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Sr. No	Name of the facility	Year of establishment
1.	**Central Instrumentation Centre**	
a.	RedHat Academy Lab	2017-18
b.	eYantra Robotics Lab	2015-16
c.	Texas Instruments Lab	2015-16
d.	Virtual Lab	2015-16
e.	Nuvoton Lab	2013-14
2.	**Central Fabrication Facility**	
b.	Flexible Manufacturing Systems (FMS) Lab	2018

Director
G.H Raisoni College of Engineering & Management
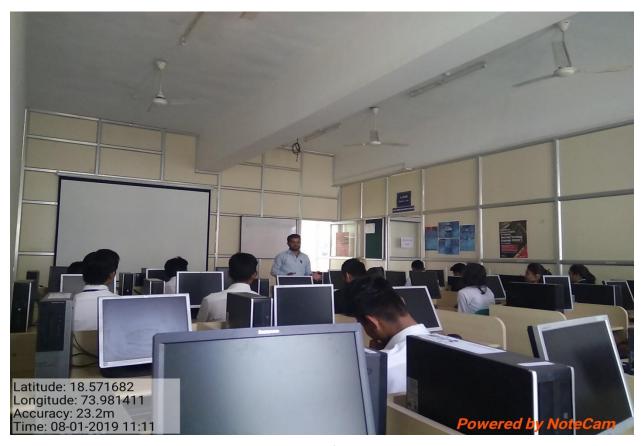(An Autonomous Institute),
Wagholi, Pune

Central Instrumentation Centre

RedHat Academy Lab

Students attending RedHat Certification Courses in RedHat Lab

The RedHat Academy Centre i.e RedHat Lab is set-up in G. H. Raisoni College of Engineering and Management in collaboration with RedHat Inc and IRT Pvt Ltd, Nashik as an initiative to train students in Linux and avail global certifications.

eYantra Robotics Lab

eYantra Lab A202-A

eYantra Robotics Lab A-202A is an initiative taken by MHRD, GoI and IIT, Bombay in collaboration with NEX Robotics, Bengaluru. The faculty members of GHRCEM participated in MHRD funded e-Yantra, IIT-Bombay Lab Set Up Initiative (eLSI): 2 days' workshop on Introduction to Robotics at VIT, Pune on 2nd and 3rd September 2015.The team of Dr. Tanuja S. Dhope, Kamal Ukey , Ms. Parul Arora and Mr. Pranav Chippalkatti attended the workshop and had hands-on experience on Embedded Systems and Robotics. Dr.D.D.Shah (Principal,GHRCEM),DR.R.S.Bichkar,Dr.R.Racchaya , Mr.Amol Pote, Mr.Arun Patil and Mr. Surendra Waghmare and the faculty members of GHRCEM participated in the valedictory and inauguration function of the MHRD funded ROBOTICS LAB in association with e-Yantra, IIT Bombay at GHRCEM, Pune on 1st March 2016. The Robotics lab ensures that the engineering colleges are keeping pace with the rapidly growing technology and the students get to focus on the evolving trend in technology, get hands-on experience and grow ethically, technically and socially.

Director
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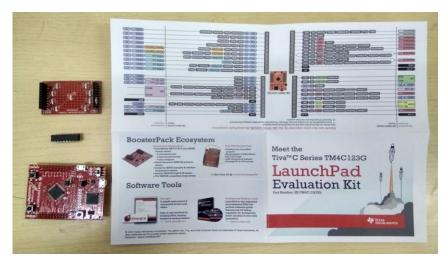(An Autonomous Institute)
Wagholi, Pune

Texas Instruments Lab

Texas Instruments Lab

Texas Instruments Lab A-202A is an initiative taken by Ed Gate Technologies Pvt Ltd and Texas Instruments(IN) under TI India University Program. A MoU has been signed between M/s Ed Gate Technologies and G. H. Raisoni College of Engineering and Management to setup Analog Attach Lab. The aim of the collaboration is to explore ways to introduce a lab based courses using Texas Instruments TI Platforms in Undergraduate/post graduate engineering curriculum.

Virtual LAB

Latitude: 18.571686
Longitude: 73.981411
Accuracy: 23.6m
Time: 26-01-2019 10:34
Note: VLAB2

Powered by NoteCam

Student performing VLAB practical on COEP,Pune website

GHRCEM, Pune has organized training session on "Virtual Lab" for all faculty members on 28th August 2015.The session was conducted by Dr. S. S. Agashe, The Principal Investigator, Virtual Lab Project, COE, Pune. The workshop focused on awareness of Vlabs facilities, Creation of Login, Keeping track of the students' experimentation, the working of different laboratories developed by COEP, use of experiments and remote triggered labs and administration /management of Vlabs. The workshop also focused on how the students get benefited by use of each laboratory and various activities to be done by VLNC.

