



**A DETAILED OVERVIEW OF
INTEGRATING VALUE FRAMEWORK ENSHRINED IN
UN-SUSTAINABLE DEVELOPMENT GOALS-2030
INTO THE CURRICULUM AS REFLECTED
IN ITS PROGRAMME OUTCOMES.**

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A Detailed Overview of Integrating value framework enshrined in Sustainable Goals – 2030 into the Curriculum as Reflected in its POs.

Values enshrined in NEP-2020

The United Nations Sustainable Development Goals (SDGs)-2030 are a set of 17 global goals aimed at addressing pressing social, economic, and environmental challenges to achieve sustainable development by 2030. The values enshrined in the UN-SDG 2030 agenda include:

1. Human Dignity: The SDGs emphasize the inherent worth and equal rights of all individuals, irrespective of their background, gender, age, race, or socio-economic status.

2. Equity and Social Justice: The goals strive for a more equitable and just society, where everyone has access to opportunities, resources, and basic services, regardless of their circumstances or location.

3. Poverty Eradication: The SDGs aim to end poverty in all its forms and dimensions, ensuring that everyone can access basic necessities, enjoy a decent standard of living, and have equal economic opportunities.

4. Gender Equality: The goals advocate for gender equality and the empowerment of women and girls. They seek to eliminate gender disparities in education, employment, decision-making, and all areas of life.

5. Quality Education: The SDGs emphasize the provision of inclusive, equitable, and quality education for all, promoting lifelong learning opportunities that empower individuals and foster knowledge, skills, and values.

6. Environmental Sustainability: The goals emphasize sustainable development practices that protect and restore the planet's ecosystems, conserve natural resources, mitigate climate change, and ensure environmental sustainability for future generations.

7. Health and Well-being: The SDGs prioritize the promotion of good health and well-being for all, ensuring access to essential healthcare services, reducing maternal and child mortality, and combating communicable and non-communicable diseases.

8. Peace, Justice, and Strong Institutions: The goals call for peaceful and inclusive societies, access to justice for all, and the promotion of effective, accountable, and inclusive institutions at all levels.

9. Partnership and Collaboration: The SDGs recognize the importance of global partnerships and cooperation among governments, civil society, the private sector, and other stakeholders to achieve sustainable development.

10. Ethical and Responsible Conduct: The goals promote ethical behavior, responsible consumption and production, and the integration of ethical principles into business practices, governance, and decision-making processes.

These values guide the implementation of the SDGs, ensuring that sustainable development efforts are people-centered, inclusive, and respectful of human rights and the planet. By adhering to these values, countries, and communities work together to build a more sustainable, equitable, and prosperous future for all.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Biochemistry

P01: Reframe the conceptual understanding of molecules essential for life and their integrated system in maintaining cellular homeostasis. This PO reflects the **UN-SDG 2030 goal of promoting good health and well-being (SDG-3)**. By gaining knowledge of the molecular basis of life and cellular homeostasis, individuals can contribute to advancements in medical research, disease prevention, and the development of innovative healthcare solutions.

P02: Plan scientific research using the understanding of various biochemical techniques and represent data by applying efficient biostatistical tools. This PO which aligns with the value framework of UN-SDG 2030 by **promoting the pursuit of knowledge, scientific advancement, and evidence-based decision-making (SDG-4)**. By developing research skills and utilizing advanced techniques, individuals contribute to addressing global challenges and making informed decisions for sustainable development.

P03: Appraise the role of essential nutrients required for the body system and acquire clinical skills relating to diet plans. This PO reflects the UN-SDG 2030 goal of **ensuring good health and well-being for all (SDG-3)**. By understanding the importance of essential nutrients and acquiring clinical skills related to diet plans, individuals can contribute to promoting healthier lifestyles, addressing malnutrition issues, and improving overall well-being.

P04: Acquire in-depth theoretical and practical knowledge of Biochemistry and translate knowledge for higher contribution in the field of Biochemistry. This PO which aligns with the UN-SDG 2030 **goal of quality education (SDG-4)**. By acquiring a comprehensive knowledge of Biochemistry and applying it effectively, individuals contribute to scientific advancements, innovation, and sustainable development. This knowledge can be shared and utilized to improve educational practices and promote lifelong learning.

P05: Develop skills that help in acquiring scientific, academic, and industrial positions. This PO relates to the UN-SDG 2030 goal of **promoting decent work and economic growth (SDG-8 &SDG-10)**. By developing relevant skills, individuals can contribute to the workforce, research institutions, and industries. This promotes innovation, economic development, and progress while creating opportunities for employment and professional growth.

These Program Outcomes demonstrate the alignment between the educational objectives in the field of Biochemistry and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering sustainable development, and creating positive impacts in their respective fields and communities.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Biotechnology

P02: Learn genetics, genetic engineering, techniques, tools, and their uses in Biotechnology which aligns with the value framework of UN-SDG 2030 by **promoting scientific advancement and innovation (SDG-4)**. By gaining knowledge of genetics, genetic engineering techniques, and tools, individuals contribute to the development of sustainable biotechnological solutions, such as genetically modified organisms (GMOs) and gene therapies, which can address global challenges related to food security, healthcare, and environmental sustainability.

P03: Know instruments like Chromatography, Electrophoresis, and Centrifugation, their principles, utility, and applications reflect the UN-SDG 2030 **goal of promoting quality education and scientific research (SDG-4)**. By understanding and utilizing advanced instruments and techniques like chromatography, electrophoresis, and centrifugation, individuals can contribute to scientific advancements and research in various fields, including Biotechnology. This knowledge supports evidence-based decision-making and fosters innovation and sustainable development.

P04: Create knowledge of plant tissue culture, media, sterilization techniques, and maintaining various cultures in vitro relates to the UN-SDG 2030 goal of **ensuring sustainable agricultural practices and promoting responsible consumption and production (SDG-12)**. By acquiring skills in plant tissue culture, individuals can contribute to the development of high-yield and disease-resistant crops, the conservation of endangered species, and the efficient propagation of plants. These practices contribute to sustainable agriculture, biodiversity preservation, and responsible use of resources.

P05: Understand the concept of Environment, environmental issues, pollution types, and methods for measurement and treatment to protect the environment which aligns with the UN-SDG 2030 goal of **promoting environmental sustainability (SDG-13, SDG-15)**. By understanding environmental concepts, issues, and pollution types, individuals can contribute to addressing environmental challenges and implementing sustainable solutions. Knowledge of pollution measurement and treatment methods helps in protecting the environment, conserving natural resources, and promoting sustainable development.

These Program Outcomes demonstrate the alignment between the educational objectives in Biotechnology and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering sustainable development, and making positive contributions in the fields of Biotechnology, agriculture, healthcare, and environmental conservation.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Botany

P01: Understand the principles and importance of Botany, including plant taxonomy, diversity, physiology, bio-chemistry, molecular cytogenetics, and Statistics which aligns with the value framework of **UN-SDG 2030 by promoting the pursuit of knowledge, scientific advancement, and evidence-based decision-making (SDG-4)**. By understanding the principles and importance of Botany, students contribute to addressing global challenges related to plant conservation, biodiversity, and sustainable agriculture.

P02: Acquire skills in plant tissue culture and molecular biology for research purposes, including plant identification reflects the **UN-SDG 2030 goal of quality education and promoting scientific research (SDG-4)**. By gaining skills in plant tissue culture, molecular biology, and plant identification, students contribute to advancements in Biotechnology, agriculture, and biodiversity conservation. This knowledge and skill set are essential for developing sustainable practices and addressing food security challenges.

P03: Apply Botany in agriculture through the study of plant pathology and trace plant evolution through paleo-botany relates to the UN-SDG 2030 goal of **sustainable agriculture and responsible consumption and production (SDG13 & SDG-15)**. By understanding plant pathology and paleo-botany, students contribute to sustainable agricultural practices, disease management, and conservation of plant resources. This knowledge helps in developing resilient crops, protecting plant health, and ensuring sustainable food production.

P04: Understand the relationship between plants and society, recognizing and discussing logical scientific and ethical issues PO which aligns with the UN-SDG 2030 goal of **promoting sustainable development through the integration of social and environmental considerations (SDG-11 & SDG-15)**. By understanding Botany's social and ethical aspects, students can contribute to sustainable decision-making, responsible resource utilization, and addressing societal challenges related to agriculture, conservation, and natural resource management.

P05: Understanding environmental issues and sustainable development, including the assessment, conservation, and utilization of floral diversity reflects the UN-SDG 2030 goal of **environmental sustainability and biodiversity conservation (SDG-13 & SDG-15)**. By understanding environmental issues, students can contribute to sustainable development by promoting the conservation and utilization of floral diversity. This knowledge supports the preservation of ecosystems, sustainable resource management, and the achievement of global environmental goals.

