Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Biotechnology
(Applicable from the academic session 2018-2019)

Curriculum Structure

A. THEORY (3rd Sem)

Code	Field	Theory	Contact Hours/Week				Cr. Points
			L	T	P	Total	
HM-BT301	Humanities and social Science and Management course	Bioethics and IPR in Biotechnology	3	0	0	3	3
PC-BT301	Professional Core	Thermodynamics and Kinetics for Biotechnology	2	0	0	2	2
PC-BT302	Professional Core	Structure of Biomolecules	3	0	0	3	3
PC-BT303	Professional Core	Biochemistry	3	0	0	3	3
PE-BT301	Professional Core Elective	Industrial Stoichiometry	3	1	0	4	4
BS-BT301	Basic Science Course	Microbiology	3	0	0	3	3
		Total of Theory				18	18

B. PRACTICAL (3rd Sem)

Code	Field	Practical	Contact Hours/Week				Cr. Points
			L	T	P	Total	
PC-BT391	Professional Core	Structure of Biomolecules Lab	0	0	3	3	1.5
HM-BT391	Humanities and social Science and Management course	Technical Report Writing and Language Lab Practices	0	0	3	3	1.5
PC-BT392	Professional Core	Biochemistry Lab	0	0	3	3	1.5
BS-BT391	Basic Science Course	Microbiology Lab	0	0	3	3	1.5
		Total of Practical				12	6
		Total of Semester				30	24

A. THEORY (4th Sem)

Code	Field	Theory	Contact Hours/Week				Cr. Points
			L	T	P	Total	
OE-BT401	Open Elective Course	Numerical Methods and Biostatistics	3	1	0	4	4
OE-BT402	Open Elective Course	Data Structure and Algorithms	3	0	0	3	3
MC-BT401	Mandatory Course (Non Creadit)	Environmental Science/ Engg.	2	0	0	2	0
ES-BT401	Engineering Science	Transfer Operation I	3	0	0	3	3
PC-BT402	Professional Core	Molecular Biology	3	0	0	3	3
PC-BT403	Professional Core	Industrial Microbiology and Enzyme Technology	3	0	0	3	3
		Total of Theory				18	16

B. PRACTICAL (4th Sem)

Code	Field	Practical	Contact Hours/Week				Cr. Points
			L	T	P	Total	

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OE-BT491	Open Elective Course	Numerical Methods and Biostatistics Lab	0	0	3	3	1.5
OE-BT492	Open Elective Course	Data Structure and Algorithms Lab	0	0	3	3	1.5
ES-BT491	Engineering Science	Transfer Operation I Lab	0	0	3	3	1.5
PC-BT491	Professional Core	Molecular Biology Lab	0	0	3	3	1.5
		Total of Practical				12	6
		Total of Semester				30	22

Total Credit in 2nd year : 46

A. THEORY (5th Sem)

Code	Field	Theory	Contact Hours/Week				Cr. Points
			L	T	P	Total	
HM-BT501	Humanities and social Science and Management course	Fundamentals of Management for Engineers	2	0	0	2	2
PC-BT501	Professional Core	Genetics	3	1	0	4	4
PC-BT502	Professional Core	Bioinformatics	3	0	0	3	3
ES-BT501	Engineering Science	Transfer operation -II	3	0	0	3	3
OE-BT501	Open Elective Course	Data Base Management System and Computer Networking	3	0	0	3	3
PE-BT501	Professional Core Elective	Biorector Design And Analysis	3	1	0	4	4
		Total of Theory				18	19

B. PRACTICAL (5th Sem)

Code	Field	Practical	Contact Hours/Week				Cr. Points
			L	T	P	Total	
PC-BT591	Professional Core	Genetics Lab	0	0	3	3	1.5
PC-BT592	Professional Core	Bioinformatics Lab	0	0	3	3	1.5
ES-BT591	Engineering Science	Transfer operation -II Lab	0	0	3	3	1.5
OE-BT591	Open Elective Course	Data Base Management System Lab	0	0	3	3	1.5
		Total of Practical				12	6
		Total of Semester				30	25

