Government College for Women, Faridabad

Program outcomes (POs), program specific outcomes (PSOs) and course outcomes (COs) of all the programs offered by the institution

The College offers undergraduate courses in six streams: Arts, Science, Commerce, Management, Journalism & Mass Communication and Travel & Tourism Management.

Arts stream (Program outcome)

The College offers course at graduate level, BA (Bachelors in Arts)

BA is an undergraduate course with three years duration. It imparts training in art techniques with emphasis on studio & outdoor practical, prescribed theory subjects and research in selected fields.

As a part of BA course there are two compulsory subjects English and Hindi along with two electives. The elective subjects vary depending on the discipline selected by students. These subjects are History, Geography, Physical Education, Home Science, Music (Vocal & Instrumental), Psychology, Sociology, Sanskrit and Political Science.

The course also includes various skill & ability enhancement techniques, like language proficiency, computers, personality development etc., integrated in the comprehensive curriculum of BA which helps students to communicate completely through writing, reading, speaking and listening. It also helps students to connect across geographical, disciplinary, social and cultural boundaries to understand the importance of ethical behaviour and lifelong learning habits. The student after graduating will also be eligible for various government exams conducted by UPSC, Bank, HSSC, SSC etc. and can also opt for post-graduation in any subject they choose to study at UG level.

Overall, the degree largely focus on increasing students' knowledge and analytical thinking as prescribed in the curriculum by the affiliating university (MDU,ROHTAK).

Program Outcomes, Program Specific Outcomes and Course Outcomes

Program- B. Sc (Pass) Course

Program Outcomes (POs)

The Bachelor of Science requires three years of full-time study consisting of six semesters. The College offers B.Sc. (Pass Course) which includes three science subjects: Physics, Chemistry and Mathematics with practical as well. Apart from the specific science subjects, English, Sanskrit and Computers are also included in the curriculum. All these courses introduce a wide

range of topics to students. Students having an academic background of science (PCM) at 10+2 level can pursue this program. After the completion of the B.Sc. (Pass) degree, there are various options available for the science students. They can pursue master degree in Science i.e. M.Sc., work in research related fields and can even look for professional job-oriented courses. The students can also be recruited directly by companies, schools etc. after the completion of this program. The student after graduating will also be eligible for various government exams conducted by UPSC, Bank, HSSC, SSC etc.

Program Specific Outcomes (PSOs)

After the successful completion of B.Sc. (Pass) Course:

- Graduates will be trained to apply the basic mathematical techniques, needed to understand different branches of Physics and Chemistry through numerical exercises.
- Graduates will develop a pre-research minded approach during this entire program, which helps in forming the basic foundation of their future research career.
- Graduates will be familiarized with hands-on training in the well-furnished and well-equipped laboratories for practical verification of the physical theories that they have learned during the entire program.
- Graduates will also be trained with basic computer programming. In this program, they have learned the languages like FORTRAN, C, C++, and apply on problems through numerical analysis.
- Graduates will be eligible for the further post-graduate studies in Physics, Chemistry, Mathematics, Electronics, Computer applications etc. They can also apply for different integrated PhD courses in IITs, NITs etc.
- Graduates will also be eligible to pursue their career as teachers (TGT).
- Graduates will also be trained to apply for various trainee jobs with substantial salary packages as a complementary.
- Graduates will also possess oral and written communication skills. After graduating, they will be eligible for applying in various government examinations conducted by HSSC, HPSC, SSC etc.

Course Outcomes (COs)

Department of Physics

Being a natural science, Physics investigates on the interactions between various particles and force fields; those control the rhythms of the dynamics of the ever-alive universe. There are several aspects of the phenomena, like thermal, mechanical, electrical, magnetic etc. Mankind has understood to see the world from macroscopic to microscopic dimensions and time scales. We have moved from the quantum to nano-ages also in science and technology. We have also come across that the Physics changes when the speed of a matter becomes comparable with

speed of light, which causes the scientists to reconsider the absoluteness of space-time and put forward the special and general theory of relativity. This modification may not be needed in daily-world but surely applicable in astro and terrestrial physics. The exploration of the different fields of Physics via hard-core mathematical calculations and demonstrative verification of the theories with the help of table-top experiments, our students definitely learn and practice a lot under the guidance of a group of qualified and trained mentors.

