

Introduction to Cancer (BIO 222)

Credit Hours: 3

Instructor: Amir Faisal

Schedule: Monday to Friday (2.45 PM – 4.45 PM)

Cancer is a devastating disease that results from uncontrolled proliferation and spread of abnormal cells. It is the second leading cause of deaths worldwide, and cancer-related mortality rates are projected to rise disproportionately in low- and middle-income countries like Pakistan. This introductory level course aims to teach the basics of cancer biology. We will start with risk factors associated with various common cancers and how changes in lifestyle can prevent one-third of all the cancers. A basic introduction to cellular and molecular aspects of cancer biology will then allow students to understand how the loss of control over cell proliferation is brought about by mutations in genes involved in signalling pathways that regulate cell fate. Students will learn how oncogenes and tumour suppressors control the process of tumorigenesis. They will also learn how a tumor spreads to different parts of the body through metastasis and how it deceives the host immune system. Finally, we will discuss the modern therapeutic strategies employed to target various cancers. At the end of the course, students should be able to understand the risk factors associated with cancer and how these risk factors can cause cancer. They should be able to appreciate the complexity of cancer as a disease and understand why treating cancer is difficult.