MECHANICAL ENGINEERING WORKSHOP

Prepared by.
Engr. Mujeeb Iqbal soomro
Mr. Saeed AhmedMemon

CONTENTS

- INTRODUCTION
- MACHINE SHOP
- CNC SHOP
- FORGING SHOP
- FITTING SHOP
- WOOD WORK SHOP
- FOUNDRY SHOP
- WELDING SHOP

M. Sarwar Siddiqui

Sr. Workshop Superintendant

INTRODUCTION TO MECHANICAL ENGINEERING WORKSHOP

Mechanical Engineering Workshop is a place where students acquire knowledge on the operation of various processes involved in manufacturing and production. The Workshop Practice course makes students competent in handling practical work in engineering environment. Mechanical Engineering Workshop is also involved in different maintenance/repair works for University.

MACHINE SHOP

Machine shop is a place in which metal parts are cut to the required size and put together to form mechanical units or machines.

The machines so made are to be used directly or indirectly in the production of necessities and luxuries of civilization.

Machine shop is the base of all mechanical production.

INCHARGE MACHINE SHOP

Engr. Ameer Ali Memon
Sr. Workshop Instructor

SUPPORTING STAFF OF MACHINE SHOP

❖Shabbir Shaikh	Trade Technician
❖Abid Ali Pathan	Jr. Trade Technician
❖Saddaruddin Chandio	Helper
❖Zeeshan Ali Mirza	Helper
❖Munawer Ali Sahito	Helper

EQUIPMENT

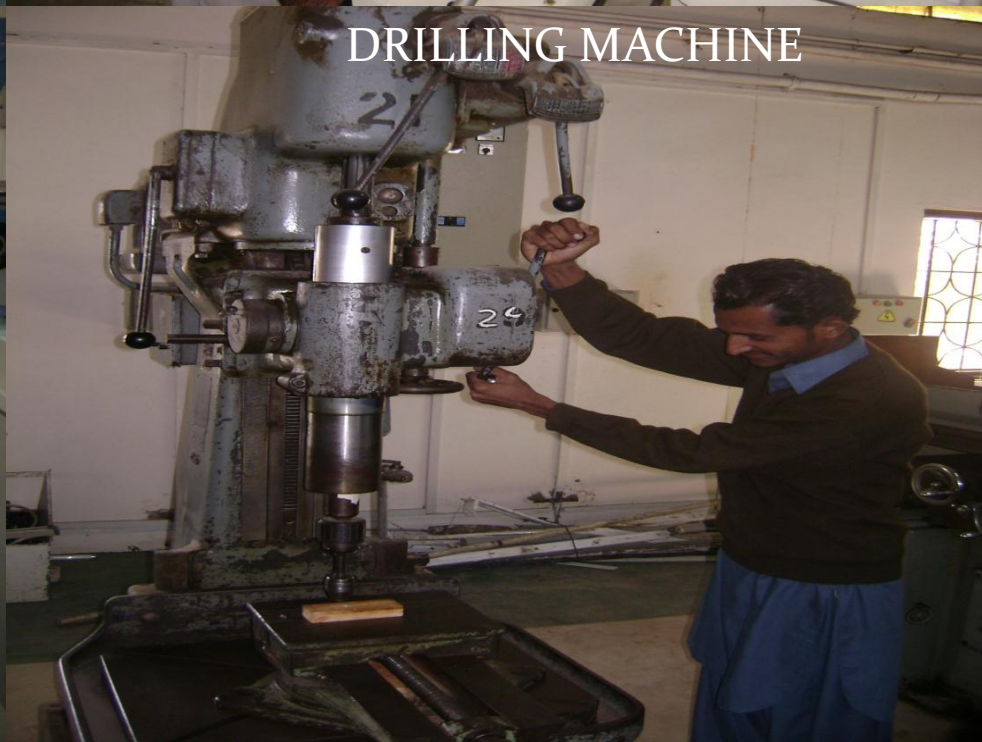
❖LATHE MACHINE	19
❖MILLING MACHINE	02
❖SHAPER MACHINE	02
❖POWER HACKSAW MACHINE	01
❖DRILLING MACHINE	01
❖SURFACE GRINDER	01
❖TOOL GRINDER	01

A VIEW OF MACHINE SHOP

LATHE MACHINE

LATHE MACHINE

DRILLING MACHINE



CNC SHOP

Numerical control (NC) is the automation of machine tools that are operated by abstractly programmed commands encoded on a storage medium, as opposed to controlled manually via hand wheels or levers, or mechanically automated via cams alone. Most NC today is computer numerical control (CNC), in which computers play an integral part of the control.