This particular three year course in Physics prepares the students for making a career as teachers or researchers in different branches of pure and applied physics.

1. In Physics, students investigate different properties of natural objects, like thermal, mechanical, electrical, magnetic properties etc.

2. In the entire course work, the whole curriculum is divided into several branches of Physics which are further divided into various units, where an instructor genuinely discusses on each of the manifestations in detail.

3. The approach is both theoretical and experimental as well.

4. In accordance with the recent developments in information technology, the students also get familiarized with the basic computer programming in which they learn the basic computer languages like FORTRAN, C, C++ with the motivation for the applications in Physics.

5. They learn the basic mathematical tools like vector analysis, differential equations, Fourier analysis and Fourier transforms matrix methods, complex analysis etc. and their applications in some standard Physics problems.

6. The mechanical and general properties of matter are also discussed. Courses go beyond Newtonian mechanics, and discuss on Lagrangian and Hamiltonian mechanics. Several particles in nature move with a speed comparable to the speed of light. Students further learn the Einstein's modification on the concept of space-time, through special theory of relativity (STR).

7. The students also study the Physics of immobile charges and charges in motion (electrostatics, electrodynamics and magnetostatics) in this course. They learn how the electric and magnetic waves, obeying Maxwell's fundamental equations, are realized as electromagnetic waves. Students also study the behavior of light through Ray-optics, wave-optics (Interference, diffraction and polarization) in detail. The modern advances of applied optics in the line of LASER are also discussed here.

8. The students also learn about the motion of electrons inside extrinsic semiconductors and different kinds of junctions with their important applications in the science and technology through their course on electromagnetic induction and electronic devices.

9. Kinetic Theory, Thermodynamics and Statistical mechanics are three branches of thermal Physics. Students learn their approach and difference in detail. They are deeply familiarized with the different types of statistics, like Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics. They are also get familiar with a completely new state of matter i.e, Bose-Einstein Condensates.

10. Students further learn that, all the microscopic (quantum) particles follow a completely different branch of mechanics during its motion, known as Quantum Mechanics in detail.

11. Students also learn about a new branch of Physics in detail which deals with the study of crystalline solids i.e., Solid State Physics or Condensed matter Physics.

12. The sub-atomic particles like electrons, protons and neutrons obey some salient Physics, which are discussed in detail in the course of atomic, molecular and nuclear physics.

In this pass course, students learn all of these in a more compact way. This course is framed in a simpler way to provide a general outreach of the entire subject.

Department of Chemistry

The purpose of the undergraduate chemistry subject is to provide the basic key knowledge and laboratory resources to the students to prepare them as professionals in the field of chemistry. They also get prepared to opt for further post graduate study in chemistry and related field. Students will have a firm foundation in the fundamentals and applications of current chemical and scientific theories included in Inorganic chemistry, Organic chemistry and Physical. This provides an understanding of major concepts, theoretical principles and experimental findings in chemistry and an ability to work effectively in diverse teams in both classroom and laboratory. The Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments. Chemistry is an integral part of everyday life. This course will give an insight into the processes involved in the production of soaps, detergents, cosmetics etc. This will give us information regarding what is the difference between the various types of soaps, their mode of action. A student can also become enlightened about food science, nano-materials, drugs, plastics, dyes and paper. This paper also gives elementary ideas on pesticides and fertilizers. The aim of chemistry is not only to impart essential theoretical knowledge on atomic structure, periodic properties and chemical bonding but the students will get training for systematic qualitative analysis of simple organic compounds also. Students will demonstrate the ability to access and interpret information, respond and adapt to changing situations, make complex decisions, solve problems and evaluate actions. Students will demonstrate a depth of knowledge and apply the methods of inquiry in a discipline of their choosing, and they will demonstrate a breadth of knowledge across their choice of varied disciplines.
The course enables the students

