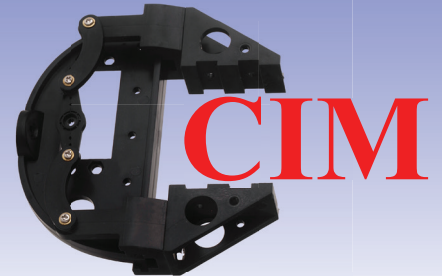


Computer Integrated Manufacturing

Our CIM systems are modular and flexible solutions for educating and training students in the principles and technologies of computer integrated manufacturing.



TRAINING OBJECTIVE:

Students are expected to be knowledgeable in CIM

- Computer-aided Advance manufacturing technology
- Sequence planning, Process planning,
- On-line / off-line Sequence excitation technique,
- Flexible manufacturing systems
- Engineering product specification, Computer Process Monitoring
- Data logging systems, Data acquisition systems, Multilevel scanning

CNC technology

- CAD/CAM integration,
- CNC machine tool building,
- CNC programming
- Using manual method,
- Generation of CNC codes using CAM software,
- Tooling and work holding devices,

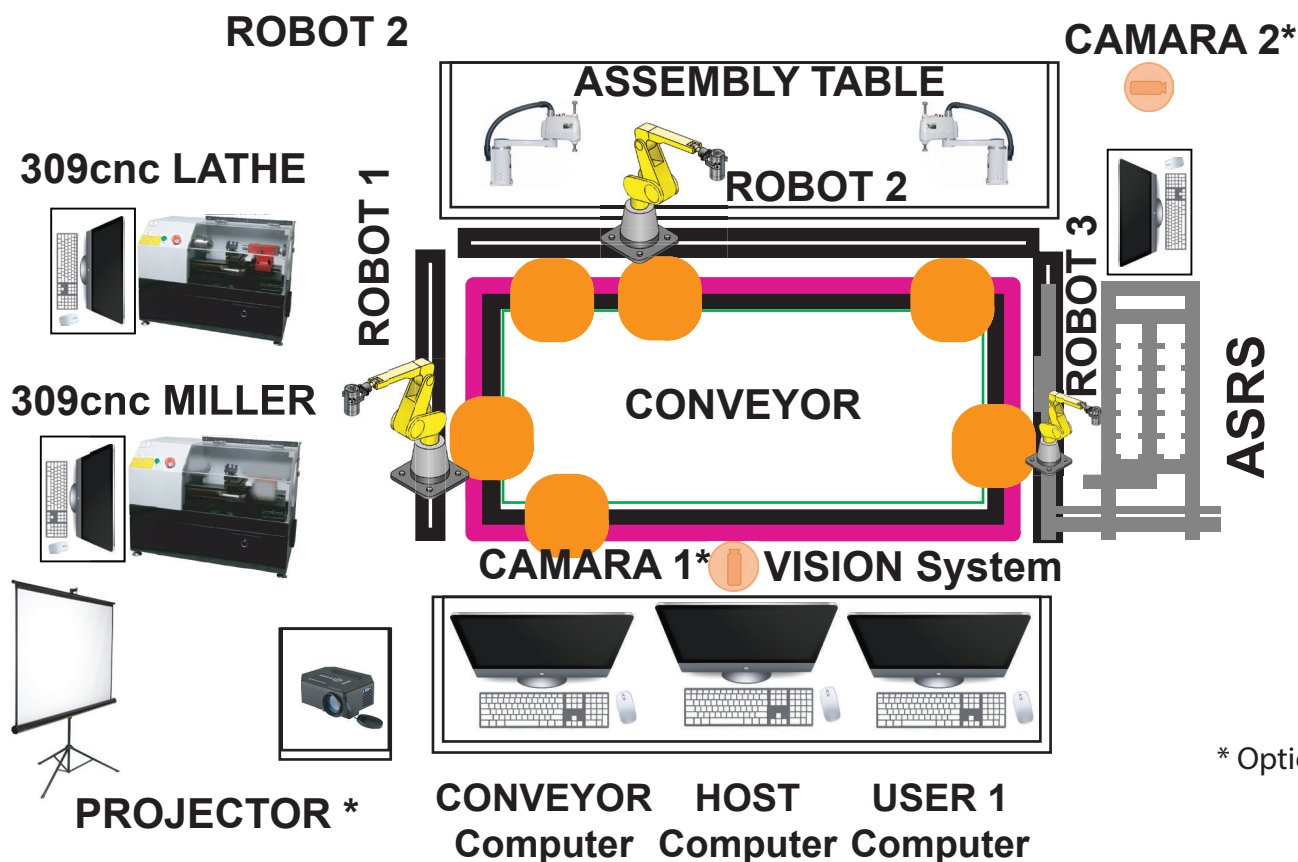
Robotics and automation technology

- Robot anatomy
- Controlling the Robot motion
- Position and velocity sensing devices
- Robot cell design and application
- Methods of Robot Programming
- Characteristics of task level languages lead through programming methods
- Automated material handling systems