In modern CNC systems, end-to-end component design is highly automated using computer-aided design (CAD) and computer-aided manufacturing (CAM) programs. The programs produce a computer file that is interpreted to extract the commands needed to operate a particular machine via a postprocessor, and then loaded into the CNC machines for production. Since any particular component might require the use of a number of different tools – drills, saws, etc., modern machines often combine multiple tools into a single "cell". In other cases, a number of different machines are used with an external controller and human or robotic operators that move the component from machine to machine. In either case, the complex series of steps needed to produce any part is highly automated and produces a part that closely matches the original CAD design.

CAD/CAM LAB

In Computer Aided Design / Computer Aided Manufacturing (CAD/CAM) Lab. different jobs are accomplished with the help of Boxford CAD CAM Design Tools Software, CNC Mill & CNC Lathe Software.

These software are very useful for an engineering student. Students are required to design and manufacture different types of objects.

INCHARGE CNC SHOP /CAD CAM LAB

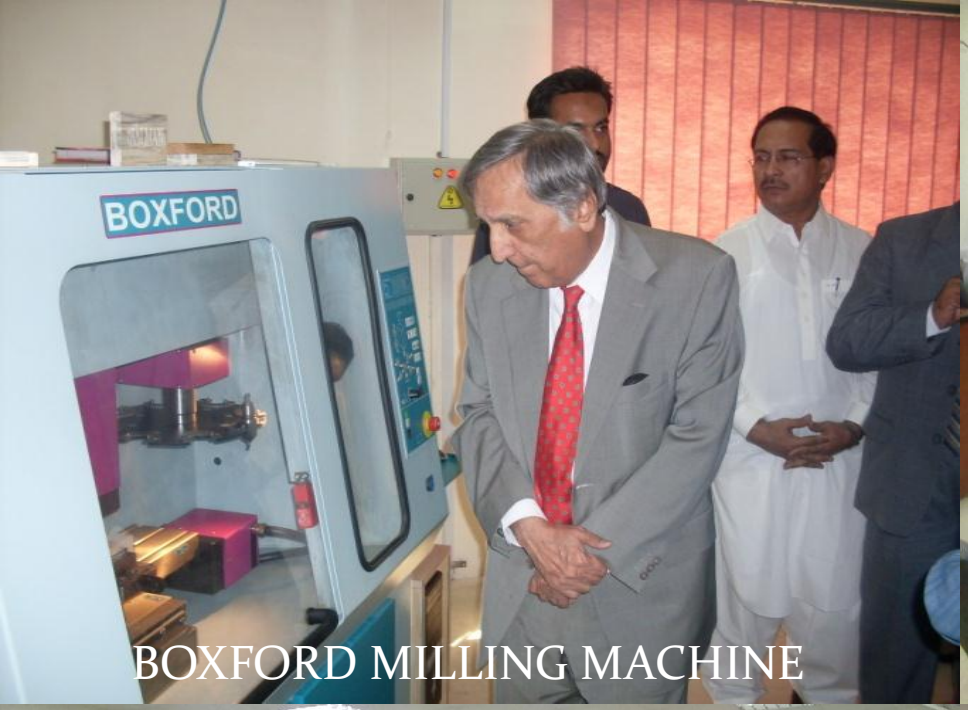
Engr. Mujeeb Iqbal Soomro
Sr. Workshop Instructor

SUPPORTING STAFF OF CNC SHOP /CAD CAM LAB

❖Saeed A. Memon	I.T Assistant
❖Rizwan Shaikh	Electrician
❖Ashfaque Panhwar	Helper
❖Kamran Ali Memon	Helper

