Under-graduate course **Molecules and Medicines** (3 Classes/Week: 3 Credits = 3:0:0): UWE-120

Since the time of Hippocrates until modern days, human being has explored several means of alleviating pain and curing disease. There have been pathbreaking discoveries resulting in the development of medicines of immense benefit. Present day research of inventing novel molecules constantly adds to the repertoire of drugs available to counter ill-health.

We will begin with a short introduction (which discusses fundamental organic chemistry followed by development and testing of drugs). Next we will explore the discovery and development of a range of drugs and medicines that relieve pain, effect cures and reduce the symptoms of ill-health. We will discuss how drugs interact with and affect their target areas in the human body. There are online videos to help you to understand the three-dimensional structures and shapes of the molecules concerned and to develop an understanding of how the drugs work.

*Prerequisite*: CHY101

**Instructor:** Subhabrata Sen

1. **Course Evaluation:** Quiz-1 (10%), Mid-term (30% each), Quiz-2 (10%), Assignment-Write-up (20%), Final examination (30%)

**Course outline:**

1. Introduction
2. Basic Organic Chemistry
3. Stereochemistry, proteins and three dimensional protein structures.
4. Bacterial infection and penicillin Antibiotics
5. Neurodegenerative disease and drugs acting on nervous system
6. Virus and antivirals

**Books:**

1. *Scientific journals will be provided*