

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

NATIONALLY ACCREDITED WITH “A” GRADE BY NAAC

ISO 9001:2015 Certified

TIRUCHIRAPPALLI

PG DEPARTMENT OF CHEMISTRY



B.Sc. Chemistry

Syllabus

2022-2023 and Onwards

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

PG DEPARTMENT OF CHEMISTRY

VISION

- To progress into a centre of superiority in Chemistry that will blend state-of-the-art practices in professional teaching in a communally enriching way, with the holistic progress of the students as its prime emphasis.

MISSION

- To produce graduates committed to integrity, professionalism and lifelong learning by widening their knowledge horizons in range and depth.
- To awaken the young minds and discover talents to achieve personal academic potential by creating an environment that promotes frequent interactions, independent thought, innovations, modern technologies and increased opportunities.
- To enhance the quality through basic and applied research frameworks, and encourage the students to take part in entrance and competitive examinations for higher studies and career.
- To enhance services to the community and build partnerships with the industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Statements
PEO1	LEARNING ENVIRONMENT To facilitate value-based holistic and comprehensive learning by integrating innovative learning practices to match the highest quality standards and train the students to be effective leaders in their chosen fields.
PEO2	ACADEMIC EXCELLENCE To provide a conducive environment to unleash their hidden talents and to nurture the spirit of critical thinking and encourage them to achieve their goal.
PEO3	EMPLOYABILITY To equip students with the required skills in order to adapt to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains.
PEO4	PROFESSIONAL ETHICS AND SOCIAL RESPONSIBILITY To develop a sense of social responsibility by formulating ethics and equity to transform students into committed professionals with a strong attitude towards the development of the nation.
PEO5	GREEN SUSTAINABILITY To understand the impact of professional solutions in societal and environmental contexts and demonstrate the knowledge for an overall sustainable development.

PROGRAMME OUTCOMES FOR B.Sc. Mathematics, B.Sc. Physics,

B.Sc. Chemistry PROGRAMME

PO No.	Programme Outcome On completion of B.Sc. Mathematics, B.Sc. Physics, B.Sc. Chemistry Programme, the students will be able to
PO1	DOMAIN KNOWLEDGE: Analyze, design and develop solutions by applying firm fundamental concepts of basic sciences and expertise in discipline
PO2	PROBLEM SOLVING: Ability to think rationally, analyse and solve problems adequately with practical knowledge to assess the environmental issues
PO3	CREATIVE THINKING AND TEAM WORK: Develop prudent decision-making skills and mobility to work in teams to solve multifaceted problems.
PO4	EMPLOYABILITY: Self-study acclimatize them to observe effective interactive practices for practical learning enabling them to be a successful science graduate.
PO5	LIFE LONG LEARNING: Assure consistent improvement in the performance and arouse interest to pursue higher studies in premium institutions.

PROGRAMME SPECIFIC OUTCOMES FOR B.Sc. CHEMISTRY

PSO No.	Programme Specific Outcomes Students of B.Sc. Chemistry will be able to	POs Addressed
PSO1	Afford a firm foundation in Chemistry that stresses scientific reasoning, analytical problem solving with a molecular perspective.	PO1 PO2
PSO2	Acquire knowledge in theoretical and practical tools to exemplify entirely in the working environment.	PO4 PO5
PSO3	Inculcate scientific temperament and create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community.	PO3 PO4
PSO4	Scale up of chemical process after designing, optimization and analysis for developing products required for society.	PO4
PSO5	Expand the knowledge available opportunities related to chemistry in the government services through public service commission particularly in the field of food safety, health inspector, pharmacist etc.	PO4 PO5

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PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Statements
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PEO2	ACADEMIC EXCELLENCE To provide a conducive environment to unleash their hidden talents and to nurture the spirit of critical thinking and encourage them to achieve their goal.
PEO3	EMPLOYABILITY To equip students with the required skills in order to adapt to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains.
PEO4	PROFESSIONAL ETHICS AND SOCIAL RESPONSIBILITY To develop a sense of social responsibility by formulating ethics and equity to transform students into committed professionals with a strong attitude towards the development of the nation.
PEO5	GREEN SUSTAINABILITY To understand the impact of professional solutions in societal and environmental contexts and demonstrate the knowledge for an overall sustainable development.

PROGRAMME OUTCOMES FOR M.Sc. Mathematics, M.Sc. Physics,

M.Sc. Chemistry PROGRAMME

PO No.	Programme Outcome On completion of M.Sc. Programme, the students will be able to
PO1	PROBLEM ANALYSIS: Provide opportunities to develop innovative design skills, including the ability to formulate problems, to think creatively, to synthesize information, and to communicate effectively.
PO2	SCIENTIFIC SKILLS: Create and apply advanced techniques and tools to solve the societal environmental issues.
PO3	ENVIRONMENT AND SUSTAINABILITY: Ascertain eco-friendly approach for sustainable development and inculcate scientific temper in the society.
PO4	ETHICS: Imbibe ethical and social values aiming towards holistic development of learners.
PO5	LIFELONG LEARNING: Instill critical thinking, communicative knowledge which potentially leads to higher rate of employment and also for higher educational studies.

PROGRAMME SPECIFIC OUTCOMES FOR M.Sc. CHEMISTRY

PSO No.	Programme Specific Outcomes Students of M.Sc. Chemistry will be able to	POs Addressed
PSO1	Acquire knowledge in basic concepts, fundamental principles, and applications of chemical and scientific theories and their relevancies in the day-to-day life.	PO1 PO2
PSO2	Design experiments, analyze, synthesize and interpret data to provide solutions to different industrial problems by working in the pure, inter and multi-disciplinary areas of chemical sciences.	PO1 PO2 PO3
PSO3	Attain maneuver in diverse contexts with Global Perspective.	PO3 PO4
PSO4	Gain a thorough Knowledge in the subject to be able to work in projects at different research as well as academic institutions.	PO1 PO2 PO5
PSO5	Afford Global level research opportunities to pursue Ph.D. programme targeted approach of CSIR – NET examination.	PO1 PO2 PO3 PO4 PO5