



Fabrication Lab:

Supporting documents for the claim

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SHRI MADHWA VADIRAJA
INSTITUTE OF TECHNOLOGY & MANAGEMENT
Vishwothama Nagar, Udupi Dist.
BANTAKAL - 574 115

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INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

A Unit of Shri Sode Vadiraja Mutt Education Trust® Udupi

Vishwothama Nagar, Bantakal - 574 115

Udupi District, Karnataka, India



SMVITM

Fabrication Lab

Inscop

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Fabrication Lab (FABLAB)

OBJECTIVES

1. To train students of our institute as well as other institutes with CNC programming and CNC machine operation.
2. To facilitate students to utilize the available fabrication facilities such as machining, drilling, joining, polishing, metallography.
3. To encourage students to convert their imagination into reality.



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OUTCOMES

Students will be able to

1. Utilize the training in CNC programming and machining to be industry ready
2. Utilize the facilities in the lab to create working models/assemblies/ prototypes.
3. Gain expertise in fabrication related works.

IDEA Lab Faculty/ Staff

SL No.	Faculty/ Staff Name	Designation	Department	Responsibility
1.	Mr. Aditya Kudva S	Assistant Professor (Sl. Grade)	Mechanical Engineering	Overall coordination
2.	Mr. Srikanth Shettigar	Sr. Lab Instructor	Mechanical Engineering	CNC in charge
3.	Mr. Vignesh Kalathoor	Lab Technician	Mechanical Engineering	Machining in charge
4.	Mr. Prasad Kotian	Lab Technician	Mechanical Engineering	Welding in charge

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**Activities/events conducted**

SI No.	Activities/events	Date	Academic Year
1.	2-day workshop on CNC programming & hands-on sessions on CNC machines for students of GPT, Udupi	10/03/2020 to 11/03/2020	2019-2020
2.	Workshop on Material Testing and Quality Control for students of GPT, Udupi	13/09/2019 to 14/09/2019	
3.	2-day workshop on Material testing & Quality Control Laboratory for students of GPT, Udupi	22/02/2021 to 23/02/2021	2020-2021
4.	Six Days Value Added Program on CNC Milling Machine	17/05/2022 to 20, 23,24/05/2022.	2021-2022
5.	Machine Tool Technology practical classes for the students of Government Polytechnic, Kaup	20/12/2022, 21/12/2022	2022-2023
6.	Manufacturing Processes practical classes for the students of Government Polytechnic, Kaup	26/12/2022, 27/12/2022	
7.	Training and Certification Superintendent, V&G Industrial Testing Laboratories Pvt Ltd,	16/12/2022	

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	Mangalore		
8.	30 hours Professional Development Program on “CNC Programming & Hands-on training”	03/08/2023 to 08/09/2023	2023-2024

Projects fabricated

Sl No.	Activities/events	Academic Year
1.	Design and Fabrication of Multipurpose Agricultural Vehicle	2018-2019
2.	Ductility and Microstructure Analysis of Burnished Components	
3.	Design and Fabrication of Automatic Food Serving System	
4.	Design and Fabrication of Cashew Nut Deshelling Machine	
5.	Development Of High Strength Biodegradable Magnesium Based Alloy	2019-2020
6.	Design And Development Of Modular Reversing System In Scooter For Physically Challenged People	
7.	Investigation Studies On The Effect Of Abrasive Particles In Ball Burnishing Process	
8.	Fabrication of Raw Cashew Nut Destoner	

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9.	Development and Investigation of Mechanical and Corrosion Behaviour of Multi Directionally Forged Mg - 6%Zn Alloy	
10.	Design And Fabrication Of Coconut Dehusking Machine	
11.	Fabrication of Biodegradable Leaf Plates and Bowl	
12.	Development Of High Strength Light Weight Mg-Zn Alloy By Multidirectional Forging Process	
13.	Production and Study Of PLA Based Nano Composite Using Additive Manufacturing	2020-2021
14.	Effect Of Cryogenic Ball Burnishing Parameters On Mechanical And Corrosion Properties Of Mg-4Zn-2Sr Alloys	
15.	Automated Areca Nut Pesticide Sprayer	
16.	Investigation of microstructure, mechanical properties and corrosion behaviour of MDFed Mg alloy	
17.	Design and fabrication of a Tree Delimber	2021-2022
18.	Development of biodegradable sapling pots from agro-cattle wastes	

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19.	Design and Fabrication Tamarind Processing Machine	2022-2023
20.	Design and development of leaf plate molding machine for producing biodegradable plates from waste leaves	
21.	Solar powered grass trimmer without battery	
22.	Investigation of microstructure, mechanical properties and corrosion behaviour of MDFed mg based alloy	
23.	Characterization of magnesium alloy based surface nano composite by frictional stir process	

LAB MACHINES/Equipment

SL No.	Machine/Equipment	Numbers
1.	CNC Vertical Machining Center	1
2.	CNC Lathe Machine	1
3.	Drilling Machine	1
4.	Welding Machine	1
5.	Polishing Machine	1
6.	Wear testing Machine	1
7.	Optical Microscope	1

