Practical Principles of Microbial Physiology // 4th Stage **Lab 1**
Introduction to study of Microbial Physiology **1 page**

What is Physiology?

IT'S THE GROWTH, NUTRITION AND METABOLISM
Physiology: is the science of the normal functions of living organisms, such as nutrition, respiration, reproduction, and excretion.

Microbial Physiology:

The science that is required to understand how microorganisms are able to grow and carry out processes for economic and medical importance. These include bioenergetics aspects, a description of major metabolic pathway and the interaction of microorganisms with their environment.

Microorganisms:

Microorganisms range from extremely small, unicellular such as bacteria to large forms such as protozoa, fungi and algae.

- ✓ Gram positive Bacteria: *Bacillus subtilis*
- ✓ Gram negative bacteria: *Escherichia coli*
- ✓ Yeast: *Saccharomyces cerevisiae*
- ✓ Fungi: *Aspergillus*

Why do we focus on Bacteria?

- ➢ Prokaryotic microorganism
- ➢ Unity of biochemistry: most of the metabolic pathways that exist in prokaryotes are the same as those in all other living organisms.
- ➢ Interesting phenomena:
    1. High degree of metabolism and reproduction.
    2. Diversity: adaptation to different habitats and nutrients.

Why do we study microbial physiology?

- ➢ Basic research: basic tools in the understanding of life processes.
- ➢ Applications: Medical Microbiology, Industrial Microbiology, Food Microbiology, Agricultural Microbiology and Environmental Microbiology