P06: Gain knowledge about various plants and plant products, and develop entrepreneurship skills using plant resources relates to the UN-SDG 2030 goal of **promoting sustainable economic growth and decent work (SDG-8 & SDG-10)**. By gaining knowledge about plants and developing entrepreneurship skills using plant

resources, students contribute to sustainable business practices, local economic development, and the responsible use of natural resources. This fosters innovation, employment opportunities, and sustainable livelihoods.

The Program Outcomes demonstrate the alignment between the educational objectives in Botany and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering sustainable development, biodiversity conservation, responsible resource management, and addressing societal challenges related to agriculture, environment, and economic growth.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Chemistry

P01: The ability of students to think creatively, propose novel ideas, and develop observation and logical inference skills in Chemistry which aligns with the **UN-SDG 2030 goal of promoting quality education and fostering innovation (SDG-4)**. By encouraging creative thinking and problem-solving in Chemistry, students contribute to scientific advancements and the development of sustainable solutions.

P02: The recognition of interdisciplinary approaches in providing better solutions and generating new ideas for sustainable development which aligns with the **UN-SDG 2030 goal of promoting sustainable and inclusive societies (SDG-11 & SDG-17)**. By understanding the importance of interdisciplinary collaboration, students can contribute to addressing complex global challenges and achieving sustainable development goals.

P03: The acquisition of research and industrial skills, including the ability to handle scientific instruments, plan and conduct laboratory experiments, and develop a scientific temperament, which aligns with the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-1, SDG-8)**. By acquiring these skills, students can contribute to research and industrial fields, drive innovation, and support economic development.

P04: The understanding of environmental issues such as global warming, climate change, acid rain, and ozone depletion, as well as the ability to create awareness in society, which aligns with the **UN-SDG 2030 goal of ensuring environmental sustainability (SDG-13)**. By addressing these environmental challenges and raising awareness, students contribute to protecting the environment and promoting sustainable practices.

P05: The development of communication skills, including reading, listening, speaking, and expressing ideas effectively in project and seminar activities, which aligns with the **UN-SDG 2030 goal of promoting quality education and lifelong learning (SDG-4)**. By enhancing communication skills, students can effectively contribute to academic and professional environments, share knowledge, and collaborate with others to achieve common goals.

These Program Outcomes in Chemistry demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, students can actively contribute to the global goals, fostering innovation, interdisciplinary collaboration, sustainable development, environmental awareness, and effective communication in the field of Chemistry.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Computer Science

P01: Adapt skills to implement effective solutions for need-based problems using programming languages, tools, and software which aligns with the value framework of **UN-SDG 2030 by promoting innovation, technological advancement, and problem-solving (SDG-9)**. By applying knowledge gained through programming languages and tools, students can contribute to addressing various global challenges, such as developing software solutions for sustainable development, improving efficiency, and creating innovative technologies that positively impact society.

P02: Learn about operating systems, distributed systems, and decision-making regarding algorithms reflect the **UN-SDG 2030 goal of sustainable infrastructure and promoting responsible consumption and production (SDG-8 & SDG-9)**. By understanding operating systems, and distributed systems, and optimizing decisions through appropriate algorithms, students contribute to developing efficient and sustainable computing systems. This knowledge supports responsible resource management, energy efficiency, and the development of scalable and reliable technologies.

P03: Handle network-related problems, and study data communication networks and network security which aligns with the **UN-SDG 2030 goal of building resilient infrastructure and fostering innovation (SDG-9)**. By gaining knowledge of data communication networks, network security, and troubleshooting skills, students contribute to the development of secure and reliable communication systems. This supports sustainable development by enabling secure data exchange, facilitating collaboration, and ensuring the integrity of digital infrastructure.

P04: Learn and apply the concepts of software engineering for working on big modules and projects relate to the **UN-SDG 2030 goal of quality education and promoting responsible consumption and production (SDG-4 & SDG-12)**. By understanding software engineering concepts, students contribute to developing high-quality software solutions that are efficient, maintainable, and sustainable. This knowledge supports responsible software development practices, reduces waste, and promotes the long-term usability of software systems.

P05: Apply and implement the working of compilers and develop efficient scalable software solutions reflects the **UN-SDG 2030 goal of promoting sustainable economic growth and industry innovation (SDG-1, SDG-8 & SDG-9)**. By understanding the working of compilers and using various components, students contribute to developing efficient and scalable software solutions. This knowledge supports the development of sustainable technologies, fosters innovation, and contributes to the growth of the digital economy.

The Program Outcomes demonstrate the alignment between the educational objectives in Computer Science and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering

sustainable development, technological innovation, responsible resource management, and addressing societal challenges through the application of Computer Science and technology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Bachelor of Computer Application

P01: Apply knowledge of Mathematics, Computer Science, and management in practice which aligns with the value framework of **UN-SDG 2030 by promoting interdisciplinary knowledge and skills (SDG-4)**. By applying knowledge from Mathematics, Computer Science, and management, individuals can contribute to solving complex problems and addressing global challenges. This interdisciplinary approach supports sustainable development by fostering innovative solutions, optimizing resource allocation, and promoting effective decision-making.

P02: Enhance a comprehensive understanding of theory and its application in diverse fields reflecting the **UN-SDG 2030 goal of quality education and lifelong learning (SDG-4)**. By enhancing their comprehensive understanding and application of theory, individuals can contribute to advancements in various fields and industries. This knowledge transfer and practical application support sustainable development by promoting innovation, fostering creativity, and addressing societal challenges through the application of knowledge.

P03: Prepare young professionals for a range of computer applications, networking, software engineering, web development, database management, and advanced Java which aligns with the **UN-SDG 2030 goal of promoting sustainable economic growth and industry innovation (SDG-1, SDG-8 & SDG-9)**. By preparing professionals in various computer applications and technologies, individuals contribute to the development of digital infrastructure, software solutions, and the digital economy. This knowledge and skill set support sustainable development by fostering innovation, creating job opportunities, and driving economic growth.

P04: Design computing systems to meet desired needs within realistic constraints and work in multidisciplinary teams with a positive attitude reflecting the **UN-SDG 2030 goal of promoting sustainable infrastructure and fostering collaboration (SDG-9 & SDG-17)**. By designing computing systems that meet desired needs while considering constraints such as safety, security, and applicability, individuals contribute to the development of sustainable and resilient technologies. Working in multidisciplinary teams promotes diverse perspectives, encourages cooperation, and supports the achievement of sustainable development goals.

P05: Communicate effectively which aligns with the **UN-SDG 2030 goal of promoting inclusive and effective communication (SDG-4)**. Effective communication is essential for collaboration, knowledge sharing, and addressing global challenges. By emphasizing effective communication skills, individuals can contribute to sustainable development by promoting understanding, fostering dialogue, and facilitating the exchange of ideas and information.

The Program Outcomes demonstrate the alignment between the educational objectives in Computer Science and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering sustainable development, technological innovation, interdisciplinary collaboration, effective communication, and addressing societal challenges through the application of Computer Science and technology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Fisheries

P01: Reference the conceptual understanding of fish diversity, fish breeding, and various culture technology which aligns with the value framework of **UN-SDG 2030 by promoting sustainable ecosystems and biodiversity (SDG-4 & SDG-14)**. By understanding fish diversity, breeding techniques, and culture technology, individuals contribute to the conservation and sustainable management of fish populations. This knowledge supports the UN-SDG goal of life below water by ensuring the preservation and responsible use of aquatic resources.

P02: Plan scientific research using different Fisheries resources, with a special reference to India reflects the **UN-SDG 2030 goal of promoting sustainable economic growth and industry innovation (SDG-1, SDG-2 &SDG-8)**. By planning scientific research on Fisheries resources, individuals contribute to the development of evidence-based management strategies and sustainable fishing practices. This knowledge supports responsible resource management, conservation, and the equitable use of Fisheries resources.

P03: Gain knowledge about fish feed nutrition technology and different integrated farming systems with fish farming which aligns with the **UN-SDG 2030 goal of promoting sustainable agriculture and food security (SDG-1, SDG-2 &SDG-14)**. By understanding fish feed nutrition technology and integrated farming systems, individuals contribute to sustainable aquaculture practices and efficient resource utilization. This knowledge supports responsible food production, reduces environmental impacts, and enhances food security.

P04: Acquire knowledge about fish marketing, Fisheries Economics, and extension methodologies in the Fisheries sector reflects the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-1 & SDG-8)**. By understanding fish marketing, Fisheries Economics, and extension methodologies, individuals contribute to the development of sustainable Fisheries value chains, market access, and economic opportunities. This knowledge supports the socio-economic development of communities reliant on Fisheries and promotes fair and inclusive economic growth.

