



CORE STRUCTURE OF SYLLABUS FOR THREE
YEARS (SIX - SEMESTERS) B.Sc.(H)
BIOTECHNOLOGY WITH AI

B.Sc. Syllabus Biotechnology with AI 1st Year					
1st Semester					
Course code	Course Title	L	P	T	Total Credits
TIU-HBT-T101	BIOCHEMISTRY AND METABOLISM	4	0	0	4
TIU-HBT-T103	CELL BIOLOGY	4	0	0	4
TIU-HBT-L101	BIOCHEMISTRY AND METABOLISM LAB	0	2	0	2
TIU-HBT-L103	CELL BIOLOGY LAB	0	2	0	2
TIU-AEC-T105	LANGUAGE (COMMUNICATIVE ENGLISH)	2	0	0	2
TIU-HBT-T105	BIOSAFETY AND BIOETHICS	2	0	0	2
TIU-HBT-T106	CAREER ADVANCEMENT AND SKILL DEVELOPMENT: INTRODUCTION OF AI: HISTORY, BASICS CONCEPTS AND SCOPE	2	0	0	2
	Total Credit	14	4	0	18

**B.Sc. Syllabus Biotechnology with AI 1st Year 2nd
Semester**

Course code	Course Title	L	P	T	Total Credits
TIU-HBT-T102	MAMMALIAN PHYSIOLOGY	4	0	0	4
TIU-HBT-T104	PLANT PHYSIOLOGY	4	0	0	4
TIU-HBT-L102	MAMMALIAN PHYSIOLOGY LAB	0	2	0	2
TIU-HBT-L104	PLANT PHYSIOLOGY LAB	0	2	0	2
TIU-AEC-T100	ENVIRONMENTAL SCIENCE	2	0	0	2
TIU-HBT-T108	BIOTECHNOLOGY AND HUMAN WELFARE	2	0	0	2
TIU-HBT-T109	CAREER ADVANCEMENT AND SKILL DEVELOPMENT: ANALYZE GENOMIC DATA USING AI TO IDENTIFY PATTERNS RELATED TO GENE EXPRESSION, MUTATIONS, OR REGULATORY ELEMENTS	2	0	0	2
	Total Credit	14	4	0	18

B.Sc. Syllabus Biotechnology with AI 2nd Year 3rd Semester					
Course code	Course Title	L	P	T	Total Credits
TIU-HBT-T201	GENETICS	4	0	0	4
TIU-HBT-T203	GENERALMICROBIOLOGY	4	0	0	4
TIU-HBT-L201	GENETICS LAB	0	2	0	2
TIU-HBT-L203	GENERALMICROBIOLOGYLAB	0	2	0	2
TIU-HBT-T205	*ENZYMOMOLOGY	2	0	0	2
TIU-HBT-T207	*MOLECULARDIAGNOSTICS	2	0	0	2
TIU-HBT-T209	DEVLOPMENTAL BIOLOGY	2	0	0	2
TIU-GCH-E101	CHEMISTRY THEORY	2	0	0	2
TIU-GCH-L101	CHEMISTRYLAB	0	2	0	2
TIU-HBT-T209	CAREER ADVANCEMENT AND SKILL DEVELOPMENT : INTRODUCTION OF AI MODEL TO PREDICT PROTEIN STRUCTURE BASED ON AMINO ACID SEQUENCES USING DEEP LEARNING TECHNIQUES.	2	0	0	2
Total Credit		18	6	0	24

*ANY ONE

B.Sc. Syllabus Biotechnology with AI 2nd Year 4th Semester					
Course code	Course Title	L	P	T	Total Credits
TIU-HBT-T202	MOLECULARBIOLOGY	4	0	0	4
TIU-HBT-T204	IMMUNOLOGY	4	0	0	4
TIU-HBT-L202	MOLECULARBIOLOGYLAB	0	2	0	2
TIU-HBT-L204	IMMUNOLOGYLAB	0	2	0	2
TIU-HBT-T206	*INDUSTRIAL FERMENTATIONS	2	0	0	2
TIU-HBT-T208	*DRUGDESINING	2	0	0	2
TIU-HBT-T210	ENTREPRENEURSHIP DEVELOPMENT	0	2	0	2
TIU-GCH-E102	CHEMISTRY THEORY	2	0	0	2
TIU-GCH-L102	CHEMISTRYLAB	0	2	0	2
TIU-HBT-T209	CAREER ADVANCEMENT AND SKILL DEVELOPMENT : AI APPLICATIONS IN PREDICTION OF CROP DISEASES BASED ON ENVIRONMENTAL FACTORSAND GENETIC DATA OF PLANTS	2	0	0	2
Total Credit		16	8	0	24



B.Sc. Syllabus Biotechnology with AI 3rd Year 5th Semester					
Course code	Course Title	L	P	T	Total Credits
TIU-HBT-T301	BIOPROCESS TECHNOLOGY	4	0	0	4
TIU-HBT-T303	RECOMBINANTDNA TECHNOLOGY	4	0	0	4
TIU-HBT-L301	BIOPROCESS TECHNOLOGY LAB	0	2	0	2
TIU-HBT-L303	RECOMBINANTDNATECHNOLOGY LAB	0	2	0	2
TIU-HBT-T305	*BIOSTATISTICS	2	0	0	2
TIU-HBT-T307	*ANIMAL BIOTECHNOLOGY	2	0	0	2
TIU-HBT-T309	*INTELLECTUAL PROPERTY RIGHTS	2	0	0	2
TIU-HBT-T311	*ANIMAL DIVERSITYI	2	0	0	2
TIU-HBT-T313	*PLANT DIVERSITY I	2	0	0	2
TIU-HBT-T310	CAREER ADVANCEMENT AND SKILL DEVELOPMENT : STUDY OF AI-BASED TOOLS FOR WASTETREATMENT TECHNOLOGIES, BIOFUELS PRODUCTION AND OTHER APPLICATIONS	2	0	0	2
	Total Credit	20	4	0	24

*ANY TWO

B.Sc. Syllabus Biotechnology with AI 3rd Year 6th Semester					
Course code	Course Title	L	P	T	Total Credits
TIU-HBT-T302	BIOANALYTICAL TOOLS	4	0	0	4
TIU-HBT-T304	GENOMICS AND PROTEOMICS	4	0	0	4
TIU-HBT-L302	BIOANALYTICAL TOOLS LAB	0	2	0	2
TIU-HBT-L304	GENOMICS AND PROTEOMICS LAB	0	2	0	2
TIU-HBT-T306	*PLANT BIOTECHNOLOGY	2	0	0	2
TIU-HBT-T308	*BIOINFORMATICS	2	0	0	2
TIU-HBT-T310	*MEDICAL BIOTECHNOLOGY	2	0	0	2
TIU-HBT-T312	*ANIMAL DIVERSITY II	2	0	0	2
TIU-HBT-T314	*PLANT DIVERSITY II	2	0	0	2
TIU-HBT-T309	CAREER ADVANCEMENT AND SKILL DEVELOPMENT : AI ETHICS AND REGULATORY CONSIDERATIONS IN BIOTECHNOLOGY	2	0	0	2
	Total Credit	20	4	0	24