



# BVDU-RGITBT-ADB (Advanced Diploma in Bioinformatics, Post Graduate Diploma) Syllabus

**2019**

**BHARATI VIDYAPEETH DEEMED TO BE UNIVERSITY  
PUNE**

**REVISED SYLLABUS FOR  
Advanced Diploma in Bioinformatics  
(Post Graduate Diploma)**

**UNDER  
FACULTY OF INTERDISCIPLINARY STUDIES**



**SYLLABUS OF SEM I – SEM II**

**UNDER  
CREDIT SYSTEM**

**To be effective from Academic Year  
2019-20**

Bharati Vidyapeeth Deemed To Be University is a multidisciplinary, multicampus university having 32 Institutions imparting quality education in various disciplines. All programmes of the University are approved by UGC and respective statutory councils. BVDU has been re accredited for the third time with 'A+' grade by NAAC in 2017. UGC has accorded 12B Status [UGC ACT1956] to the university. Ministry of Human Resource and Development, Government of India has awarded "A" category to the University in 2012 based on parameters including innovative programs, research and infrastructure facilities. The University is a member of Association of Indian Universities [AIU] which has ranked BVDU among top 10 universities of India for International students' enrollment. BVDU is also a member of International Association of Universities.

Rajiv Gandhi Institute of IT and Biotechnology is a constituent unit of BVDU established in 2003. The Institute is approved by UGC to conduct graduate and post graduate courses in Biotechnology. The Institute has excellent infrastructure, state-of-the-art laboratories and competent faculty facilitating appropriate learning environment. The Institute offers one undergraduate and four postgraduate programmes in Biotechnology.

**Course structure of Advanced Diploma in Bioinformatics**  
**Under Credit System Based Course 2019-20**

**SEMESTER I**

<b>Course No. &amp; Description</b>	<b>Title</b>	<b>Credits</b>	<b>IA</b>	<b>Univ. Exam</b>	<b>Total Credits</b>
<b>ADB 101</b> Basic Course-Theory	Cell Biology <b>(C)</b>	<b>2</b>	20	30	<b>28</b>
<b>ADB 102</b> Basic Course –Theory	Biochemistry <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 103</b> Basic Course –Theory	Biomathematics <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 104</b> Basic Course –Theory	Biostatistics <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 105</b> Basic Course –Theory	C Programming and Data structure <b>(C)</b>	<b>3</b>	40	60	
<b>ADB 106</b> Basic Course – Theory	Biological Informatics <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 107</b> Basic Course – Theory	DBMS & MongoDB <b>(C)</b>	<b>3</b>	40	60	
<b>ADB 108</b> Core Course - Theory	Python	<b>2</b>	20	30	
<b>ADB 109</b> Basic Course –Practical	Cell Biology and Biochemistry Lab <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 110</b> Basic Course –Practical	C Programming and Data Structure Lab <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 111</b> Basic Course –Practical	Biological Informatics Lab <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 112</b> Basic Course –Practical	DBMS & MongoDB lab <b>(C)</b>	<b>2</b>	20	30	
<b>ADB 113</b> Core Course - Practical	Python Lab	<b>2</b>	20	30	

## SEMESTER II

Course No. & Description	Title	Credits	IA	Univ. Exam	Total Credits
<b>ADB 201</b> Core Course –Theory	Statistical Analysis System (SAS) (C)	2	20	30	<b>32</b>
<b>ADB 202</b> Core Course –Theory	R and Data Analytics (C)	3	40	60	
<b>ADB 203</b> Core Course –Theory	JAVA and BioJAVA Programming (C)	3	40	60	
<b>ADB 204</b> Core Course –Theory	Science of Omics (C)	3	40	60	
<b>ADB 205</b> Core Course - Theory	Proteomics (C)	2	20	30	
<b>ADB 206</b> Advance Course -Theory	Advanced Bioinformatics	2	20	30	
<b>ADB 207</b> Advance Course -Theory	Data Mining through Machine Learning	2	20	30	
<b>ADB 208</b> Advance Course-Theory	Molecular Modeling & Drug Designing	3	40	60	
<b>ADB 209</b> Core Course - Practical	SAS and Data Analytics lab (C)	2	20	30	
<b>ADB 210</b> Core Course - Practical	JAVA and BioJAVA Programming lab (C)	2	20	30	
<b>ADB 211</b> Core Course - Practical	Omics Analysis Lab (C)	2	20	30	
<b>ADB 212</b> Advance Course - Practical	Advanced Bioinformatics Lab	2	20	30	
<b>ADB 213</b> Advance Course- Practical	Data Mining through Machine Learning Lab	2	20	30	
<b>ADB 214</b> Advance Course- Practical	Molecular Modeling & Drug Designing Lab	2	20	30	

**Total Credits Offered: 28 C, Sem I+ 32 C, Sem II = 60**