P05: Improve skills to acquire academic, scientific, and industrial positions which aligns with the **UN-SDG 2030 goal of quality education and lifelong learning (SDG-4)**. By improving skills and acquiring academic, scientific, and industrial positions, individuals contribute to their personal development, career advancement, and the generation of knowledge and innovations. This supports sustainable development by fostering human capital, promoting innovation, and addressing societal challenges through specialized expertise.

The Program Outcomes demonstrate the alignment between the educational objectives in the field of Fisheries and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, fostering sustainable Fisheries management, responsible resource utilization, economic development, and addressing societal challenges in the Fisheries sector.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Forensic Science

P01: Identify and recognize the scientific facts and knowledge of natural or unnatural phenomena align with the **UN-SDG 2030 goal of quality education and lifelong learning (SDG-4)**. By identifying and recognizing scientific facts and knowledge, individuals contribute to their understanding of the natural and unnatural phenomena that surround them. This knowledge supports informed decision-making, critical thinking, and scientific literacy, which are crucial for addressing global challenges and promoting sustainable development.

P02: Relate theory and practical education to puzzle out problems of the society reflects the **UN-SDG 2030 goal of promoting sustainable and inclusive societies (SDG-11)**. By relating theory and practical education to problem-solving in society, individuals contribute to addressing societal challenges and finding sustainable solutions. This practical application of knowledge fosters innovation, social responsibility, and community engagement, leading to positive impacts on society.

P03: Develop and train successful professionals in different areas align with the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-1 & SDG-8)**. By developing and training successful professionals in different areas, individuals contribute to building a skilled workforce and promoting economic development. These professionals can apply their expertise to various sectors and contribute to sustainable practices, innovation, and the achievement of development goals.

P04: Employing knowledge to make people's surroundings healthy and secure reflects the **UN-SDG 2030 goal of promoting public health by providing scientific methods to investigate crimes, identify causes of injuries or deaths, and contribute to the administration of justice**. By employing scientific knowledge and techniques, forensic scientists help ensure access to justice, promote the rule of law, and strengthen institutions responsible for maintaining law and order. This fosters secure surroundings and contributes to peaceful and inclusive societies.

P05: Carry out internship programs and research projects to develop scientific skills and groundbreaking ideas which aligns with the **UN-SDG 2030 goal of quality education and fostering innovation (SDG-4 & SDG-11)**. By carrying out internship programs and research projects, individuals develop scientific skills, critical thinking, and innovation capacities. This hands-on experience supports the generation of new ideas, technologies, and solutions that address societal challenges and contribute to sustainable development.

P06: Face and succeed in high-level competitive examinations like NET, FACT, STATE PSC, UPSC reflects the **UN-SDG 2030 goal of promoting inclusive and equitable quality education (SDG-4 & SDG-11)**. By facing and succeeding in high-level competitive examinations, individuals enhance their educational and career opportunities, thereby

improving their socio-economic prospects. This achievement supports the goal of providing equal access to education and promoting merit-based opportunities for individuals.

The Program Outcomes demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, fostering scientific literacy, innovation, sustainable development, and addressing societal challenges through their knowledge, skills, and achievements.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Geology

P01: The program in Geology provides knowledge in the field of earth science to the students align with the **UN-SDG 2030 goal of quality education (SDG-4)**. By providing knowledge in the field of earth science, the program equips students with a solid foundation in understanding the Earth's processes, resources, and environmental interactions. This knowledge is essential for addressing global challenges related to climate change, natural hazards, and sustainable resource management.

P02: Develop an understanding of the fundamental laws in earth sciences and capability of developing ideas based on them reflects the **UN-SDG 2030 goal of promoting scientific literacy and innovation (SDG-4)**. By developing an understanding of the fundamental laws in earth sciences, students gain the ability to analyze complex geological phenomena and develop innovative ideas for addressing geological challenges. This critical thinking and problem-solving skills contribute to sustainable development and the advancement of scientific knowledge.

P03: Apply theoretical, conceptual, and observational knowledge to the analysis and interpretation of geological data which aligns with the **UN-SDG 2030 goal of promoting sustainable resource management and environmental conservation (SDG-13)**. By applying theoretical, conceptual, and observational knowledge, students can analyze and interpret geological data to understand the Earth's history, geological processes, and environmental changes. This understanding is crucial for making informed decisions and implementing sustainable practices in various sectors.

P04: Make use of geological data for environmental studies of the Earth reflects the **UN-SDG 2030 goal of environmental protection and sustainable development (SDG-13)**. By utilizing geological data for environmental studies, students contribute to assessing and mitigating environmental impacts, monitoring natural resources, and developing strategies for sustainable land use and conservation. This application of knowledge supports the goal of promoting sustainable and resilient ecosystems.

P05: Promote interest in the student to take up higher studies in the field of earth sciences which aligns with the **UN-SDG 2030 goal of promoting inclusive and equitable quality education (SDG-4 & SDG-10)**. By promoting interest in students to pursue higher studies in the field of earth sciences, the program encourages lifelong learning, specialized knowledge acquisition, and capacity building. This contributes to the development of a skilled workforce and promotes scientific research and innovation in addressing global challenges.

P06: Make students fully competent to undertake any job in the field of Geology reflects the **UN-SDG 2030 goal of promoting decent work and economic growth (SDG-8)**. By equipping students with the necessary skills and competencies, the program prepares them

for employment in various Geology-related professions. This includes roles in geological surveys, environmental consulting firms, natural resource management, and research institutions. By enabling students to contribute to the Geology field, this PO supports sustainable economic development and the achievement of development goals.

The Program Outcomes demonstrate the alignment between the educational objectives in Geology and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting scientific literacy, sustainable resource management, environmental conservation, and the advancement of Geology as a field.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Mathematics

P01: Develop need-based Mathematics teaching-learning resources which aligns with **the UN-SDG 2030 goal of quality education (SDG-4)**. By developing need-based Mathematics teaching-learning resources, educators can enhance the effectiveness of Mathematics education and promote equitable access to quality learning materials. These resources can support diverse learners, cater to different learning styles, and foster inclusive and engaging Mathematics instruction.

P02: Understand Mathematics education as an academic and research field and particularly discuss the nature of Mathematics with reference to pure and applied Mathematics reflects the **UN-SDG 2030 goal of promoting inclusive and equitable quality education (SDG-4 & SDG-10)**. By understanding Mathematics education as an academic and research field, students and educators can contribute to advancing the knowledge and pedagogy of Mathematics. This understanding promotes evidence-based teaching practices, curriculum development, and educational research that enhance the quality of Mathematics education for all learners.

P03: Define specific components of Mathematics such as axioms, postulates, paradoxes, mathematical statements, theorems, and proofs which aligns with the **UN-SDG 2030 goal of promoting critical thinking and problem-solving skills (SDG-4)**. By defining specific components of Mathematics, students develop a deep understanding of mathematical concepts and logical reasoning. This enables them to apply mathematical principles effectively, analyze problems, and construct valid arguments. These skills are essential for addressing complex challenges and promoting sustainable development.

P04: Discuss, analyze, and apply the history and development of the field of Mathematics for the betterment of mankind reflects the **UN-SDG 2030 goal of promoting sustainable and inclusive societies (SDG-11)**. By discussing, analyzing, and applying the history and development of Mathematics, students gain insights into the contributions of mathematical knowledge to human progress. They can explore how Mathematics has shaped various fields, including technology, engineering, Economics, and social sciences, and apply mathematical principles to address societal challenges and promote positive change.

P05: Choose and apply basic statistical techniques for various kinds of data collected under educational research which aligns with the **UN-SDG 2030 goal of promoting data-driven decision-making and evidence-based practices (SDG-4)**. By choosing and applying basic statistical techniques, students can analyze and interpret educational data to inform educational research and decision-making processes. This supports the goal of improving educational quality, identifying effective instructional strategies, and addressing educational disparities.

P06: Prepare students for pursuing research or a career in the industry in mathematical sciences and allied fields reflects the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-1 & SDG-8)**. By preparing students for research or careers in mathematical sciences and allied fields, the program equips them with the necessary skills and knowledge to contribute to scientific research, technological advancements, and innovation. This supports the development of a skilled workforce and promotes sustainable economic development.

These Program Outcomes demonstrate the alignment between the educational objectives in Mathematics and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering quality education, critical thinking, problem-solving, data-driven decision-making, sustainable development, and socio-economic progress.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Microbiology

P01: Understanding the basic and advanced concepts in Microbiology which aligns with the **UN-SDG 2030 goal of quality education (SDG-4)**. By understanding the basic and advanced concepts in Microbiology, students gain knowledge and comprehension of the fundamental principles and principles in this field. This understanding contributes to building a strong foundation in Microbiology and fosters scientific literacy, critical thinking, and problem-solving skills.