A. THEORY (6th Sem)

Code	Field	Theory	Contact Hours/Week				Cr. Points
			L	T	P	Total	
HM-BT601	Humanities and social Science and Management course	Project Management and Entrepreneurship	2	0	0	2	2
PC-BT601	Professional Core	Recombinant DNA Technology	3	0	0	3	3

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Code	Field	Theory	L	T	P	Total	Cr. Points
PC-BT602	**Professional Core**	Immunology	3	0	0	3	3
PC-BT603	**Professional Core**	Plant Biotechnology	3	0	0	3	3
PC-BT604	**Professional Core**	Bioseparation Technology	3	0	0	3	3
PE-BT602	**Professional Core Elective**	Animal Cell Culture and animal Biotechnology	3	0	0	3	3
		Total of Theory				**17**	**17**

B. PRACTICAL (6th Sem)

Code	Field	Practical	Contact Hours/Week				Cr. Points
			L	T	P	Total	
PC-BT691	**Professional Core**	Recombinant DNA Technology Lab	0	0	3	3	1.5
PC-BT692	**Professional Core**	Immunology Lab	0	0	3	3	1.5
PC-BT693	**Professional Core**	Plant Biotechnology Lab	0	0	3	3	1.5
PC-BT694	**Professional Core**	Fermentation Technology and Bioseparation Lab	0	0	3	3	1.5
HM-BT691	**Humanities and social Science and Management course**	Seminar (Review and Presentation by PPT)	0	0	2	2	1
		Total of Practical				**14**	**7**
		Total of Semester				**31**	**24**

Total Credit in 3rd year : 49

A. THEORY (7th Sem)

Code	Field	Theory	Contact Hours/Week				Cr. Points
			L	T	P	Total	
PC-BT701	**Professional Core**	Food Biotechnology	3	0	0	3	3
PE-BT701	**Professional Core Elective**	Renewable Energy Technology (PE-BT701A) Bioprocess and process Instrumentation (PE-BT701B) Tissue Engg (PE-BT701C) Medical Informatics (PE-BT701D)	3	0	0	3	3
PE-BT702	**Professional Core Elective**	Biomaterials (PE-BT702A) Nano Biotechnology (PE-BT702B) Biosensors & Diagnostics (PE-BT702C) Genomics and Proteomics (PE-BT702D) Medical & Pharmaceutical Biotechnology (PE-BT702E)	2	0	0	2	2

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Code	Field	Practical/ Sessional	L	T	P	Total	Cr. Points
OE-BT701	**Open Elective Courses**	Biosafety (OE-BT701A) / Soft Skill (OE-BT701B) / Research Methodology (OE-BT701C)	2	0	0	2	2
		Total of Theory				**10**	**10**

B. PRACTICAL (7th Sem)

Code	Field	Practical/ Sessional	Contact Hours/Week				Cr. Points
			L	**T**	**P**	**Total**	
HM-BT791	**Humanities and social Science and Management course**	Group Discussion	0	0	1	1	0.5
PE-BT791	**Professional Core Elective**	Food Biotechnology Lab (PE-BT791A)/ Bioprocess and Process Instrumentation Control Lab (PE-BT791B)	0	0	2	2	1
SI-BT791	**Summer Internship**	Industrial project/training (Report, Power point Presentation & Viva Voce)	6 to 8 weeks(Summer vacation in between 6th and 7th sem))				1.5
		Total of Practical				**3**	**3**
		Total of Semester				**13**	**13**

A. Project (8th Sem)

Code	Field	Theory	Contact Hours/Week				Cr. Points
			L	**T**	**P**	**Total**	
PW-BT881	**Project**	Project work (Inhouse/ Industry/ Research Institute)	0	0	12	12	10
PW-BT882	**Project**	Project Report-II Report and Defense Seminar by PPT	0	0	0	0	2
PW-BT883	**Project/Overall**	Grand Viva (Comprehensive Viva Voce)	0	0	0	0	2
		Total of Project				**12**	**14**
		Total of Semester				**12**	**14**