B. Tech. in Biotechnology

B.Tech. (Biotechnology) : II year : III Semester

BT 201 : Introduction to Biotechnology
Text books:

Reference books:

BT 202 : Biochemistry
Text books:

Reference books:
1. Biochemical Calculations by I.H. Segal. Publisher: John Wiley and Sons (1968)

BT 203 : Cell Biology
Text books:

Reference books:
BT 204 : Object Oriented Programming
Text books:
Reference books:

BT 205 : Biostatistics
Text books:
Reference books:
1. Probability and Statistics for Engineers and Scientists by Walpole, R.E., Myers, R.H., Myers, S.L., Ye, K. Publisher: Prentice Hall, Inc. (2002)

BT 206 : Numerical Methods
Text books:
Reference books:

B.Tech. (Biotechnology): II Year: IV Semester
BT 211 : Molecular Biology
Text books:
Reference books:
1. Introduction to Practical Molecular Biology by P.D. Dabre. Publisher: John Wiley and Sons Inc (1988)
**BT 212 : Genetics**

**Text books:**

**Reference books:**

**BT 213 : Microbiology**

**Text books:**
2. Microbiology by Bernard D. Davis, Renato Dulbecco, Herman N.Eisen and Harold S. Ginsberg. Publisher: Lippincott Williams & Wilkins (1990)

**Reference books:**

**BT 214 : Enzymology & Enzyme Technology**

**Text books:**

**Reference books:**
2. Enzyme Technology by Helmut Uhling. Publisher: John Wiley (1998)
BT 215 : Data Structures & Algorithms

Text books:

Reference books:
5. R.L. Kruse, B.P. Leary, C.L. Tondo, “Data structure and program design in C”, PHI.

BT 216 : Engineering Economics

Text books:

B.Tech. (Biotechnology) : III Year : V Semester

BT 301: Instrumentation in Biotechnology

Text books:

Reference books:
3. Physical Chemistry of Macromolecules by C. Tanford. Publisher: John Wiley and Sons Inc.(1961)

BT 302 : Immunology & Immunotechnology

Text books:
Reference books:
1. Immunology by Ivan Roitt, David Male and Johathan Brostoff Publisher: Mosby
   – Yearbook Inc (1996)
2. Kuby Immunology by T.J. Kindt, B.A. Osborne and R.A. Goldsby. Publisher:
3. Production of Monoclonal Antibodies – Detailed Protocol by G.K. Lewis,
   University of Maryland (1995)
4. Immunology: A Short Course by R. Coico and G. Sunshine. Publisher: Wiley-
   Blackwell (2009)
5. Immunology and evolution of Infectious diseases by Steven Frank, Princeton
   University Press (2002)
6. Microbiology by Bernard D. Davis, Renato Dulbecco, Herman N. Eisen and
   Harold S. Ginsberg. Publisher: Lippincott Williams & Wilkins (1990)

BT 303: Genetic Engineering
Text books:

Reference books:
1. Molecular Cloning: A Laboratory Manual (3 Volume Set) by J. Sambrook and
2. Molecular Biotechnology: Principles and Applications of Recombinant DNA by

BT 304: Biological Engineering Principles
Text books:
1. Basic principles and calculations of Chemical Engineering by D.M. Himmelblau.
   Publisher: Prentice Hall Inc (1974)
2. Basic principles of Chemical Engineering by E.I. Shaheen Publisher: Houghton
   Mifflin (1975)

Reference books:
1. Chemical Process Control, an introduction to theory and practice by
3. Coulson’s and Richardson’s Chemical Engineering by J.F. Richardson and D.G.
   Peacock. Publisher: Asian books (1994)
4. Elementary principles of Chemical Processes by R.M. Felder and R.W.
   Rousseau. Publisher: John Wiley and sons Inc (2005)
5. Fundamentals of Chemical Reaction Engineering by C.D. Holland and R.G.

BT 305: Structural Biology
Text books:
1. Essentials of Molecular Biology by G.M. Malacinski and D. Freifelder. Publisher:

Reference books:
1. D. Metzler Biochemistry: The Chemical Reactions of Living Cells by Metzler,
3. Introduction to Protein Architecture: The Structural Biology of Proteins by A.M.

B.Tech. (Biotechnology) : III Year : VI Semester

BT 311 : Plant Biotechnology
Text books:
2. Introduction to Plant Biotechnology by H. S. Chawla Publisher: Oxford and IBH Publishing (2009)

Reference books:
2. Genetic Engineering by S. Rastogi and N. Pathak. Publisher: Oxford University

BT 312 : Animal Biotechnology
Text books:

Reference books:
6. Transgenic Animal Technology: A Laboratory Handbook by Carl A Pinkert

BT 313 : Fundamentals of Biochemical Engineering
Text books:

Reference books:

BT 314 : Database Management Systems
Text books:
2. Elmasri, Navathe, “Fundamentals of Database systems”, Addison Wesley
4. Data Mining: Concept and Techniques by J. Han and M. Kamber. Publisher: Morgan Kaufman. (2001)

**Reference books:**
3. The Data Warehouse Toolkit by R. Kimball et al. Publisher: John Wiley and Sons Inc.(1996)

**BT 315 : Genomics & Proteomics**

**Text books:**

**Reference books:**

**B.Tech. (Biotechnology) : IV Year : VII Semester**

**BT 401 : Computational Biology – I**

**Text books:**

**Reference books:**

**BT 402 : Bioprocess Technology & Downstream Processing**

**Text books:**

**Reference books:**

BT 411 : Computational Biology – II

Text books:

Reference books:

B.Tech. (Biotechnology) : IV Year : VIII Semester

BT 403 : Elective – I

1. Thermodynamics of Biological Systems
Text books:

Reference books:

2. Pharmaceutical Chemistry
Text books:

Reference books:

3. Current Topics in Biotechnology
Text books:

Reference books:

4. Drug Delivery Systems

Text books:

Reference books:

Open Elective – I

BT 404 : Elective – II

1. Biomechanics

Text books:

Reference books:

2. Biofuels

Text books:

Reference books:
1. Introduction to Biofuels by David M. Mousdale. Publisher: CRC Press (2010).

3. Nanobiotechnology

Text books:
Reference books:

4. Biosensors
Text books:

Reference books:

Elective – II

BT 412 : Elective – II

1. Drug Design and Development
Text books:

Reference books:

2. Pharmacogenomics and Personalized Medicine
Text books:

Reference books:
3. Entrepreneurship Development & Marketing Research

Text books:

Reference book:

4. Genomics and Medicine

Text books:

Reference books:

BT 413 : Open Elective – II
1. Bioprocess Plant Design

Text books:

Reference books:

2. Intellectual Property Rights

Text books:

Reference books:
2. Intellectual Property Rights in Agricultural Biotechnology by F.H. Erbisch and

3. Computer-aided Drug Design
Text books:

Reference books:

4. Environmental Biotechnology
Text books:
1. Comprehensive Biotechnology by M. Moo- Young. 4-volume set Pub: Pergamon Press 1985)

Reference books:
1. Introduction to Biodeterioration by D. Allsopp and K.J. Seal. Publisher ELBS/Edward Arnold.(1986)
3. Microbiology by Bernard D. Davis, Renato Dulbecco, Herman N. Eisen and Harold S. Ginsberg. Publisher: Lippincott Williams & Wilkins (1990)