. Outstanding
			✓	

- Comments (If any): good

Department of Mechanical Engineering
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Name of Department : Mechanical Engineering

Date : 09.12.2020

Event / Speaker Name : Skill Development on CNC Lathe machine

- Please rate the session on the scale indicated. Your comments are most appreciated.

S.NO	Parameters	Below Average	Average	Good	Excellent	Outstanding
1.	**The Topic**				✓	
	The choice of topic was relevant to me					✓
2.	**The Lecturer / Speaker**					✓
	Self-confidence					✓
	Communication skills					✓
	Doubts/ queries were answered satisfactorily					✓
3.	**The Content (Topic)**					
	Refers to latest developments in the field					✓
	Career oriented					✓
	Innovative learning, if any					✓

- Overall, how would you rate this Guest Lecture / Workshop / Seminar / Event/Value added course?

1. Below Average	2. Average	3. Good	4. Excellent	5. Outstanding
				5 ✓

- Comments (If any): The Presentation was Very Good!

Department of Mechanical Engineering
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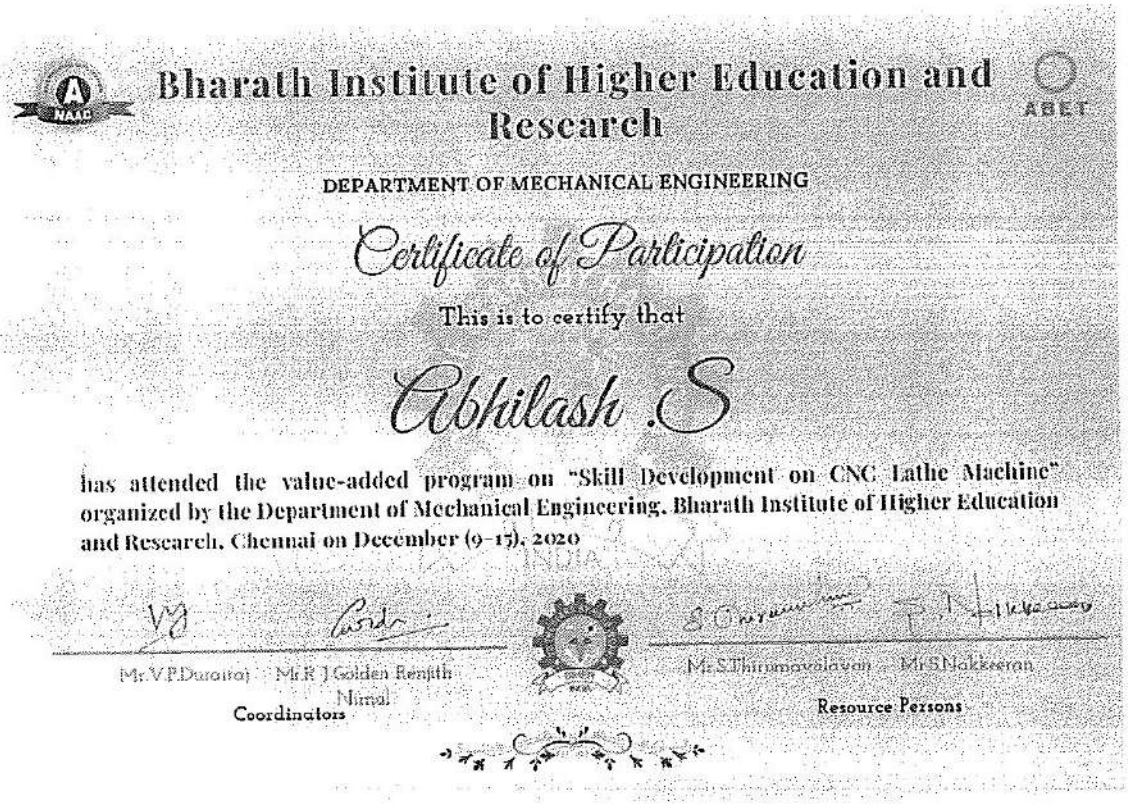
Chennai-600 073

Certificate



Bharath Institute of Higher Education and Research

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to certify that

Abhilash .S

has attended the value-added program on "Skill Development on CNC Lathe Machine" organized by the Department of Mechanical Engineering, Bharath Institute of Higher Education and Research, Chennai on December (9-15), 2020

Mr.V.P.Durairaj Mr.R.J.Golden Renjith Nimal

Coordinators

Mr.S.Thirumavalavan Mr.S.Nakkeeran

Resource Persons