



Pharmaceutical Biotechnology
Title: Pharmaceutical Biotechnology
Course number: 563 PHG
Semester: Ninth Semester (Fifth year).
Duration: 2 + 1 Units (4 contact hours) per week.
Aims: To provide knowledge of clinically useful drugs such as fermentation and plant tissue culturing as well as recombinant DNA technology.
Objectives: At the end of the course the student should know the clinically useful drugs such as fermentation and plant tissue culturing as well as recombinant DNA technology.
Contents: Lectures: The course covers, in general, an extensive study of the various techniques used to produce clinically useful drugs such as fermentation and plant tissue culturing as well as recombinant DNA technology. The course is also concerned with a comprehensive study of protein production and the technologies employed to enhance their stability, purity, formulation and delivery. In addition, basic principles of gene therapy, production of transgenic and knock-out animals, monoclonal antibodies, vaccines, nano-biotechnology are emphasized together with protein-protein interaction and some economic consideration in the field of medical biotechnology.
Minimum course requirements: 30 (2x15) Unit lectures and 30 (2x15) practical hours per level.
Evaluation methods:



-Quizzes	10%
- Mid term examination	25%
- Practical examinations	25%
- Final examination (written)	40%

Books (latest editions):

- 1) Pharmaceutical Biotechnology: Fundamentals and Applications by Daan J. A. Crommelin & Robert D. Sindelar.
- 2) Pharmaceutical Biotechnology: Concepts and Applications by Dr. Gary Walsh
- 3) Handbook of Pharmaceutical Biotechnology (Pharmaceutical Development Series) by Shayne C. Gad
- 4) Pharmaceutical Biotechnology by Deepshikha Pande Katare, Altaf Ahmad, and Vidhu Aeri