P02: Demonstrate and solve major concepts in all disciplines of Microbiology to reflect the **UN-SDG 2030 goal of promoting inclusive and equitable quality education (SDG-4)**. By demonstrating and solving major concepts in all disciplines of Microbiology, students showcase their competence in applying their knowledge to different areas within the field. This competency promotes interdisciplinary learning, a holistic understanding of Microbiology, and the ability to tackle complex challenges in various subfields.

P03: Solve problems and think methodically, and independently, and draw logical conclusions regarding environmental microbiological problems that align with **the UN-SDG 2030 goal of sustainable development (SDG-13)**. By solving problems and thinking methodically and independently about environmental microbiological problems, students develop critical thinking skills and problem-solving abilities. They can apply their knowledge of Microbiology to address environmental challenges, such as pollution, waste management, and ecosystem health, contributing to sustainable solutions and environmental stewardship.

P04: Apply skills and knowledge in designing and developing new techniques and experiments to deal with future medical Microbiology problems reflects the **UN-SDG 2030 goal of promoting health and well-being (SDG-3)**. By applying skills and knowledge in designing and developing new techniques and experiments for future medical Microbiology problems, students contribute to advancements in healthcare and medical research. They can contribute to the development of new diagnostic tools, treatments, and preventive measures to address infectious diseases and promote public health.

P05: Employ critical thinking and scientific knowledge to design, carry out, record, and analyze the results of microbe experiments align with the **UN-SDG 2030 goal of promoting quality education and fostering innovation (SDG-4)**. By employing critical thinking and scientific knowledge to design, carry out, record, and analyze microbe experiments, students develop research skills and scientific inquiry capabilities. They can contribute to advancements in microbiological knowledge, technological innovations, and the development of new therapies and biotechnological applications.

These Program Outcomes demonstrate the alignment between the educational objectives in Microbiology and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering

scientific literacy, critical thinking, problem-solving, sustainable development, health and well-being, and technological advancements in the field of Microbiology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Pharmaceutical Chemistry

P01: Understanding the basic and advanced concepts in pharmaceutical Chemistry which aligns with the **UN-SDG 2030 goal of quality education (SDG-4)**. By understanding the basic and advanced concepts in pharmaceutical Chemistry, students gain knowledge of the principles and theories underlying the design, synthesis, and analysis of drugs. This understanding enables them to contribute to the development of safe and effective medications and pharmaceutical products.

P02: Categorizing drugs based on chemical structure, therapeutic action, and natural sources reflects the **UN-SDG 2030 goal of good health and well-being (SDG-3)**. By categorizing drugs based on their chemical structure, therapeutic action, and natural sources, students develop a comprehensive understanding of pharmaceuticals. This knowledge contributes to rational drug design, the development of targeted therapies, and the utilization of natural resources in pharmaceutical development, leading to improved healthcare outcomes.

P03: Demonstrate the synthesis, mode of action, and structure-activity relationship (SAR) of drugs, as well as the preparation of dosage forms align with the **UN-SDG 2030 goal of good health and well-being (SDG-3)**. By demonstrating the synthesis, mode of action, and SAR of drugs, as well as the preparation of dosage forms, students acquire practical skills in pharmaceutical Chemistry. This knowledge and expertise contribute to the development of new drugs, the optimization of drug efficacy, and the formulation of safe and effective dosage forms for patient administration.

P04: Analyze drugs qualitatively and quantitatively using advanced analytical techniques such as HPLC, FTIR, UV spectroscopy in various drug formulations and as raw materials reflect the **UN-SDG 2030 goal of ensuring access to affordable, reliable, and sustainable medical support (SDG-3, SDG-10)**. By utilizing advanced analytical techniques to analyze drugs qualitatively and quantitatively, students contribute to the quality control and assurance of pharmaceutical products. This ensures the safety, efficacy, and uniformity of drug formulations, supporting the provision of affordable and reliable medications to individuals globally.

P05: Apply skills and knowledge in drug designing which aligns with the **UN-SDG 2030 goal of promoting innovation and sustainable industrialization (SDG-9)**. By applying their skills and knowledge in drug designing, students contribute to the discovery and development of new drugs. This includes the use of computational methods, molecular modeling, and structure-based drug design approaches, leading to the identification of novel therapeutic targets and the creation of more effective and targeted medications.

These Program Outcomes demonstrate the alignment between the educational objectives in pharmaceutical Chemistry and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global

goals, fostering advancements in healthcare, promoting access to affordable medications, ensuring drug quality and safety, and driving innovation in the pharmaceutical industry.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Physics

P01: Understanding the basic and advanced concepts in Physics which aligns with the **UN-SDG 2030 goal of quality education (SDG-4)**. By understanding the basic and advanced concepts in physics, students gain knowledge of the fundamental principles that govern the behavior of matter and energy in the universe. This understanding contributes to scientific literacy and enables individuals to apply physics principles to various real-world challenges and innovations.

P02: Demonstrate and solve major concepts in all disciplines of Physics reflect the **UN-SDG 2030 goal of promoting scientific research, technological innovation, and industrialization (SDG-9)**. By demonstrating and solving major concepts in all disciplines of physics, students develop problem-solving skills and apply theoretical knowledge to practical situations. This ability to solve physics problems contributes to advancements in various fields, such as engineering, energy, materials science, and environmental science.

P03: Solve problems methodically, independently, and draw logical conclusions which aligns with the **UN-SDG 2030 goal of promoting critical thinking and problem-solving skills (SDG-4)**. By solving physics problems methodically, independently, and drawing logical conclusions, students develop analytical and critical thinking skills. These skills are essential for addressing complex challenges, making informed decisions, and contributing to sustainable development in various domains, including technology, energy, and environmental sustainability.

P04: Apply skills and knowledge in the design and development of electronic circuits reflects the **UN-SDG 2030 goal of promoting sustainable industrialization and fostering innovation (SDG-9)**. By applying their skills and knowledge in the design and development of electronic circuits, students contribute to technological advancements in areas such as telecommunications, information technology, renewable energy systems, and automation. These contributions support the development of sustainable technologies and drive economic growth.

P05: Employ critical thinking and scientific knowledge to design, carry out, record, and analyze the results of physics experiments align with the **UN-SDG 2030 goal of quality education and promoting scientific research (SDG-4)**. By employing critical thinking and scientific knowledge to design, carry out, record, and analyze the results of physics experiments, students develop practical and experimental skills. This hands-on experience fosters scientific inquiry, data analysis, and the development of scientific methodologies, leading to new discoveries, technological advancements, and the advancement of knowledge.

These Program Outcomes demonstrate the alignment between the educational objectives in physics and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, fostering scientific

literacy, critical thinking, problem-solving skills, technological innovation, and advancements in various fields that promote sustainable development.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Statistics

P01: The aim of training students in the development and application of statistical techniques which aligns with the **UN-SDG 2030 goal of promoting quality education and lifelong learning (SDG-4)**. By equipping students with statistical skills and knowledge, they contribute to evidence-based decision-making and problem-solving across various disciplines. This supports the development and advancement of sustainable practices and policies.

P02: The present course is intended to provide a platform for students to undergo higher studies in the subject as well as to train them to suit the needs of the society reflects the **UN-SDG 2030 goal of promoting sustainable and inclusive societies (SDG-11)**. By providing a platform for higher studies in Statistics and addressing the needs of society, students can contribute to addressing societal challenges, fostering innovation, and promoting social and economic development.

P03: The competence to pursue research or a career in Statistics which aligns with the **UN-SDG 2030 goal of promoting scientific research, technological innovation, and industrialization (SDG-9)**. By developing research skills and expertise in Statistics, students can contribute to advancements in various fields, including healthcare, finance, manufacturing, and marketing, thereby promoting sustainable economic growth.

P04: The mastery of the subject and the ability to apply statistical knowledge in professional, social, and personal life align with the **UN-SDG 2030 goal of promoting lifelong learning and skills development (SDG-4)**. By applying statistical knowledge in various contexts, students can make informed decisions, solve problems, and contribute to sustainable development in their personal and professional lives.

P05: The training in handling real-life problems, programming languages, and statistical software which aligns with the **UN-SDG 2030 goal of promoting digital literacy and innovation (SDG-4)**. By equipping students with practical skills and technical proficiency, they can effectively analyze data, make evidence-based decisions, and contribute to advancements in sectors such as healthcare, finance, retail, manufacturing, and marketing.

P06: The knowledge of statistical theory and programming languages for modeling real-life data which aligns with the **UN-SDG 2030 goal of promoting scientific literacy and innovation (SDG-4)**. By understanding statistical theory and using multiple programming languages, students can contribute to the development and application of statistical models that address real-life challenges, support evidence-based decision-making, and promote sustainable development.

P07: The expertise in statistical techniques for careers as a statistician or data scientist which aligns with the **UN-SDG 2030 goal of promoting decent work and economic growth (SDG-8)**. By acquiring expertise in statistical techniques and data

analysis, students can pursue careers that contribute to data-driven decision-making, innovation, and the development of sustainable solutions in various sectors.