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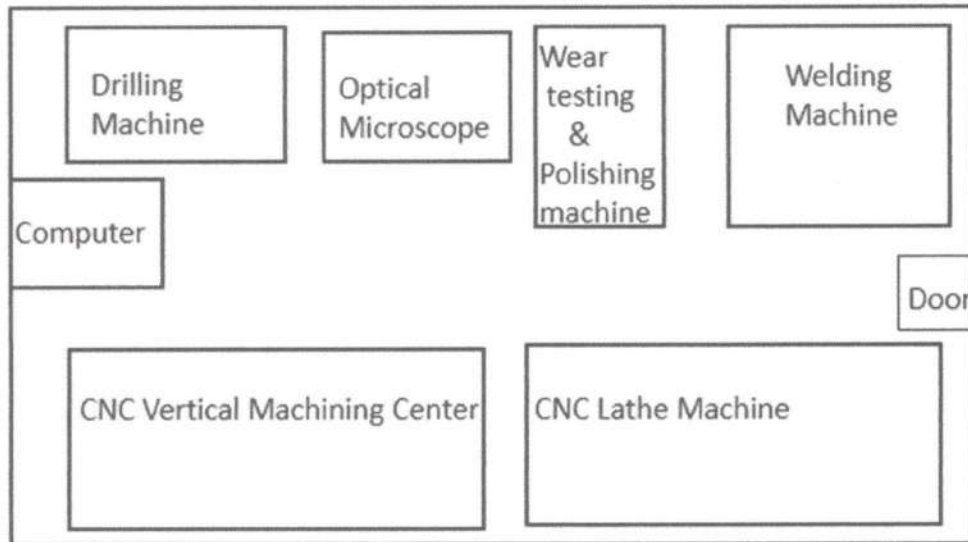
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8.	Dimension Measurement devices	3
9.	Computer	1

Layout



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Activity Report

Academic Year	2021-22
Name of the Program	Six days Value Added Program on CNC Milling Machine
Target Audience	4 th Year Students of Mechanical Engineering
Resource Person	Mr. Lingaraj Ritti, Mr. Ananth Mohan Mallya and Mr. Shrikanth Shettigar
Number of Participants	13

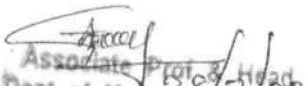
The Department of Mechanical Engineering in association with the Yantrika club of SMVITM Udupi organized a value-added training program on CNC milling machine for 4th-year students of Mechanical Engineering from 17/05/2022 to 20, 23,24/05/2022.

During the first half of the training program, the students were encouraged to write the CNC programs using G codes and M codes in CNC mill software. The resource persons gave an overall idea about how to write the program for the specific applications.

The students wrote the CNC program to emboss the letters on acrylic sheets and a simulation of the same program was carried out in CNC Mill software in presence of resource persons and lab assistants.

During the second part of the training program, each student worked on the CNC milling machine and embossed nameplates of their own choice were fabricated successfully under the guidance of resource persons and Mr. Shrikanth Shettigar lab Assistant department of mechanical engineering.

Special thanks to Management, Principal, HOD, and Mr. Vignesh Kalathur for their support to conduct the training program.


Associate Prof. & Head
Dept. of Mechanical Engg.
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Syllabus

Computer Numerical Control:

Introduction, components of CNC, CNC programming, Manual part programming using G Codes, M Codes, Programming of letters in turning, drilling and milling operations, Programming with canned cycle. Cutter radius compensations

Introduction to CNC milling machine, precautions taken during the machining, Tool attachment and detachment, work piece arrangements, leveling of working table, writing programs directly on machine, operations related with coolants, cleaning of machine after the operation.

Principals
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List of Students participated in training program

SL. No	USN	Student name
1	4MW17ME055	SANATH KAMATH
2	4MW18ME008	GAURAV S ACHARYA
3	4MW18ME020	RAJATH KUMAR
4	4MW18ME017	NIKHIL SHETTY
5	4MW17ME026	MANISH M J
6	4MW18ME019	PAI SUJAY MOHAN
7	4MW18ME015	NAGESH
8	4MW18ME006	DHANISH H AMIN
9	4MW18ME018	NIKHILESH
10	4MW17ME033	MOOLYA JATHIN JAYA
11	4MW18ME011	K DAMODHAR BHAT
12	4MW17ME055	SANATH KAMATH
13	4MW18ME028	TUSHAR G SHENOY

