

# JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

## Department of Biotechnology and Bioinformatics 4 year B.Tech Curricula for Bioinformatics (2010)

### B.Tech. I semester (B1)

S.No.	Sub Code	Subject	Contact Hrs	Credits
1.	10B11PD111	Presentation and Communication skill	3	3
2.	10B11MA111	Mathematics-I	4	4
3.	10B11PH111	Physics-I	4	4
4.	10B11BI111	Metabolic Networks	4	4
5.	10B11CI111	Introduction to Computers & Programming	4	4
6.	10B17PH171	Physics Lab-I	2	1
7.	10B17BI171	Metabolic Networks Lab	2	1
8.	10B17CI171	Computer programming lab.	4	2
9.	10B19GE199	Institutional Orientation	2	0
<b>Total</b>			<b>29</b>	<b>23</b>

**NOTE:10B11PD199English\* (\*This subject will be offered as an audit course for students with less than 60% marks)**

### B.Tech. II semester (B2)

S. No	Sub Code	Subject	Contact Hrs	Credits
1.	10B11PD211	Group and Cooperative Processes	3	3
2.	10B11MA201	Mathematics-II	4	4
3.	10B11PH212	Biophysical Techniques	4	4
4.	10B11BI211	Structural Biology	4	4
5.	10B11CI211	Data Structures	4	4
6.	10B17PH272	Biophysical Techniques lab.	2	1
7.	10B17BI271	Structural Biology lab.	2	1
8.	10B17CI271	Data Structures & Computer Programming Lab.	4	2
9.	10B19BT299	Departmental Orientation	2	0
<b>Total</b>			<b>29</b>	<b>23</b>

### B.Tech. III semester (B3)

S. No.	Sub Code	Subject	Contact Hrs	Credits
1.	10B11PD311	Managerial Economics	3	3
2.	10B11MA311	Probability & Statistics	4	4
3.	10B11CI312	Database Systems	4	4
4.	10B11BI311	Biological Computation	4	4

5.	10B11BT313	Microbiology	4	4
6.	10B17CI372	Database Systems Lab.	2	1
7.	10B17BT373	Microbiology Lab	2	1
8.	10B17BI371	Biological Computation Lab	2	1
9.	10B17BI372	Biological Databases Lab	2	1
<b>Total</b>			<b>27</b>	<b>23</b>

### B.Tech. IV semester (B4)

S. No.	Sub Code	Subject	Contact Hrs	Credits
1.	10B11PD411	Financial Management	3	3
2.	10B12MA421	Biostatistics	4	4
3.	10B12PH421	Statistical Thermodynamics	4	4
4.	10B11BI411	Molecular Genetics	4	4
5.	10B11CI311	Object Oriented Programming	4	4
6.	10B17BI471	Molecular Genetics lab.	2	1
7.	10B17BI472	Molecular Simulation Lab	2	1
8.	10B17BI473	Bioprogramming Lab	2	1
9.	10B17CI371	Object Oriented Programming Lab	2	1
10	10B11GE411	Environmental Studies	3	3
<b>Total</b>			<b>30</b>	<b>26</b>

### B.Tech. V semester (B5)

S. No.	Sub Code	Subject	Contact Hrs	Credits
1.	10B11PD511	Social and Legal Issues	3	3
2.	10B11CI412	Fundamentals of Algorithms	4	4
3.	10B11BI511	Molecular Imaging and Design	4	4
4.	10B11BT513	Genetic Engineering	4	4
5.	10B11BT514	Immunology	4	4
6.	10B11BI512	Scripting Languages for Bioinformatics	4	4
7.	10B17CI472	Algorithms Lab.	2	1
8.	10B17BI571	Molecular Imaging and Design Lab.	2	1
9.	10B17BT573	Genetic Engineering Lab.	2	1
10.	10B17BT574	Immunology Lab.	2	1
11.	10B17BI572	Scripting Languages for Bioinformatics Lab.	2	1
<b>Total</b>			<b>33</b>	<b>28</b>

### B.Tech. VI semester (B6)

S. No.	Sub Code	Subject	Contact Hrs	Credits
1.	10B11PD611	Project Management	3	3
2.	10B11BT611	Comparative & Functional Genomics	4	4
3.	10B11BI611	Advanced Chemoinformatics	4	4
4.	10B11BI612	Machine Learning for Bioinformatics	4	4

5.	10B11BI613	Drug Designing Techniques	4	4
6.	10B11BI614	Advanced Algorithms for Bioinformatics	4	4
7.	10B17BT671	Comparative & Functional Genomics lab.	2	1
8.	10B17BI671	Chemoinformatics Lab.	2	1
9.	10B17BI672	Machine Learning for Bioinformatics lab.	2	1
10.	10B17BI673	Drug Designing Techniques lab.	2	1
11.	10B17BI674	Advanced Algorithms for Bioinformatics Lab.	2	1
		<b>Total</b>	<b>33</b>	<b>28</b>

### B.Tech. VII semester (B7)

S. No.	Sub Code	Subject	Contact Hrs	Credits
1.		Professional Dev – VII	3	3
2.		DE-I	3	3
3.		DE-II	3	3
4.		DE-III	3	3
	10B19BI791	Project Part-I	20	10
		<b>Total</b>	<b>32</b>	<b>22</b>

**List of courses for PD Elective-I To be updated from time to time**

**Typical List of Departmental Elective Subjects for DE-I, DE-II and DE-III**

**To be updated from time to time**

**List of Electives DE-I, DE-II, DE-III**

Sub Code	New Code	Subject
<b>07B72BI401</b>	10B13BI731	Systems Biology
<b>07B72BI402</b>	10B13BI732	Microbial Genomics
<b>07B72BI403</b>	10B13BI733	Clinical Trials & DBM
<b>07B72BI404</b>	10B13BI734	Quantitative Structure Activity Relationship
<b>07B72BI405</b>	10B13BI735	Protein Simulation & Modeling
<b>07B72BI406</b>	10B13BI736	BI High Throughput Screening
<b>07B72BI407</b>	10B13BI737	Human Genome & Therapeutics
<b>07B72BI408</b>	10B13BI738	Visual Computing

### B.Tech. VIII semester (B8)

S. No.	Sub Code	Subject	Contact Hours	Credits
1.		Professional Dev – VIII	3	3
2.		DE-IV	3	3
3.		DE-V	3	3
4.		DE-VI	3	3
5.	10B19BI891	Project Part-II	20	10
		<b>Total</b>	<b>32</b>	<b>22</b>

---

**List of Electives DE-I, DE-II, DE-III**

<b>Sub Code</b>	<b>New Code</b>	<b>Subject</b>
<b>07B72BI411</b>	10B13BI831	Tool Design in Bioinformatics
<b>07B72BI412</b>	10B13BI832	Pharmacogenomics
<b>07B72BI413</b>	10B13BI833	Artificial Intelligence for Bioinformatics
<b>07B72BI414</b>	10B13BI834	Algorithms in Molecular Biology
<b>07B72BI415</b>	10B13BI835	Pattern Recognition
<b>07B72BI416</b>	10B13BI836	Immunocomputing
<b>07B72BI416</b>	10B13BI837	Cybernetics
<b>07B72BI409</b>	10B13BI838	Animal Genomics
<b>07B72BI410</b>	10B13BI839	Pathogen Genomes