Molecular Biology II (BT313)

1.	**Introduction and History of Recombinant DNA Technology** Students will be briefed about basic concepts of Recombinant DNA Technology and the milestones in history that paved the way for current revolution in recombinant DNA technology.
2.	**Common Techniques involved in Recombinant DNA Technology** To make students familiar with the concepts and theories related to the techniques commonly used in this field.
3.	**Cutting and Joining of DNA** To make students understand concepts behind cutting and joining of DNA molecules.
4.	**Molecular Vectors** To learn about biology and characters of different types of vectors available for cloning experiments.
5.	**Screening of Recombinants** To make students learn about different ways and means to identify required recombinant colonies.
6.	**DNA sequencing Technologies** To make students familiarize with different sequencing technologies available these days including NGS, and how these technologies can be used in this field.
7.	**Modifying DNA sequences** To make students learn about different means of modifying DNA sequences such as through site-directed mutagenesis.
8.	**Examples of Transgenic Organisms and further Applications** Success stories of this field will be discussed with the students especially creation of transgenic plants and animals and different commercial products available due to this field. Moreover, emphasis will be given how this field can further help in the human welfare by discussing various applications of this field