Anoop

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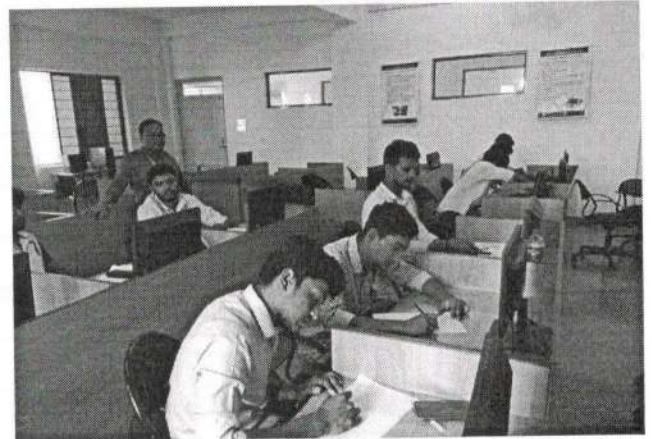
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Activity Report

Academic Year	2019 - 20
Name of the Program	2-day Workshop on CNC PROGRAMMING & HANDS-ON SESSIONS ON CNC MACHINES
Date	10/03/2020 to 11/03/2020
Target Audience	3 rd Year Mechanical Engineering Students Government Polytechnic, Udupi
Resource Person	Faculty Members of Department of Mechanical Engineering SMVITM, Bantakal
Number of Participants	32

Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal has successfully organized 2-days workshop on 'CNC PROGRAMMING & HANDS-ON SESSIONS ON CNC MACHINES' for 3RD Year students of Government Polytechnic, Udupi on 10th and 11th March 2020.

Workshop was organized by Department of Mechanical Engineering Department in association with ISTE Student Chapter and 32 students have taken advantage of it. Department teaching and non-teaching staff were the resource persons in workshop and taught students the basics of CNC program writing and also given hands-on demonstration on CNC MACHINING CENTERS (VMC and CNC Lathe) as per the schedule. Students were found enthusiastic throughout the sessions in learning various concepts and operating high end VMC and CNC lathe.

Dr. Sudarshan Rao K, HOD, Mechanical Engineering addressed the students at the end of the workshop and gave away the certificates. The students were allowed to take the machined parts at the end of the workshop.


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Longitude	13.253939419595167
Latitude	74.78556501181224
Location	Department of Mechnaical Engineering, SMVITM, Bantakal

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Detailed report on the activity

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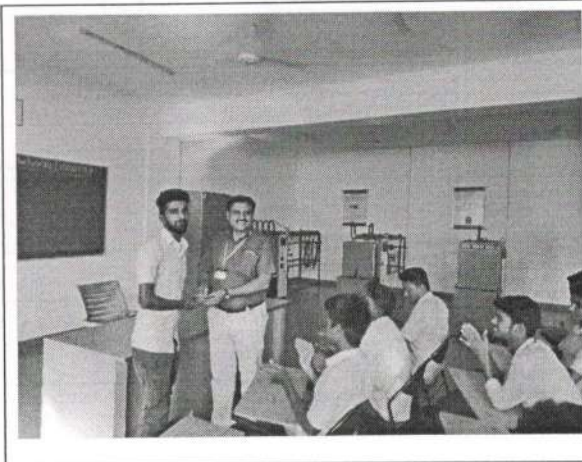
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Event Photos



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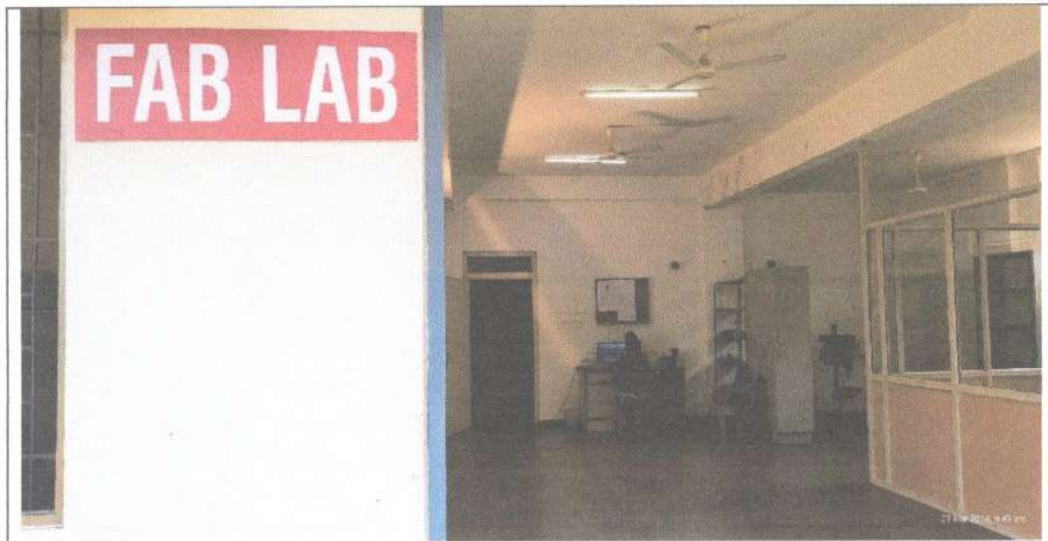


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FAB LAB



Latitude 13.25392°

Longitude 74.785407°

The Fab lab is equipped with computer installed with software such as CAPSMILL 10 and CAPSTURN 10, vertical drilling machine and portable welding machine.

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