P08: The understanding and critical application of statistical methods to solve problems in different sectors, such as pharmaceuticals, banking, retail, manufacturing, and marketing, align with the **UN-SDG 2030 goal of promoting sustainable development across industries (SDG-9)**. By applying statistical methods, students can contribute to improving processes, optimizing resource allocation, and making data-driven decisions that promote sustainability and economic growth.

These Program Outcomes demonstrate the alignment between the educational objectives in Statistics and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, fostering data-driven decision-making, innovation, sustainable development, and addressing societal challenges through their statistical expertise and skills.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Master of Science in Zoology

P01: Understanding the basic and advanced concepts of Zoology which aligns with the **UN-SDG 2030 goal of promoting quality education and lifelong learning (SDG-4)**. By acquiring knowledge in Zoology, individuals contribute to their understanding of the animal kingdom, its diversity, and its ecological significance. This knowledge supports conservation efforts, biodiversity management, and sustainable development.

P02: Learn the biological diversity and grades of the complexity of various animal forms through their systematic classification and comparative studies align with the **UN-SDG 2030 goal of protecting, restoring, and promoting sustainable use of terrestrial ecosystems (SDG-13, SDG-15)**. By studying animal forms and their classification, individuals develop an appreciation for biodiversity and the importance of conserving ecosystems to maintain ecological balance and promote sustainable practices.

P03: Developing skills in analytical and critical thinking through the concept of Biostatistics which aligns with the **UN-SDG 2030 goal of promoting scientific research, technological innovation, and industrialization (SDG-4, SDG-9)**. By applying Biostatistics, individuals can analyze and interpret data, conduct scientific studies, and contribute to evidence-based decision-making in various fields, including ecology, wildlife conservation, and public health.

P04: Motivating learners about new developments in cell and molecular biology and their implications in human welfare which aligns with the **UN-SDG 2030 goal of promoting good health and well-being (SDG-3)**. By understanding the advancements in cell and molecular biology, individuals can contribute to advancements in medical research, disease prevention, and the development of innovative healthcare solutions.

P05: Employing critical thinking and scientific knowledge to understand aquaculture, limnology, and immunology in various fields which aligns with the **UN-SDG 2030 goal of promoting sustainable agriculture, clean water, and good health and well-being (SDG-3, SDG-6, SDG-15)**. By applying critical thinking and scientific knowledge, individuals can contribute to sustainable aquaculture practices, the conservation of freshwater ecosystems, and the development of immunological interventions for human and animal health.

These Program Outcomes in Zoology demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, fostering scientific literacy, innovation, and sustainable development, and addressing societal challenges through their knowledge, skills, and research in Zoology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Biochemistry Major)

P01: The demonstration of knowledge and understanding of fundamental concepts and principles of Biochemistry which aligns with the **UN-SDG 2030 goal of quality education and lifelong learning (SDG-4)**. By acquiring this knowledge, individuals contribute to their scientific literacy and understanding of Biochemistry's role in various disciplines, including human health, agriculture, and environmental sustainability.

P02: The application of laboratory techniques and experimental methods to purify, analyze, and manipulate biological molecules which aligns with **the UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-8)**. By developing these practical skills, individuals contribute to scientific research, Biotechnology, and healthcare industries, fostering innovation and contributing to economic development.

P03: The ability to analyze and interpret experimental data using quantitative and statistical methods, as well as utilizing Bioinformatics tools to predict and model biochemical processes which aligns with the **UN-SDG 2030 goal of promoting sustainable development through scientific research and innovation (SDG-4)**. By employing these skills, individuals can contribute to understanding complex biological systems, identifying patterns, and making informed decisions for sustainable practices.

P04: Evaluate and critically assess the impact of biochemical processes on human health and disease, and propose solutions to diagnose and treat biochemical disorders align with **the UN-SDG 2030 goal of promoting good health and well-being (SDG-3)**. By addressing biochemical disorders and advancing healthcare solutions, individuals contribute to improving the quality of life and achieving the health-related goals of the UN-SDG.

P05: Synthesize and communicate complex ideas and concepts related to Biochemistry, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences align with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-17)**. By effectively communicating scientific knowledge, individuals can engage with policymakers, healthcare professionals, and the general public, fostering understanding, collaboration, and informed decision-making.

These Program Outcomes in Biochemistry demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting quality education, sustainable development, health and well-being, innovation, and effective communication in the field of Biochemistry.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Botany Major)

P01: The demonstration of knowledge and understanding of the principles of Botany, including plant structure, function, and diversity, as well as the mechanisms of plant growth and development which aligns with the **UN-SDG 2030 goal of quality education and lifelong learning (SDG-4)**. By acquiring this knowledge, individuals contribute to their scientific literacy and understanding of plant biology's role in various disciplines, including agriculture, conservation, and sustainable development.

P02: Analyze and interpret complex data and scientific literature to develop hypotheses, design experiments, and draw conclusions related to Plant Biology which aligns with the **UN-SDG 2030 goal of promoting sustainable development through scientific research and innovation (SDG-9)**. By applying these skills, individuals can contribute to understanding plant processes, addressing research questions, and developing sustainable practices for agriculture, forestry, and environmental conservation.

P03: Evaluate and critically assess the impacts of human activities on plant communities, ecosystems, and global environmental systems align with the **UN-SDG 2030 goal of promoting sustainable ecosystems and combating climate change (SDG-13, SDG-15)**. By assessing these impacts, individuals can contribute to the development of conservation strategies, ecosystem restoration, and sustainable land use practices that support biodiversity conservation and mitigate climate change.

P04: Apply laboratory and field techniques to collect and analyze plant data, and use quantitative methods to interpret and communicate findings align with the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-8)**. By developing these practical skills, individuals can contribute to scientific research, agriculture, environmental consulting, and conservation organizations, fostering innovation and contributing to economic development.

P05: Synthesize and communicate complex concepts and ideas related to plant biology, using effective written and oral communication skills to convey scientific information to a variety of audiences which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-17)**. By effectively communicating scientific knowledge, individuals can engage with policymakers, educators, and the general public, fostering understanding, collaboration, and informed decision-making for sustainable plant-related initiatives.

These Program Outcomes in Botany demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting quality education, sustainable development, environmental conservation, innovation, and effective communication in the field of Botany.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Biotechnology Major)

P01: Demonstrate knowledge and understanding of the principles of Biotechnology, including genetic engineering, bioprocessing, and Bioinformatics, as well as the applications of Biotechnology in medicine, agriculture, and industry which aligns with the **UN-SDG 2030 goal of promoting sustainable development through scientific research and innovation (SDG-9)**. By acquiring this knowledge, individuals can contribute to advancements in healthcare, food security, and environmental sustainability.

P02: Apply laboratory techniques and experimental methods to design and conduct experiments in Biotechnology, including DNA cloning, protein expression, and cell culture which aligns with the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-8)**. By developing these practical skills, individuals can contribute to scientific research, Biotechnology companies, and industries, fostering innovation and contributing to economic development.

P03: Analyze and interpret complex biological data, using statistical methods and computational tools to identify patterns, make predictions, and draw conclusions related to Biotechnology which aligns with the **UN-SDG 2030 goal of promoting sustainable development through data-driven decision-making (SDG-3, SDG-15)**. By applying these skills, individuals can contribute to Bioinformatics, personalized medicine, and precision agriculture, enhancing efficiency and sustainability.

P04: Evaluate and critically assess the ethical, social, and environmental impacts of Biotechnology, and propose strategies to ensure responsible and sustainable use of Biotechnology, align with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12)**. By considering the broader implications of biotechnological applications, individuals can contribute to ethical practices, environmental stewardship, and equitable access to biotechnological advancements.

P05: Synthesize and communicate complex ideas and concepts related to Biotechnology, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-17)**. By effectively communicating scientific knowledge, individuals can engage with policymakers, educators, and the general public, fostering understanding, collaboration, and informed decision-making for responsible biotechnological applications.

These Program Outcomes in Biotechnology demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting sustainable development, economic growth, ethical practices, responsible consumption, and effective communication in the field of Biotechnology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Bioinformatics Major)

P01: Demonstrate knowledge and understanding of the principles of Bioinformatics, including molecular biology, Computer Science, and Statistics, as well as the applications of Bioinformatics in genomics, proteomics, and drug discovery, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through scientific research and innovation (SDG-3, SDG-4).** By acquiring this knowledge, individuals can contribute to advancements in healthcare, personalized medicine, and drug development, ultimately improving global health outcomes.

P02: Apply computational methods and software tools to analyze biological data, including DNA sequences, protein structures, and gene expression profiles, and use visualization techniques to interpret and communicate findings, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through data-driven decision-making (SDG-3).** By leveraging computational approaches, individuals can contribute to advancements in genomics, proteomics, and precision medicine, facilitating targeted interventions and improving resource allocation.