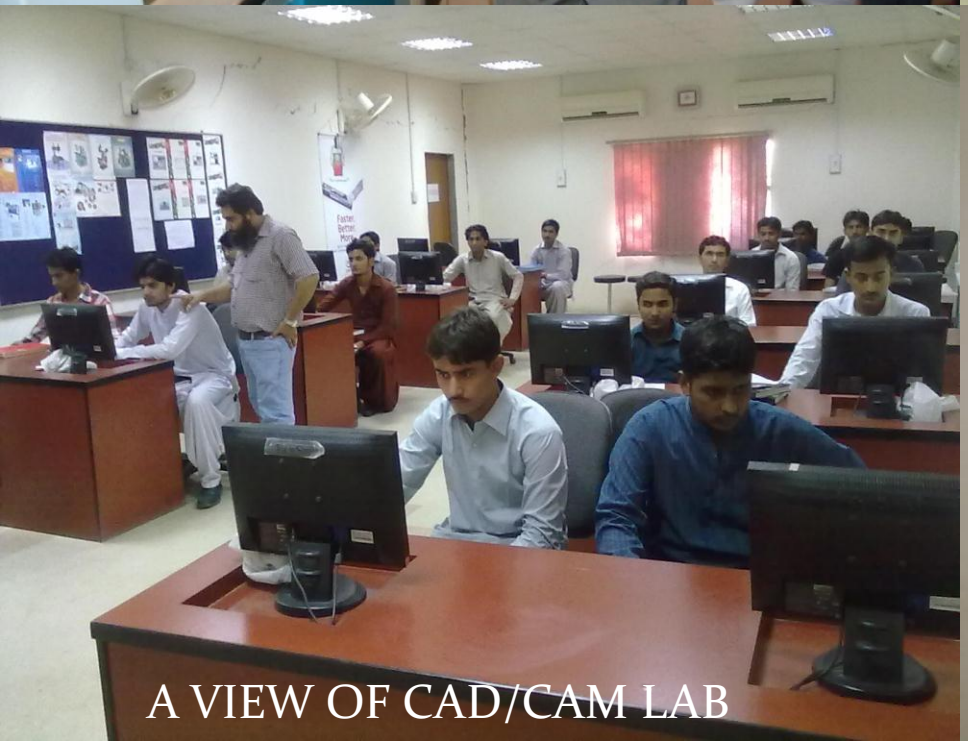
EQUIPMENT

- BOXFORD LATHE MACHINE 01
- BOXFORD MILLING MACHINE 01
- PMTF LATHE MACHINE 01
- PMTF MILLING MACHINE 01



BOXFORD MILLING MACHINE

A VIEW OF CAD/CAM LAB



A VIEW OF CAD/CAM LAB

PMTF LATHE MACHINE

FORGING SHOP

The Mechanical working of the metal is the shaping of the metal in either cold state or hot state. This does not include machining, grinding or casting. But in Mechanical working of the metal, the metal is shaped by “pressure” actually, in which forging, bending, twisting, drawing etc are done bring it to its final shape. In these processes some metals are shaped in both cold and hot worked.

INCHARGE FORGING SHOP

Engr. Afaque Rafique Memon
Sr. Workshop Instructor

SUPPORTING STAFF OF FORGING SHOP

❖Anwar Ali Sahito	Jr. Trade Technician
❖Karam Ali	Helper

EQUIPMENT

- FORGING FURNACE 07
- SURFACE GRINDER 01
- ELECTRIC DRILLING MACHINE 01

JOBS OF FORGING SHOP

FORGING FURNACE

FITTING SHOP

Fitting shop is a place where fitting or assembling work is carried out. Some repair / maintenance and Die punch work is also carried out in Fitting shop.

INCHARGE FITTING SHOP

Mr. Jamil Ahmed Mangi
Workshop Instructor

SUPPORTING STAFF OF FITTING SHOP

- Bismillah Jamali — Helper
- Raza Muhammad Khaskheli — Helper

A VIEW OF FITTING SHOP

JOBS FINISHED IN FITTING SHOP

WOODWORK SHOP

The wood is obtained from the trees. In Woodwork shop students are trained to work on wooden jobs by using various hand tools and machines.