C I M

Computer Integrated Manufacturing

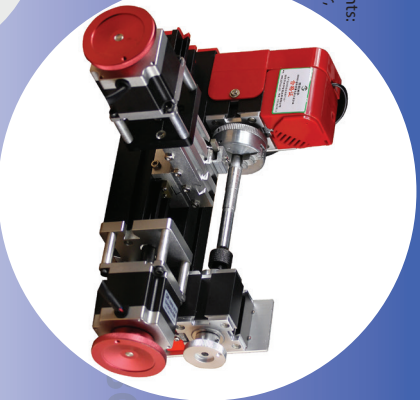
is the manufacturing approach of using computers to control the entire production process. This integration allows individual processes to exchange information with each other and initiate actions. Through the integration of computers, manufacturing can be faster and less error-prone, although the main advantage is the ability to create automated manufacturing processes. In a CIM system functional areas such as design, analysis, simulation, planning, and purchasing, cost accounting, and scheduling, inventory control, and distribution, product life cycle management, supply chain management are linked through the computer with factory floor functions such as materials handling and management, providing direct control and monitoring of all the operations. To achieve automated manufacturing CIM uses technologies like FMS, ASRS, AGV, Robotics, Mechatronics, automated conveyor systems and computer aided techniques like CAD, CAE, CAM, CAPP, CAQ, PPC, ERP, a business system integrated by a common database.



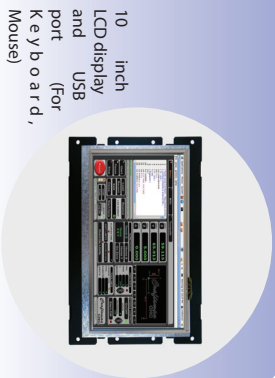
* Optional

03

Lathe : Machine's major components: spindle, tailstock,dock, slider, connecting blocks and so all-metal structure. Center height 25mm, center distance 135mm, generally metal lathe turning speed dropped to 20000 rev / min. Turning high-speed steel, processed soft, nonferrous metals, precious metals, and the use of intermediate block height to diameter range expanded to



The assembly station is equipped with a variety of assembly devices as well as with local storage devices. This turnkey station gives students training and skills assembly and robotic programming and control, and automated manufacturing systems.



10 inch LCD display and USB port (For Keyboard, Mouse)



309cnc LATHE

The 6DOF robotic arm from Feetech delivers fast, accurate, and repeatable movement. The robot features: base rotation, single plane shoulder, elbow, wrist motion, a functional gripper, and optional wrist rotate



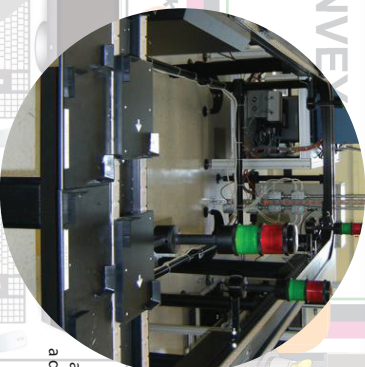
309cnc MILLER



Mach3 System Support. Suitable for PVC PCB engraving wood materials. USB interface support for desktop and notebook computers Working table size X-150 * Y-150 * Z-50mm Equipped with a 300 W high speed shaft



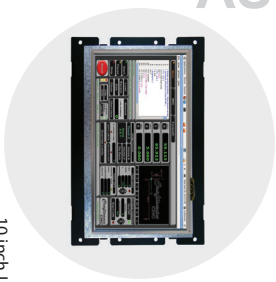
IntelCeleron Processor or ARM 11 with Windows 8 or Linux Intel HD Graphics support, 17inch LCD 1080P ultra HD resolution, 4*USB 3.0 and 2*USB 2.0, 2*Gigabit LAN Port. All Alloy case solid and stable, low power consumption. Support Maximum 1GB RAM 8GB MMC



The conveyor frame is constructed of extruded, black anodized aluminum, and its moving belt is a double flexible-chain rail.