- To understand basic facts and concepts in Chemistry while retaining the exciting aspects of Chemistry so as to develop interest in the study of chemistry as a discipline.
- To develop the ability to apply the principles of Chemistry.
- To appreciate the achievements in Chemistry and to know the role of Chemistry in nature and in society.
- To develop problem solving skills.
- To be familiarized with the emerging areas of Chemistry and their applications in various spheres of Chemical sciences and to apprise the students of its relevance in future studies.
- To develop skills in the proper handling of apparatus and chemicals.
- To be exposed to the different processes used in industries and their applications.
- To impart students a broad outline of the methodology of science in general and Chemistry in particular. The students will learn the important analytical and instrumental tools used for practicing chemistry.
- To develop skills for quantitative estimation using the different branches of volumetric analysis.

Inorganic Chemistry: Course Outcome

- To develop interest among students in various branches of inorganic chemistry. To impart essential theoretical knowledge on atomic structure, periodic properties and chemical bonding.
- To give the students a thorough knowledge of the different theories to explain the bonding in coordination compounds. To improve the level of understanding of the chemistry of organo-metallic compounds, metal carbonyls and metal clusters. To give knowledge about some bioinorganic compounds and compounds of p-block elements. This will give the students a basic understanding of nuclear chemistry, Bioinorganic Compounds.

Organic Chemistry: Course outcome

- To make students capable of understanding nomenclature, classification of organic compounds and reactions, to have exposure to various emerging new areas of organic chemistry.
- To impart the students a thorough knowledge about the chemistry of some selected functional groups with a view to develop proper aptitude towards the study of organic compounds and their reactions.
- To develop skills required for the qualitative analysis of organic compounds, determination of physical constants.
- To impart the students a thorough knowledge about the mechanisms of reactions of some selected functional groups in organic compounds and also to give an outline of applied organic chemistry and the applications of organic chemistry in various spheres of chemical sciences.

- To give an elementary idea of chemotherapy, organic compounds like carbohydrates, dyes and heterocyclic compounds.

Physical chemistry: Course outcome

- To understand the general characteristics of different states of matter.
- To impart knowledge to the students about the intermolecular forces in gases and liquids, the structure of solids, defects in solids and surface chemistry.
- To impart the students concepts of the fundamentals of quantum mechanics and its applications in the study of structure of atoms, bonding in molecules and molecular spectroscopy. To impart a thorough knowledge of the fundamentals of microwave, infra red, Raman, electronic, NMR, and ESR spectroscopy.
- To provide an insight into the thermodynamic and kinetic aspects of chemical reactions and phase equilibrium, to derive some thermo-chemical equations and kinetic equations.
- To study phase diagrams and elementary idea of catalysis.
- To provide an insight into the characteristics of different types of solutions and electrochemical phenomena.
- To learn ionic equilibrium and electrical properties of ions in solution.
- To learn the concepts of photochemistry and group theory.

In this pass course, students learn all of these in a more compact way. This course is framed in a simpler way to provide a general outreach of the entire subject.

Department of Mathematics

The course has been designed in a manner so that the students gain an in-depth knowledge of a broad range of topics and to produce students with good-firm background in both theoretical and applied Mathematics. This course offers theoretical subjects like Groups and Rings, Real and Complex Analysis, Algebra and applied subjects like Numerical Analysis and C programming, Ordinary and Partial Differential Equations. The primary aim of the course is to enable students to develop analytical thinking and apply analytical and theoretical skills to model and solve real-world mathematical problems. On one hand, the course provides the knowledge of a wide range of mathematical techniques and application of mathematical methods in scientific and engineering domains while on the other hand, it provides advanced knowledge in pure mathematics that allows students to pursue higher mathematics in higher education institutes.

