

## Course Title: Introduction to Bioprocessing

### Module 0: Course Outline

#### Lesson 0:

##### Lesson Description:

This lesson gives an outline of the course Introduction to Bioprocessing

##### Lesson Objectives:

- Understand the course objectives.
- Understand how the course will be delivered.

<b>Lesson Word Count:</b>	<b>516</b>
---------------------------	------------

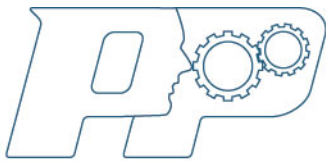
Hello and welcome to this course on Bioprocessing.

A bioprocess is a specific process that uses complete living organism such as cells or their components (e.g., bacteria, enzymes, chloroplasts) to obtain desired products.

Bioprocesses have been around for thousands of years with for example wine, beer and cheese making being developed in the Mediterranean and Middle East.

In the production of alcohol, the living yeast cells combine with cereal grains as nutrients to form a system in which the organisms consume the nutrients for growth and produce alcohol and CO<sub>2</sub> as products. This method of production is called fermentation.

Fermentation can also be seen when bacterial microorganisms are added to milk to produce yogurt.



In addition to nature's microorganisms, modern bioprocesses also use other agents, e.g. enzymes and cells from plants, insects, and animals, to produce various products, including organic acids, antibiotics, and therapeutic compounds.

Today's bioprocesses follow the same principle: combining living matter (whole organisms or enzymes) with nutrients under the conditions necessary to make the desired end product.

In recent years rapid improvements in bioprocess technology have allowed useful substances to be produced in large amounts.

This has enabled these products of bioprocesses to be used in medical research, food processing, agriculture, pharmaceutical development, waste management, and numerous other fields of science and industry.

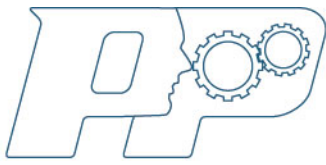
In this course we will examine how biotechnology has evolved into different fields of use and applications around bioprocessing. We will examine the use of Bioprocessing in the production of pharmaceutical products.

We will look at the microbiology of growing organisms that can be used for pharmaceutical products.

We will identify the steps of manufacture of pharmaceutical product from cell cultures, through fermentation to harvesting, purifying and filling product.

Finally we will examine the regulatory requirements around bioprocessing pharmaceutical products and how contamination is controlled.

This course is separated into a number of different lessons



# People & Process Academy

**Lesson1:** Biotechnology – History and Applications

**Lesson 2:** Growing Organisms

**Lesson 3:** Biopharmaceutical Manufacturing

**Lesson 4:** Contamination Control

If this is your first course with People & Process Academy, be sure to look at “Studying with People & Process” before you begin. This short video shows you how to find your way around the lessons.

Lessons are all presented in video format, and there's a transcript you can follow as you watch. If you like, you can download the video transcript to revise later on.

In ***Introduction to Bioprocessing*** each new lesson builds on previous information, so it's best to follow the lessons in order. All registered users have unlimited access to video lessons and transcripts, and you can repeat each video as often as you like.

If you have any difficulties navigating the course, see the support section for help.

There's a quiz at the end of each lesson to test your understanding of the material.

To successfully complete this course, you must pass the quiz for each lesson. Once all the lessons have been completed, you can then download and print the People & Process completion certificate.

So let's get started! In the next video, we'll look at 'Biotechnology- History and Applications'