P03: Evaluate and critically assess the quality and validity of biological data and computational models, and propose strategies to improve data quality and model accuracy, align with the **UN-SDG 2030 goal of promoting sustainable development through evidence-based decision-making (SDG-9).** By ensuring the reliability and accuracy of Bioinformatics analyses, individuals can contribute to robust scientific discoveries, policy recommendations, and informed decision-making processes.

P04: Design and implement Bioinformatics workflows and pipelines to manage and analyze large-scale biological datasets, and use automation techniques to increase efficiency and reproducibility, align with the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work for all (SDG-8).** By developing these skills, individuals can contribute to Bioinformatics research, pharmaceutical industries, and healthcare institutions, fostering innovation, productivity, and economic development.

P05: Synthesize and communicate complex ideas and concepts related to Bioinformatics, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-17).** By effectively communicating Bioinformatics knowledge, individuals can engage with policymakers, healthcare professionals, and the general public, fostering understanding, collaboration, and informed decision-making for the responsible application of Bioinformatics in various sectors.

These Program Outcomes in Bioinformatics demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By

focusing on these POs, individuals can actively contribute to global goals, promoting sustainable development, evidence-based decision-making, economic growth, effective communication, and partnership building in the field of Bioinformatics.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Chemistry Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of Chemistry, including chemical reactions, thermodynamics, chemical bonding, and atomic and molecular structure, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through scientific research and innovation (SDG-4, SDG-7, SDG-9).** By acquiring this knowledge, individuals can contribute to advancements in materials science, energy production, and environmental conservation.

P02: Apply laboratory techniques and instrumentation to perform chemical experiments and analyze data, and use appropriate software to process and interpret chemical data, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through data-driven decision-making (SDG-4, SDG-9).** By employing these skills, individuals can contribute to the development of efficient chemical processes, environmental monitoring, and quality control in industries.

P03: Analyze and interpret chemical data to make inferences about chemical properties and reactions, and use quantitative and qualitative methods to test hypotheses and theories about chemical phenomena, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through evidence-based decision-making (SDG-4).** By applying these methods, individuals can contribute to the understanding of chemical processes, the development of new materials, and the optimization of chemical reactions.

P04: Evaluate and critically assess the environmental, societal, and ethical implications of chemical processes, including pollution, toxicology, and sustainability, and propose solutions to address these issues, which aligns with the **UN-SDG 2030 goal of promoting sustainable development and responsible consumption (SDG-12, SDG-13).** By considering these aspects, individuals can contribute to the development of sustainable and environmentally friendly practices in industries and communities.

P05: Synthesize and communicate complex ideas and concepts related to Chemistry, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-17).** By effectively communicating scientific knowledge, individuals can engage with policymakers, educate the public on chemical safety, and promote responsible and informed decision-making.

These Program Outcomes in Chemistry demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting sustainable development, evidence-based decision-making, responsible

consumption, effective communication, and partnership building in the field of Chemistry.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Computer Science Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of Computer Science, including programming languages, algorithms, data structures, computer architecture, and operating systems, align with the **UN-SDG 2030 goal of promoting sustainable development through technological innovation (SDG-9)**.

By acquiring this knowledge, individuals can contribute to advancements in information technology, data management, and automation, leading to more efficient systems and processes.

P02: Apply programming and software development skills to design, implement, test, and maintain computer programs and systems, using appropriate software development methodologies and tools, align with the **UN-SDG 2030 goal of promoting sustainable development through digital transformation (SDG-11)**.

By employing these skills, individuals can contribute to the development of software solutions that address societal challenges, improve efficiency, and enhance user experiences.

P03: Analyze and interpret complex data and computational models, and use computational methods to solve problems in a variety of domains, including artificial intelligence, machine learning, and data science, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through data-driven decision-making (SDG-4)**.

By applying these methods, individuals can contribute to the development of intelligent systems, data-driven solutions, and predictive models that address real-world challenges.

P04: Evaluate and critically assess the ethical and social implications of Computer Science, including privacy, security, and social responsibility, and propose solutions to address these issues, align with **the UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12)**.

By considering these aspects, individuals can contribute to the development of secure and privacy-aware systems, ethical algorithms, and technology that respects human rights.

P05: Synthesize and communicate complex ideas and concepts related to Computer Science, using effective written and oral communication skills to convey technical information to a variety of audiences, including non-technical audiences, which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-17)**.

By effectively communicating technical knowledge, individuals can engage with stakeholders, promote digital literacy, and bridge the gap between technical and non-technical communities.

These Program Outcomes in Computer Science demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting

technological innovation, data-driven decision-making, responsible consumption, effective communication, and partnership building in the field of Computer Science.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Electronics Major)

P01: Design and implement electronic circuits for real-world applications using advanced software tools and techniques, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through technological innovation (SDG-9, SDG-11)**. By acquiring these skills, individuals can contribute to the development of efficient and reliable electronic systems that address societal needs and improve quality of life.

P02: Analyze and evaluate the performance of electronic systems through experimental and theoretical investigations align with the **UN-SDG 2030 goal of promoting sustainable development through evidence-based decision-making (SDG-4, SDG-7, SDG-9)**. By conducting these evaluations, individuals can contribute to the development of energy-efficient systems, improved functionality, and optimized resource utilization.

P03: Communicate technical information effectively to both technical and non-technical audiences, using appropriate tools and media, which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-9, SDG-11)**. By effectively conveying technical knowledge, individuals can engage stakeholders, bridge the gap between technical and non-technical communities, and promote the adoption of electronic technologies for sustainable development.

P04: Apply knowledge of ethical and professional standards to engineering practice, and appreciate the social and environmental impacts of electronic technologies, which aligns with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12, SDG-15)**. By considering these aspects, individuals can contribute to the development of environmentally friendly and socially responsible electronic technologies, promoting sustainable practices and minimizing negative impacts.

P05: Develop a lifelong learning attitude and engage in professional development activities to keep pace with emerging technology, which aligns with the **UN-SDG 2030 goal of promoting lifelong learning and skills development (SDG-4)**. By continuously updating their knowledge and skills, individuals can adapt to technological advancements, contribute to innovation, and address evolving challenges in the field of Electronics.

These Program Outcomes in electronic engineering demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting technological innovation, evidence-based decision-making, effective communication, responsible consumption, lifelong learning, and skills development in the field of electronics.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Economics Major)

P01: Demonstrate understanding of economic theories, concepts, and models, align with the **UN-SDG 2030 goal of promoting sustainable economic growth and development (SDG 8)**. By acquiring knowledge in Economics, individuals can contribute to informed decision-making, policy formulation, and the efficient allocation of resources to achieve sustainable development.

P02: Analyze economic issues using quantitative and qualitative research methods, which aligns with the **UN-SDG 2030 goal of promoting evidence-based decision-making (SDG-8)**. By employing rigorous research methods, individuals can contribute to understanding complex economic challenges, evaluating the effectiveness of interventions, and identifying strategies for inclusive and sustainable economic development.

P03: Evaluate economic policies and their impact on individuals, businesses, and society, which aligns with the **UN-SDG 2030 goal of promoting sustainable and inclusive economic growth (SDG-1, SDG-8, SDG-10, SDG-11)**. By assessing policy measures, individuals can contribute to identifying and implementing policies that foster social equity, reduce inequalities, and promote sustainable development.

P04: Communicate economic ideas and analysis effectively to diverse audiences, both orally and in writing, which aligns with the **UN-SDG 2030 goal of promoting effective communication and building partnerships (SDG-8, SDG-17)**. By effectively conveying economic information, individuals can contribute to informed public discourse, engage stakeholders, and facilitate collaborative efforts towards achieving sustainable economic development.

P05: Apply ethical principles and professional standards to guide decision-making in Economics and related fields, which aligns with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-1, SDG-2, SDG-12)**. By considering ethical considerations, individuals can contribute to sustainable economic practices, minimize negative impacts, and promote equitable and inclusive economic development.

These Program Outcomes in Economics demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting sustainable economic growth, evidence-based decision-making, effective communication, responsible consumption, and ethical practices in the field of Economics.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Pogramme Name: B.Sc. (Forensic Science Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of Forensic Science, including crime scene investigation, evidence collection and preservation, and forensic laboratory analysis, which aligns with the **UN-SDG 2030 goal of promoting peace, justice, and strong institutions (SDG-11, SDG-16).** By equipping individuals with the necessary knowledge in Forensic Science, it supports the development of a robust justice system, ensuring fair and effective investigation, and resolution of crimes.

