

# B.Sc. Chemistry

Where Elements Inspire Innovation

## **About the Programme**

Discover the science that powers medicines, materials, energy, and life itself. The B.Sc. Chemistry programme at **P. Jog College of Science and Commerce** blends conceptual understanding with practical, industry-oriented laboratory training, preparing students for careers across research, pharmaceuticals, environmental science, and technology.

## **Course Outcomes :**

- Understand chemical structures, reactions, mechanisms, and thermodynamics.
- Perform qualitative and quantitative analysis using modern instruments.
- Follow safe, standardized lab practices.
- Apply chemical principles to industrial and environmental challenges.
- Communicate scientific data clearly and confidently.

## **Skills Students Gain :**

- Laboratory: Spectroscopy, chromatography, synthesis.
- Instrumentation: UV-Vis, basic HPLC.
- Analytical: Testing, sample prep, data interpretation.
- Research: Experiment design, reporting, documentation.
- Soft Skills: Critical thinking, teamwork, scientific communication.

## **Career Opportunities :**

- QC / QA Officer
- Research Assistant
- Chemical Analyst
- Production Supervisor (Pharma/Chemicals)
- Process Chemist

# Syllabus Structure

## First Year (SEM I , II)

<b>Semester I</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
CHE-101-T	Fundamentals of Chemistry-I	2
CHE-102-P	Chemistry Practical-I	2

<b>Semester II</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
CHE-151-T	Fundamentals of Chemistry-II	2
CHE-152-P	Chemistry Practical -II	2

## Second Year (SEM III , IV)

<b>Semester III</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
CHE-201-MJ-T	Physical Chemistry-I	2
CHE-202-MJ- T	Inorganic Chemistry-I	2
CHE-203-MJP	Chemistry Practical- III	2

<b>Semester IV</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
CHE-251-MJ-T	Organic Chemistry-I	2
CHE-252-MJ-T	Analytical Chemistry-I	2
CHE-253-MJ-P	Chemistry Practical – IV	2

**Third Year (SEM V, VI)**

<b>Semester V</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
CH-501	Physical Chemistry-I	2
CH-502	Analytical Chemistry-I	2
CH-503	Physical Chemistry Practical-I	2
CH-504	Inorganic Chemistry-I	2
CH-505	Industrial Chemistry	2
CH-506	Inorganic Chemistry Practical-I	2
CH-507	Organic Chemistry-I	2
CH-508	Chemistry of Biomolecules	2
CH-509	Organic Chemistry Practical-I	2
CH-510	Introduction of Medicinal Chemistry OR Polymer Chemistry	2
CH-511	Environmental Chemistry OR Chemo informatics	2

<b>Semester VI</b>		
<b>Sub Code</b>	<b>Sub Name</b>	<b>Credits</b>
CH-601	Physical Chemistry-II	2
CH-602	Physical Chemistry-III	2
CH-603	Physical Chemistry Practical-II	2
CH-604	Inorganic Chemistry-II	2
CH-605	Inorganic Chemistry-III	2
CH-606	Inorganic Chemistry Practical-II	2
CH-607	Organic Chemistry-II	2
CH-608	Organic Chemistry-III	2
CH-609	Organic Chemistry Practical-II	2
CH-610	Chemistry of soil & agrochemicals OR Introduction of forensic Chemistry	2
CH-611	Analytical Chemistry-II OR Chemistry of Cosmetics and perfumes	2