

**GOVERNMENT VISHWANATH YADAV TAMASKAR  
POST GRADUATE AUTONOMOUS COLLEGE  
DURG (C.G.)**

**(Former Name – Govt. Arts & Science College, Durg)**

**Phone-0788-2211688, Fax- 0788-2212030**

**NAAC Accredited Grade 'A+'; CPE Phase - III (UGC, N. Delhi)**

**Website – [www.govtsciencecollegedurg.co.in](http://www.govtsciencecollegedurg.co.in)**

**DEPARTMENT OF BIOTECHNOLOGY**



**SYLLABUS**

**Ph.D. Course Work**

**2022-23**

**PERIOD – SIX MONTHS**

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**SYLLABUS**

**Ph.D. Course Work**

**2022-23**

**PERIOD – SIX MONTHS**

**Syllabus for Ph.D. Course Work in Biotechnology  
(2022-23)  
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 – I : 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	25.0
<b>B</b>	<b>Advanced Tools &amp; Techniques</b> Electrophoresis, HPLC, Microscopy, PCR, Biosensors: Types, Application of biosensor, Protein sequencing, DNA sequencing, Radioisotope Techniques	25.0
<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	25.0
<b>D</b>	<b>Computer Fundamentals</b> Computer Application, Application of Software, Internet and Biotechnology, Fundamental of Bioinformatics, Biological databases and Biotechnology	25.0
<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>	50.0
<b>B</b>	<b>Seminar – Based on the review of literature</b>	50.0

**Note:** The syllabus has been adopted from Ph.D. Course work syllabus of Hemchand Yadav Vishwavidyalaya, Durg.

The syllabus for M.Sc. Biotechnology is hereby approved for the session 2022-23-24.

Name and Signatures	
University Nominee – Prof. K. K. Sahu .....	Expert from other subject – Prof. Ranjana Shrivastava.....
Subject Expert –Dr. Pramod Mahish.....	Teacher Representation – Dr. Shweta Pandey.....
Subject Expert – Prof. M. M. Rai.....	Industrial Representation-Mr. Premanjan Biswas.....
Chairperson – Prof. Anil Kumar .....	Student Representation – Dr. Nikhil Mishra.....