P02: Apply laboratory techniques and experimental methods to analyze and identify physical and biological evidence, including DNA, fingerprints, and trace materials, which aligns with the **UN-SDG 2030 goal of promoting effective and accountable institutions (SDG- 16).** By using scientific methods and technologies, individuals can contribute to accurate and reliable forensic analysis, ensuring the integrity of the criminal justice system and facilitating fair legal proceedings.

P03: Analyze and interpret complex data and scientific literature to develop hypotheses, design experiments, and draw conclusions related to Forensic Science, including statistical methods for evaluating evidence, which aligns with the **UN-SDG 2030 goal of promoting evidence-based decision-making (SDG-4, SDG-16).** By applying rigorous scientific methods, individuals can contribute to the advancement of Forensic Science, improving the accuracy and reliability of forensic analysis, and enhancing the overall effectiveness of criminal investigations.

P04: Evaluate and critically assess the validity and reliability of forensic evidence, and propose strategies to improve the accuracy and reliability of forensic analysis, which aligns with the **UN-SDG 2030 goal of promoting access to justice and building effective, accountable, and inclusive institutions (SDG-16).** By critically examining forensic evidence, individuals can contribute to ensuring the fairness and reliability of legal proceedings, **safeguarding the rights of individuals, and strengthening the rule of law.**

P05: Synthesize and communicate complex ideas and concepts related to Forensic Science, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of promoting public awareness and understanding (SDG-10, SDG-11).** By effectively communicating scientific information, individuals can contribute to raising public awareness about Forensic Science, promoting informed discussions, and fostering trust and confidence in the criminal justice system.

These Program Outcomes in Forensic Science demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting peace, justice, accountability, evidence-based decision-making, access to justice, and public awareness in the field of Forensic Science.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Geology Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of Geology, including the structure and composition of the Earth, plate tectonics, rock and mineral identification, and geological time scales, which aligns with the **UN-SDG 2030 goal of promoting sustainable development (SDG-11, SDG-13).** By understanding the Earth's structure, geological processes, and geological time scales, individuals can contribute to informed decision-making regarding the sustainable use of Earth's resources and the mitigation of environmental impacts.

P02: Apply field and laboratory methods to study geological phenomena, including mapping, sampling, and analysis of rocks, minerals, and geological structures, and use appropriate technology and software to process and interpret geological data, which aligns with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12).** By employing scientific methods and technologies, individuals can contribute to sustainable resource management, ensuring the efficient and responsible extraction of geological resources.

P03: Analyze and interpret geological data to make inferences about geological processes and history, and use quantitative and qualitative methods to test hypotheses and theories about geological phenomena, which aligns with the **UN-SDG 2030 goal of promoting evidence-based decision-making (SDG-11, SDG-13).** By utilizing quantitative and qualitative methods, individuals can contribute to the understanding of geological phenomena, improving the accuracy of geological models and predictions, and facilitating informed decision-making in areas such as natural hazard assessment and resource management.

P04: Evaluate and critically assess the environmental and societal impacts of geological processes, including natural hazards, resource extraction, and climate change, and propose strategies to mitigate or adapt to these impacts which aligns with the **UN-SDG 2030 goal of protecting the environment (SDG-13).** By assessing the impacts of geological processes, individuals can contribute to the development of strategies for mitigating or adapting to environmental changes, addressing natural hazards, and promoting resilience in the face of climate change.

P05: Synthesize and communicate complex ideas and concepts related to Geology, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of promoting public awareness and understanding (SDG-11).** By effectively communicating scientific information to diverse audiences, including non-scientific audiences, individuals can contribute to raising public awareness about the Earth's

geological processes, fostering informed discussions, and inspiring action towards sustainable practices and environmental stewardship.

These Program Outcomes in Geology demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting sustainable development, responsible consumption and production, evidence-based decision-making, environmental protection, and public awareness in the field of Geology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Geography Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of Geography, including physical and human Geography, spatial analysis, and cartography, which aligns with the **UN-SDG 2030 goal of promoting sustainable cities and communities (SDG-11)**. By understanding physical and human Geography, spatial analysis, and cartography, individuals can contribute to urban planning, resource management, and the development of sustainable communities.

P02: Apply field and laboratory methods to study geographical phenomena, including remote sensing, GIS, and statistical analysis, and use appropriate technology and software to process and interpret geographical data, which aligns with **the UN-SDG 2030 goal of promoting sustainable development through data-driven decision-making (SDG-4, SDG-11)**. By utilizing technology and software to process and interpret geographical data, individuals can contribute to evidence-based planning, resource allocation, and policy development.

P03: Analyze and interpret geographical data to make inferences about spatial patterns and relationships, and use quantitative and qualitative methods to test hypotheses and theories about geographical phenomena, which aligns with the **UN-SDG 2030 goal of promoting sustainable development through informed decision-making (SDG-4, SDG-11, SDG-13)**. By employing quantitative and qualitative methods, individuals can contribute to understanding the complex interactions between physical and human systems, and support sustainable development initiatives that consider environmental, social, and economic factors.

P04: Evaluate and critically assess the environmental and societal impacts of geographical processes, including climate change, land use change, and natural hazards, and propose strategies to mitigate or adapt to these impacts, which aligns with the **UN-SDG 2030 goal of protecting the environment (SDG-13)**. By assessing the impacts of geographical processes, including climate change, land use change, and natural hazards, individuals can contribute to the development of strategies for mitigating or adapting to these impacts, promoting resilience, and fostering sustainable practices.

P05: Synthesize and communicate complex ideas and concepts related to Geography, using effective written and oral communication skills to convey geographical information to a variety of audiences, including non-geographical audiences, which aligns with the UN-SDG 2030 goal of promoting public awareness and understanding (SDG-11). By effectively communicating geographical information to diverse audiences, including non-geographical audiences, individuals can contribute to raising public

awareness about the importance of sustainable development, environmental stewardship, and spatial planning.

These Program Outcomes in Geography demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting sustainable cities and communities, data-driven decision-making, environmental protection, and public awareness in the field of Geography.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Horticulture Major)

P01: Demonstrate knowledge of plant biology, horticultural crops, and their management practices which aligns with the **UN-SDG 2030 goal of promoting sustainable agriculture (SDG-1, SDG-2, SDG-13)**. By understanding plant biology and the management practices for horticultural crops, individuals can contribute to sustainable food production, biodiversity conservation, and ecosystem health.

P02: Apply practical techniques for propagating, growing, and maintaining horticultural crops, which aligns with the **UN-SDG 2030 goal of promoting sustainable food systems (SDG-1, SDG-2, SDG-13)**. By applying effective techniques, individuals can contribute to increasing crop yields, reducing waste, and improving the efficiency of resource use, thereby promoting sustainable and resilient agricultural practices.

P03: Evaluate the economic and environmental sustainability of horticultural production systems, which aligns with the **UN-SDG 2030 goal of promoting sustainable economic growth and responsible consumption (SDG-12)**. By considering the economic viability and environmental impact of horticultural practices, individuals can contribute to the development of sustainable production systems and help address issues such as food security, climate change, and resource depletion.

P04: Communicate effectively with stakeholders in the horticultural industry, including growers, marketers, and consumers, which aligns with the **UN-SDG 2030 goal of promoting partnerships for sustainable development (SDG-17)**. By engaging and collaborating with stakeholders, individuals can foster knowledge exchange, encourage sustainable practices, and ensure that the needs and perspectives of different actors in the horticultural industry are considered.

P05: Apply ethical principles and professional standards to guide decision-making in Horticulture and related fields, align with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12)**. By considering ethical and sustainability considerations, individuals can contribute to making informed decisions that prioritize environmental, social, and economic well-being in horticultural practices.

These Program Outcomes in Horticulture demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting sustainable agriculture, responsible consumption and production, and partnerships for sustainable development in the field of Horticulture.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Industrial Fish and Fisheries Major)

P01: Demonstrate knowledge of the biological and ecological principles underlying Fisheries Science, which aligns with the **UN-SDG 2030 goal of promoting sustainable use of marine resources (SDG-14)**. By understanding the biological and ecological aspects of fish populations and ecosystems, individuals can contribute to sustainable Fisheries management, conservation, and biodiversity protection.

P02: Apply quantitative and qualitative research methods to address problems in Fisheries management and conservation, which aligns with the **UN-SDG 2030 goal of promoting sustainable economic growth and responsible consumption (SDG-12)**. By using research methods, individuals can contribute to evidence-based decision-making, improve Fisheries management practices, and ensure the long-term sustainability of fish populations and ecosystems.

P03: Evaluate the impacts of human activities on fish populations and ecosystems, and propose strategies for sustainable resource use, which aligns with the **UN-SDG 2030 goal of promoting sustainable oceans and marine resources (SDG-13, SDG-14)**. By assessing the environmental and socio-economic impacts of Fisheries, individuals can contribute to the development and implementation of sustainable fishing practices, conservation measures, and marine ecosystem protection.