Director
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(An Autonomous Institute)
Wagholi, Pune

Nuvoton Lab

Latitude: 18.571682
Longitude: 73.98141
Accuracy: 23.4m
Time: 08-01-2019 11:18

Powered by NoteCam

Nuvoton Lab

The Nuvoton Lab was established in G. H. Raisoni College of Engineering and Management in collaboration with Nuvoton Technology Corporation. Mr.Pravin Matte attended the Faculty Training Program on Nuvoton "NuMicro ARM Cortex-M0 and it's Applications on 14-15 January 2014 organised by Department of Electronic Science, University of Pune in Association with SPEED. "Nu-LB-NUC140" , the boards donated by Nuvoton Technology Corporation were to be used in training the students in the area of Embedded Systems.

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Wagholi, Pune

Central Fabrication Facility

Flexible Manufacturing Systems (FMS) Lab

Location: Workshop, GHRCEM, Pune

Introduction

An Industrial Flexible Manufacturing System (FMS) consists of robots, Computer-controlled Machines, Numerical controlled machines (CNC), instrumentation devices, computers, sensors, and other stand-alone systems such as inspection machines as shown in Figure.

Flexible Manufacturing System (FMS) lab setup

The use of robots in the production segment of manufacturing industries promises a variety of benefits ranging from high utilization to high volume of productivity. Each Robotic cell or node will be located along a material handling system such as a conveyor or automatic guided vehicle.

The production of each part or work-piece will require a different combination of manufacturing nodes. The movement of parts from one node to another is done through the material handling system. At the end of part processing, the finished parts will be routed to an automatic inspection node, and subsequently unloaded from the Flexible Manufacturing System.

CNC Lathe

CNC Lathes have at the very least the ability to drive the cutting tool under g-code control over 2 axes, referred to as X and Z. With CNC lathe machines, the material being worked is slowly

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sheared away. The result is a beautifully finished product or intricate part.

CNC Mill

CNC milling is a specific form of computer numerical controlled (CNC) machining. Milling itself is a machining process similar to both drilling and cutting, and able to achieve many of the operations performed by cutting and drilling machines. Like drilling, milling uses a rotating cylindrical cutting tool. However, the cutter in a milling machine is able to move along multiple axes, and can create a variety of shapes, slots and holes. In addition, the work-piece is often moved across the milling tool in different directions, unlike the single axis motion of a drill.

Robots

A robot is the main component of a flexible production system (*FPS*).. Robot centered modules of FPS, called robot modules or robot systems are intended for specified technological operations like welding, surface coating, packaging, etc. The robot module includes one or more robots (with manipulators and control devices), pallets for details or products, auxiliary positioning, transport devices, etc. Therefore, robot control means control of a complete robot module and a certain part of the production process.

Automated Guided Vehicle (AGV)

An automated guided vehicle or automatic guided vehicle (AGV) is a portable robot that follows markers or wires in the floor, or uses vision, magnets, or lasers for navigation. They are most often used in industrial applications to move materials around a manufacturing facility or warehouse. The AGV can tow objects behind them in trailers to which they can autonomously attach. The trailers can be used to move raw materials or finished product.

Automated storage and retrieval system (ASRS)

An automated storage and retrieval system (ASRS or AS/RS) consists of a variety of computer-controlled systems for automatically placing and retrieving loads from defined storage locations. The computer determines where in the storage area the item can be retrieved from and schedules the retrieval. It directs the proper automated storage and retrieval machine (SRM) to the location where the item is stored and directs the machine to deposit the item at a location where it is to be picked up.

Assembly Station

Automated assembly systems are used to assemble the different components. It consists of Industrial robots which perform the functions of human. These are used to reduce the manual work and to increase the production rate.

Sl. No.	Experiments	Outcomes
1	Study of FMS and its elements	Understand basics of FMS and various machine involved in it
2	Study of various sensors in FMS	Understand working of various types of sensors used in FMS
3	Study of CIM elements	Understand how CIM setup works and how to use it in product and process management
4	Study of Robot, its elements and programming	Understand elements, working and programming used for robot.
5	Study of CNC Lathe and its working	Know various parts of CNC Lathe, their use and working.
6	Study of CNC programming for producing Lathe job	Understand programming (G and M codes) to perform lathe operation
7	Study of CNC milling and its parts	Know various parts of CNC Milling, their use and working.
8	Study of CNC milling programming for various operation / job	Understand programming (G and M codes) to perform lathe operation
9	Introduction to different types of communication media	Understand principle and working of different types of media foe communication.
10	Study of Wireless sensors using IOT	Know types of wireless sensors that used in various application of internet of things.