



Practical Plant Pathology

1st Lecture :

Equipment and Tools used in Laboratory Plant pathology

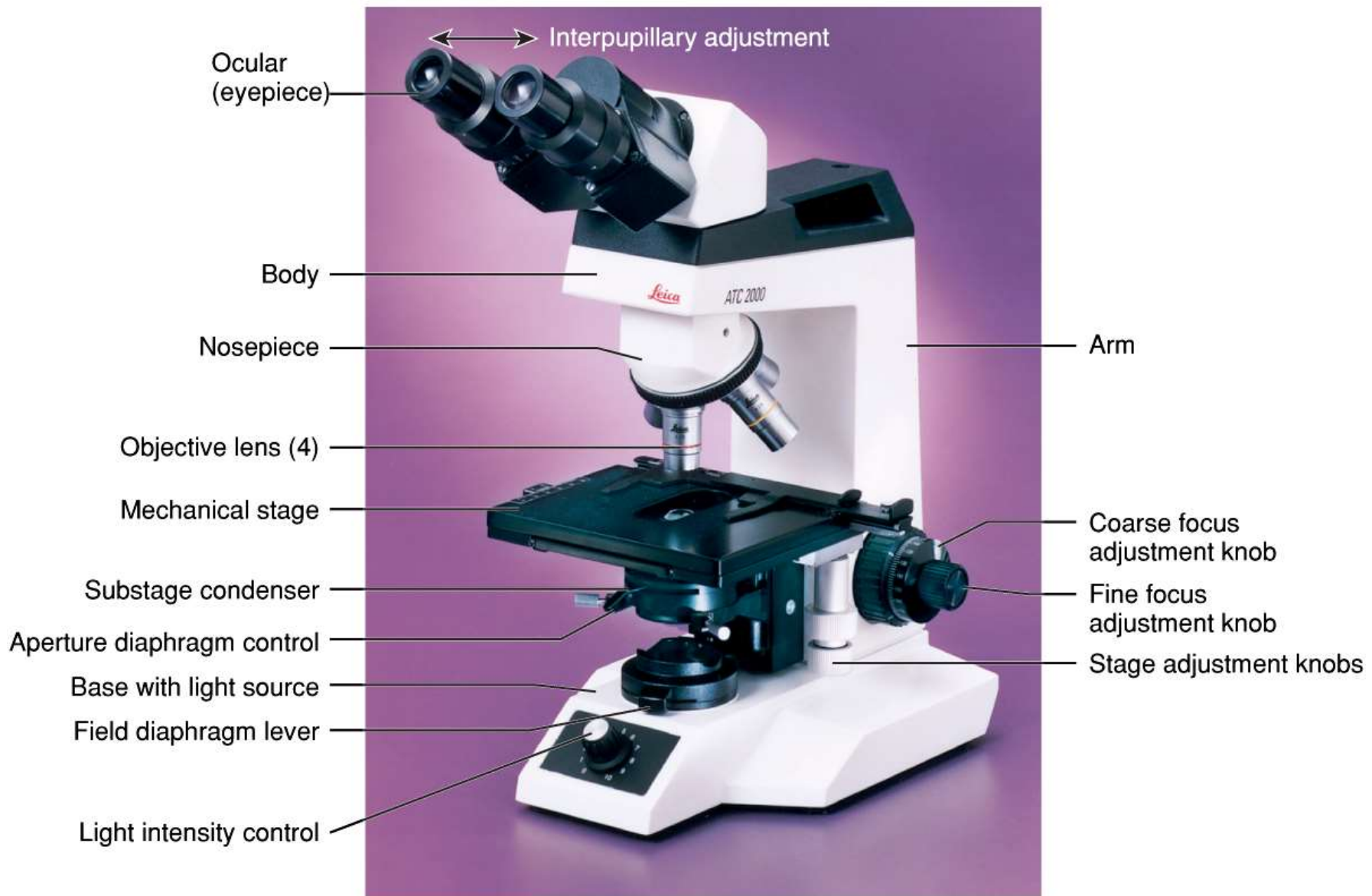
Lecturer Name

Azhen Mohammad Hassan

Microscope in Laboratory

Microscope is a laboratory tool used to enlarge the image to view small objects such as cells of organisms.

To view microorganisms living in another organism that cannot be seen by the naked eye.



© Leica Microsystems Inc.

Figure 3.13

Autoclave

- This instrument used for sterilization of the materials that can resist high temperature, such as cotton, culture media and soil, both of temperature and pressure are used for sterilization process.
- The temperature and the pressure required are 121°C and 15 bar for 15-20min.

Autoclave



Oven

Oven- is based on the principle where sterilization is accomplished by dry heat or hot air.



Incubator

- Incubators are used for obtaining an appropriate temperature need for growing microorganisms, in general, the required temperature for growing fungi is 25°C and for bacteria is 37°C.

Incubator



Refrigerator

- Refrigerator used for preserve:
 1. cultures of fungi and bacteria .
 2. Plant materials
 3. soil

Refrigerator



Bunsen burner

Bunsen burner; A Bunsen burner is a device used in scientific laboratories for heating, sterilization, and many other uses.



water bath

1. Used for many purposes , like indirect heating of some fastidious materials which can not bear direct heating .
2. Used for offering a constant temperature for some solutions required to remain in constant temperature.

water bath



The **balance** is used for weight materials used in preparing cultures



PH-meter

- It is used for detects the acidity or alkalinity of solutions like culture.



Centrifuge

- Centrifuge are used for isolation purposes ,
 1. separates materials of varying density .
 2. For isolation some microorganisms , like nematodes , from water solution.



Distillation units

- It is used for production of distilled water . The distilled water used for many purposed in laboratories , like: preparing cultures , washing diseased plant particles , and diluting solutions.

Distillation units



Flow Hood

Laminar flow cabinets may have a [UV-C germicidal lamp](#) to sterilize the interior and contents before usage to prevent contamination of experiment



Tools

1- Forceps

2- Scissors

3- needle

4- Loop

Glassware

1- Petri dishes

2- Beaker

3-Test tube

4- Slide and cover slide

5- Cylinder

6- Pipettes

7- conical flask

A Petri dish is a shallow glass or plastic cylindrical dish that biologists use to culture cells, which can be bacteria, animal, plant, or fungus.





3 2



1