After completing this course, these mathematical subjects make the students eligible for M.Sc. in Mathematics. Students may pursue many professional courses like MCA, M.Sc. Operational Research, Actuarial Science etc.. Basic knowledge of programming skills gained during this course opens the door to professional certification of data sciences, programming languages etc.

1. The course offers subjects of both pure and applied mathematics.

2. Students will be able to solve a system of equations, understand the concept of linear independence of vectors, basis, orthogonality, eigen values, eigen vectors etc. through Algebra and Linear Algebra. These topics form the basics of several real-applications of engineering and basic sciences.
3. Topics in Linear Algebra are basic requirements for computer science, physics, data science, statistics, and machine learning.
4. Students learn numerical methods that are specifically applied in situations where exact solution is difficult to obtain. The subject will enable students to solve a system of equations, numerically find the roots of equations of any degree, numerically integrate and differentiate.
5. The department firmly believes that knowledge of programming languages will enable students to be employable in the industry. The mathematics and Physics department offers C programming course also in which the students are not only able to develop basic programming skills but also learn to implement numerical methods.
6. Students investigate and analyse the solutions of ordinary and partial differential equations which may be further applied in modelling several real-world problems like population dynamics, alcohol consumption, traffic flow etc.
7. Subjects like Abstract Algebra (Groups and Rings) will help students to understand the idea of a group, ring and an integral domain. The theoretical understanding of the course allows students to appreciate and prove the basic results of group and ring theory. By pursuing this subject in future, students will be able to explore its applications in cryptography, advanced number theory and algebraic topology.
8. Students further learn about vector calculus, statics, and dynamics which are essential in physics as well as mathematics. These subjects are interdisciplinary in nature and display a strong relation between mathematics and physics.
9. The course also offers several topics of analysis that provides a basic understanding of real and complex systems. The subject provides a working knowledge of limits, continuity, uniform continuity, differentiability, convergence analysis, Riemann Integral. The students are able to appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.
10. All the mathematical topics included in the course will also prepare students to pursue research or have a career in industry in mathematical sciences and allied fields.

In this pass course, students learn all of these in a more compact way. This course is framed in a simpler way to provide a general outreach of the entire subject.

B.Com Programme Outcomes

B.com is a three years course with six semesters. After completing this program, students will be able to:

- Opt any professional course after this program. Like LLB, Diploma as a Tax Consultant, M.Com, MBA in finance, Banking, HRM, IT, Insurance etc.
- Prepare themselves for different professional exams like CA, CS, CMA, ICWA and other professional courses.
- Start their own start-up business as they already have basic knowledge of all Commerce and Trade related activities.
- Able to indulge in most of the economic activities of Auditing, Finance and Marketing in a very efficient and effective manner.
- Work in various fields like Banking, Insurance and Taxation.
- Get a Job of an Accountant or A Banker or A Junior financial Analyst or a financial advisor etc.
- Learn what is SENSEX, NIFTY, NSE etc. and how share market works so they can easily deal with such markets and earn.
- Through knowledge of various sources of capital they can earn or deploy funds through market.
- Demonstrate knowledge related to various Practical and Real-life related issues like where, When and How to invest and in What proportion i.e. in the form of Debt or in the form of Owner.
- Demonstrate knowledge about Management and accounting and take any decision in a critical situation.
- Demonstrate knowledge about GST and Customs laws. They will come to know How to Import and Export in GST scenario.
- Demonstrate the fundamentals of creating and managing innovation, new business development, and high-growth potential entities.
- Enjoy successful professional and personal life by managing work and home effectively.

