

# SCHOOL OF STUDIES IN BIOTECHNOLOGY

Pt. Ravishankar Shukla University  
Raipur-492 010

## Syllabus

### Ph.D. Course Work in Biotechnology

Session  
2019-2020

Maitulkar  
28/12/18  
B. Sahu  
28/12/18

Bull  
28/12/18

Heshan

M. V.  
28/12/18

J.

BoS approved syllabus for Ph.D. Course Work in Biotechnology  
(Academic session 2019-20)

**School of Studies in Biotechnology**  
**Syllabus for PhD Course Work in Biotechnology (2019-20)**  
**One Semester**

There will be two papers; each with 100 marks maximum.

**Paper-I: Research Methodology, Advanced Tools & Techniques, Quantitative Data Analyses and Computer Fundamentals**

**Paper-II Review of Literature & Seminar**

<b>Paper- I: Research Methodology, Advanced Tools &amp; Techniques, Quantitative Data Analyses and Computer Fundamentals</b>		<b>Maximum Marks</b>
<b>A</b>	<b>Research Methodology</b> Essential steps in research: Identification, Selection of objectives, Research design: - Components, importance of literature collection, citation & indexing. Research ethics, IPR, Experimental error and control, Research Report Presentation-table, Figure, Formatting and typing	<b>25.0</b>
<b>B</b>	<b>Advanced Tools &amp; Techniques</b> Electrophoresis, HPLC, Microscopy, PCR, Biosensors: Types, Application of biosensor, Protein sequencing, DNA sequencing, Radioisotope Techniques	<b>25.0</b>
<b>C</b>	<b>Quantitative Data Analysis</b> Measures of variability: Standard Deviation, Standard Error, Coefficient of Variation, Correlation and Regression, Test of Significant: t-test, chi-square test, Frequency distribution: Binomial and normal distribution	<b>25.0</b>
<b>D</b>	<b>Computer Fundamentals</b> Computer Application, Application of software, Internet and Biotechnology, Fundamental of Bioinformatics, Biological databases and Biotechnology	<b>25.0</b>
<b>Paper-II: Review of Literature &amp; Seminar</b>		<b>Maximum Marks</b>
<b>A</b>	<b>Review of Literature- Writing review of literature in the area of the proposed Ph.D. program</b>	<b>50.0</b>
<b>B</b>	<b>Seminar-Based on the review of literature</b>	<b>50.0</b>

**Note:**

- There will be FOUR units (A, B, C & D) of 25 marks each. The pattern will include both objective (multiple-choice questions) and subjective (short answer, using 50 to 100 words) questions.
- The candidate should obtain 50% or more marks to qualify in the course work examination. Each answer paper will be assessed by two examiners independently.

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*Meenuk*  
28/12/18

*BSahu*  
28/12/18

*BoS*

*Debash*

*28/12/18*