INCHARGE WOOD WORK SHOP

Mr. Abdul Qadir Jamali
Workshop Instructor

SUPPORTING STAFF OF WOODWORK SHOP

❖Lakhadino Soomro	Carpenter
❖Maqbool Ahmed Memon	Carpenter
❖Arshad Hussain	Jr. Trade Technician
❖Bakhsahl Lashari	Jr. Trade Technician

EQUIPMENT

- UNIVERSAL PLANING MACHINE 02
- POWER BEND SAW MACHINE 01

A VIEW OF WOODWORK SHOP

UNIVERSAL PLANING MACHINE

FOUNDRY SHOP

Foundry is one of the manufacturing process by which a desired shape of metal is obtained by heating up to its molten state (liquid state), and pouring into mould cavity. After some time metal is allowed to cool and solidify. The solidified piece of metal is known as casting.

INCHARGE FOUNDRY SHOP

Engr. Pir Jawed Ahmed Sarhandi
Workshop Instructor

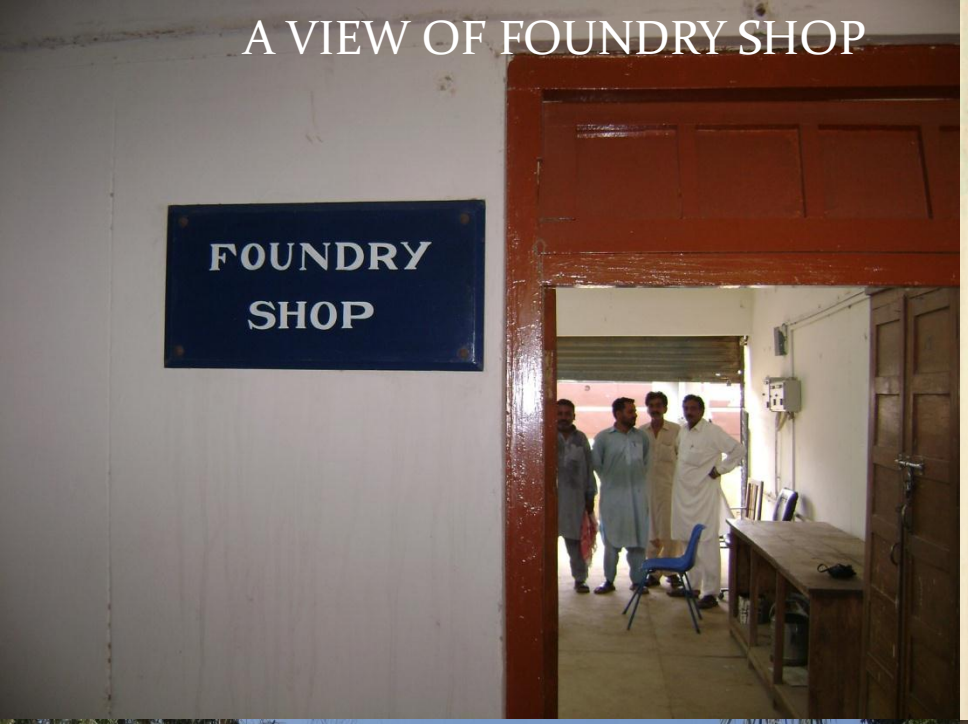
SUPPORTING STAFF OF FOUNDRY SHOP

❖Mr. Sawan Khan	Moulder
❖Mr. Barkat Ali	Jr. Trade Technician

EQUIPMENT

- CRUCIBLE FURNACE 01
- CUPOLA FURNACE 01

A VIEW OF FOUNDRY SHOP



JOBS FINISHED IN FOUNDRY SHOP

CUPOLA FURNACE

CRUCIBLE FURNACE

WELDING SHOP

It is the process of permanent fastening where two metals are fused at the temperature of 3200°C (when metals are melted). The most common types of welding are:

1. Electric Arc Welding
2. Gas Welding (Oxy Acetylene Welding)
3. Resistance Welding
4. Forge or Fire Welding

INCHARGE WELDING SHOP

Mr. Jamil Ahmed Mangi
Workshop Instructor

SUPPORTING STAFF OF FOUNDRY SHOP

❖Mr. Liaquat Soomro	Shop Assistant
❖Mr. Anees Ali	Welder
❖Mr. Sarfaraz	Welder
❖Mr. Shahab Soomro	Helper

EQUIPMENT

- Electric Arc Welding 02
- Gas Welding (Oxy Acetylene Welding) 02
- Resistance Welding 01
- TIG welding 02

A VIEW OF WELDING SHOP

STAFF OF MECHANICAL ENGINEERING WORKSHOP

Thanks