The system's dedicated Cartesian robot transfers parts between storage cells and conveyor/pallets stopped at the ASRS station. The robot is controlled by Controller-USB and by a dedicated ASRS software module in the Open CIM software. An optional hand-held teach pendant can also be used for direct control of the ASRS.



10 inch LCD display and USB port (For Keyboard, Mouse)

PROJECTOR *

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USER 1

ASRS

ROBOT 2

ROBOT 3

CAMERA 2

Course List

Computer-Integrated Manufacturing (CIM)

CIM builds on the basic concepts covered in CIM . Students design, set up and operate CIM cells and learn about mass production, robotic systems, location planning, QC devices, part feeding, assembly, purchase orders, MRP and CIM databases.

The basic CIM system has several key components: an automated storage and retrieval system (ASRS), at least one automated workstation such as CNC machining, a continuous-loop conveyor, a central management control station, a TCP/IP communication network. Additional workstations can be added at any time for executing a variety of automated tasks, such as laser engraving, hydraulic and pneumatic device operation, process control, and quality control inspection.

Course Outline :

Mass Production and CIM
 Robotic Systems
 Location Planning
 QC Devices
 Feeders
 Adding an Assembly Station
 Assembled Part Production
 Assembled Product Characteristics
 Expanding Assembly Capabilities
 Sub-assemblies and Multi-Level Assembly
 Purchase Orders and MRP
 Multi-Level Assembly Production

Introduction to CIM
 Introducing CIM Software
 Parts and Production Flow
 Storage Setup
 Production Planning
 Processes and Machine Definition
 Part Definition
 Defining a Product Part
 Producing a New Part
 Timing and Optimization
 Viewing Production Details in the Device View
 Viewing Production Details in the Storage View
 Defining Part Production in the Lathe
 Integrated Production
 Tracking Integrated Production

Specifications

■ Lathe :

Mach3 System Support. Suitable for PVC PCB engraving wood materials. Center height 25mm, center distance 135mm, generally metal lathe turning speed dropped to 20000 rev / min.

■ Miller :

Mach3 System Support. Suitable for PVC PCB engraving wood materials. USB interface, support for desktop and notebook computers Working table size X-150 * Y-150 *Z 50mm Equipped with a 300 W high speed shaft.

■ Robot arm :

The 6DOF robotic arm from Feetech delivers fast, accurate, and repeatable movement. The robot features: base rotation, single plane shoulder, elbow, wrist motion, a functional gripper, and optional wrist rotate.

■ Computer :

Intel Celeron Processor or ARM 11 with Windows 8 or Linux Intel HD Graphics support, 3 peaches 17inch LCD 1080P ultra HD resolution. 4*USB 3.0 and 2*USB 2.0. 2*Gigabit LAN Port. All Alloy case solid and stable. low power consumption. Support Maximum 1GB RAM 8GB MMC

■ Conveyors :

The conveyor frame is constructed of extruded, black anodized aluminum, and its moving belt is a double flexible-chain rail. Conveyor dimension: 2040mm x 700mm , Conveyor is modular and can be expanded, Conveyor total length: approx. 6 m, Moving belt: double flexible-chain rail, Conveyor construction: extruded, black anodized aluminum, with slots for mounting additional hardware

■ ASRS :

Floor-mounted storage unit, 16 cells in a 4 x 4 array Transparent Plexiglas enclosure, Cartesian robot with rotational axis movement of end effectors, L=800 mm, W=600 mm, H=1800 mm

■ Assemble Table :

Long and stable work well, High-quality product Easy to learn and operation it(Professional dispensing software) Easy maintenanc XYZ robot work table 800X1680mm for for epoxy resin, cyan adhesive and RTV silicone.

■ Projection (optional) :

Native 640*480 pixels support 1080P Through HDMI, RGB LED lamp about 50,000 hours life, 1300Lumens, AV/USB/SD CARD/VGA/HDMI/Micro USB, 170*140*70mm.

■ Vision System (optional) :

Camera specifications 5 megapixel OV5647 sensor, CCD size : 1/4inch, Aperture (F) : 1.8, Focal Length : 3.6mm adjustable, Diagonal angle : 75.7 degree, Sensor best resolution : 1080p.

Total length = 3600mm
Total width = 2100mm
Total height = 1575mm

Line voltage – 230VAC
Line current – 17.5 Amp
Total Power consumption – 4Kw
Control Panel - Power Supply Switch / Reset Switch / dust filter
Total weight - 205Kg
Operating temperature - 5°C~30°C
Relative humidity – 40% ~80%
Cooling System- Air cool (4x120mm filter fan, and 2x 80mm fans)

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