BBA PROGRAM OUTCOMES

College offers three years Bachelor of Business Administration program consisting of six semesters. The program outcomes for the students are as follows: -

PROGRAMME OUTCOMES:

Upon graduation, students will be able to:

- Exhibit understanding of broad business concepts and principles.
- To identify and define problems and opportunities.
- Demonstrate the ability to identify a business problem, isolate its key components, analyse and assess the salient issues, set appropriate criteria for decision making, and draw appropriate conclusions and implications for proposed solutions.
- Demonstrate the capabilities required to apply cross-functional business knowledge and technologies in solving real-world business problems.
- Demonstrate use of appropriate techniques to effectively manage business challenges.
- Capable of recognizing and resolving ethical issues.

- Effectively communicate business issues, management concepts, plans and decisions both in oral and written form using appropriate supportive technologies.
- Develop various real time applications using latest technologies and programming languages.
- Possess strong foundation for their higher studies.
- Blend analytical, logical and managerial skills with the technical aspects to resolve real world issues.
- Become employable in various IT companies and government jobs.

PROGRAMME SPECIFIC OUTCOMES:

BBA programme has been designed to prepare graduates for attaining the following specific outcomes:

- **Critical Thinking Skills**:

Students are able to define, analyse, and devise solutions for structured and unstructured business problems and issues using cohesive and logical reasoning patterns for evaluating information, materials, and data.

- **Communication Skills:** Students are able to conceptualize a complex issue into a coherent written statement and oral presentation.

- **Technology Skills:** Students are competent in the uses of technology in modern organizational operations.

- **Entrepreneurship and Innovation**: Students can demonstrate the fundamentals of creating and managing innovation, new business development, and high-growth potential entities.

- **Business Knowledge**: Students can demonstrate technical competence in domestic and global business through the study of major disciplines within the fields of business.

Bachelor of Travel and Tourism Management (Programme Outcome)

The Bachelor of Travel and Tourism Management requires four years of full-time study consisting of eight semesters, out of these eight semesters two semesters are completely assigned for on- the- job training.

BTTM Course enhances technical skills & provides thorough knowledge about the subject, develops organizational skills, makes one to understand the demand by utilizing resources with precision by imbibing innovation and technology while applying sustainable practices of management.

On completion of this course- one becomes capable to access various job opportunities available in this domain- Travel, Hospitality, Travel Counsellors, Event Management, Cruise lines, Airlines and Tourism Departments.

Expected Program Outcome:

1. Thorough knowledge about the fundamentals of tourism and hospitality business.

2. In synchronization with its industry, the well-planned curriculum and on the job, training enhances the practical skills and equip the student to face the modern-day challenges in Global Tourism Industry.

3. Job oriented skills, to ensure that the students are fit for every challenging situation.

4. Ability to understand the trend patterns vis-à-vis developing one's entrepreneurial skills.

5. Expertise to recognize role of travel organization in the GDP of our country.

BA in Journalism and Mass Communication (Programme Outcome)

The Department of Journalism and Mass Communication was set up in 2006 at Government College for Women, Faridabad affiliated to Maharishi Dayanand University, Rohtak and offers a 3- year bachelor degree course in Journalism and mass communication. The objective of this course is to provide an in- depth understanding of the basics of Journalism and related fields. Media education provides an opportunity to get an inside view of many forms of media. With the help of this course, students can pursue career in Journalism, TV & Radio, Film making, Anchoring, Public Relations, Script writing, Multimedia, Corporate communications etc.

Programme Offered

The Department of Journalism and Mass Communication offers graduation level professional course in Journalism and Mass Communication (BAJMC).

Program Outcomes

- Students would gain in -depth knowledge about that concept, role and significance of journalism
- This course will provide students with an opportunity to hands-on practical training and knowledge across the other related media. The emphasis of the course is to groom students as a complete professional package.

- Course provides comprehensive knowledge and skills so that students can work in the field of print, electronic and digital media as well as into academics.

Students will be exposed to interdisciplinary papers also other than regular media papers.