P04: Communicate scientific findings and policy recommendations effectively to diverse audiences, including policymakers, industry stakeholders, and the general public, align with the **UN-SDG 2030 goal of promoting partnerships for sustainable development (SDG-17)**. By effectively communicating with policymakers, industry stakeholders, and the general public, individuals can raise awareness, influence decision-making, and foster collaboration to address Fisheries-related challenges and achieve sustainable Fisheries management.

P05: Apply ethical principles and professional standards to guide decision-making in Fisheries science and management, align with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12)**. By considering ethical considerations and incorporating sustainability principles, individuals can contribute to making informed and responsible decisions that prioritize the long-term health and resilience of fish populations, ecosystems, and the livelihoods of fishing communities.

These Program Outcomes in Fisheries science demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting sustainable use of marine resources, responsible consumption and production, and partnerships for sustainable development in the field of Fisheries Science and Management.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Microbiology Major)

P01: Demonstrate understanding of the principles of Microbiology, including microbial diversity, physiology, and genetics, which aligns with the **UN-SDG 2030 goal of promoting good health and well-being (SDG-3)**. By understanding the fundamental aspects of microorganisms, individuals can contribute to advancements in healthcare, disease prevention, and the development of sustainable agricultural and environmental practices.

P02: Apply laboratory techniques to culture, identify, and study microorganisms, which aligns with the **UN-SDG 2030 goal of ensuring sustainable food production and responsible consumption (SDG-3, SDG-6, SDG-12, SDG-13)**. By utilizing laboratory techniques, individuals can contribute to the development of safe and efficient methods for food production, environmental monitoring, and the control of infectious diseases.

P03: Evaluate the impact of microorganisms on human health, the environment, and industry, which aligns with several **UN-SDG 2030 goals, including good health and well-being, sustainable cities and communities, and responsible consumption and production (SDG-3, SDG-6, SDG-12, SDG-13)**. By assessing the effects of microorganisms, individuals can contribute to the development of sustainable practices in healthcare, waste management, and industrial processes.

P04: Communicate scientific findings and recommendations effectively to diverse audiences, which aligns with the **UN-SDG 2030 goal of promoting partnerships for sustainable development (SDG-17)**. By effectively communicating with policymakers, healthcare professionals, and the public, individuals can raise awareness, educate, and advocate for evidence-based decisions and practices related to Microbiology.

P05: Apply ethical principles and professional standards to guide decision-making in Microbiology research and practice, which aligns with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12)**. By considering ethical considerations, individuals can ensure that their research and practices prioritize the well-being of individuals, communities, and the environment.

These Program Outcomes in Microbiology demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting good health and well-being, sustainable production and consumption, responsible research and practice, and partnerships for sustainable development in the field of Microbiology.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Mathematics Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of Mathematics, including calculus, linear algebra, and abstract algebra, as well as the applications of Mathematics in other fields, contribute to the **UN-SDG 2030 goal of quality education (SDG-4)**. Mathematics provides a foundation for various scientific, technological, and economic advancements, and individuals equipped with mathematical knowledge can contribute to innovation, problem-solving, and sustainable development.

P02: Apply mathematical reasoning and problem-solving skills to analyze and solve mathematical problems, including theoretical and applied problems in algebra, geometry, analysis, and Statistics, which aligns with the **UN-SDG 2030 goal of promoting critical thinking and problem-solving (SDG-4, SDG-9, SDG-11)**. Mathematical skills are essential for addressing complex challenges in various domains, such as engineering, Economics, and environmental sciences, and contribute to finding sustainable solutions.

P03: Analyze and interpret mathematical data and models, including graphs, tables, and equations, to draw conclusions and make predictions about real-world phenomena, which aligns with the **UN-SDG 2030 goal of sustainable cities and communities (SDG-11)**. By utilizing mathematical techniques, individuals can analyze urban data, plan resource allocation, optimize transportation systems, and contribute to the development of sustainable urban environments.

P04: Evaluate and critically assess mathematical arguments and proofs, and propose counterexamples or alternative approaches to solve problems, which aligns with the **UN-SDG 2030 goal of fostering innovation (SDG-4)**. By challenging existing mathematical theories and exploring alternative solutions, individuals can contribute to advancements in various fields, leading to innovative and sustainable practices.

P05: Synthesize and communicate complex ideas and concepts related to Mathematics, using effective written and oral communication skills to convey mathematical information to a variety of audiences, including non-mathematical audiences, which aligns with the **UN-SDG 2030 goal of promoting effective communication and partnerships (SDG-17)**. By effectively communicating mathematical concepts, individuals can bridge the gap between mathematical expertise and non-mathematical audiences, promoting collaboration, understanding, and interdisciplinary approaches to address global challenges.

These Program Outcomes in Mathematics demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By

focusing on these POs, individuals can actively contribute to the global goals, promoting quality education, critical thinking, sustainable cities and communities, innovation, effective communication, and partnerships for sustainable development.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Pharmaceutical Chemistry Major)

P01: Demonstrate knowledge and understanding of the fundamental principles and concepts of pharmaceutical Chemistry, including drug design, synthesis, and evaluation, as well as pharmacokinetics and pharmacodynamics, contributing to the **UN-SDG 2030 goal of good health and well-being (SDG-4)**. Through the study of pharmaceutical Chemistry, individuals can contribute to the development of safe and effective medications, improving access to quality healthcare and promoting well-being globally.

P02: Apply laboratory techniques and experimental methods to synthesize, purify, and characterize novel drug compounds, and use analytical methods to determine their physicochemical and biological properties, which aligns with the **UN-SDG 2030 goal of innovation and industry (SDG-9)**. The development of new drugs and pharmaceutical compounds contributes to advancements in the healthcare industry, addressing global health challenges and improving treatment options for various diseases.

P03: Analyze and interpret data from in vitro and in vivo studies to evaluate the safety and efficacy of drug compounds, and use computational methods to predict drug activity and toxicity, which aligns with the **UN-SDG 2030 goal of responsible consumption and production (SDG-12)**. By employing rigorous evaluation methods, individuals in the field of pharmaceutical Chemistry can contribute to the development of safe and sustainable pharmaceutical products, ensuring responsible use and minimizing adverse effects.

P04: Evaluate and critically assess the ethical and regulatory issues related to drug development and use, and propose strategies to ensure responsible and ethical use of pharmaceuticals, which aligns with the **UN-SDG 2030 goal of promoting ethical practices and partnerships (SDG-17)**. Considering the ethical implications and regulatory frameworks in drug development and usage helps safeguard patient rights, ensure equitable access to medications, and foster responsible industry practices.

P05: Synthesize and communicate complex ideas and concepts related to pharmaceutical Chemistry, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of quality education (SDG-4)**. By effectively communicating scientific information, individuals can contribute to raising awareness and understanding of pharmaceutical advancements, promoting informed decision-making and facilitating collaboration among diverse stakeholders.

These Program Outcomes in pharmaceutical Chemistry demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting good health and well-being, innovation and industry,

responsible consumption and production, ethical practices, and quality education for sustainable development.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Physics Major)

P01: Demonstrating knowledge and understanding of the fundamental concepts, principles, and laws of physics, including mechanics, electromagnetism, thermodynamics, and quantum mechanics, contributes to the **UN-SDG 2030 goal of quality education (SDG-4)**. By studying physics, individuals can develop a strong foundation in scientific principles, promoting scientific literacy and fostering critical thinking skills.

P02: Apply mathematical and computational techniques to analyze and solve problems in physics, using a variety of tools and methods to develop models, make predictions, and evaluate results, which aligns with the **UN-SDG 2030 goal of industry, innovation, and infrastructure (SDG-7, SDG-9)**. The application of physics in various fields, such as engineering and technology, contributes to advancements in infrastructure, energy systems, and technological innovations.

P03: Evaluate and critically assess the validity and limitations of scientific models and theories, and use evidence-based reasoning to draw conclusions and make predictions about physical phenomena, which aligns with the **UN-SDG 2030 goal of sustainable cities and communities (SDG-7, SDG-11)**. Understanding the principles of physics enables individuals to assess the environmental impact of human activities, contribute to sustainable urban planning, and develop solutions to address energy and resource challenges.

P04: Design and conduct experiments and investigations to test hypotheses, collect and analyze data, and communicate results using appropriate scientific terminology and conventions, contributing to the **UN-SDG 2030 goal of responsible consumption and production (SDG-12)**. By conducting scientific experiments, individuals can contribute to the development of sustainable practices, optimize resource utilization, and promote responsible decision-making in various industries.

P05: Synthesize and communicate complex ideas and concepts related to physics, using effective written and oral communication skills to convey scientific information to a variety of audiences, which aligns with the **UN-SDG 2030 goal of quality education and partnerships for the goals (SDG-4, SDG-17)**. By effectively communicating scientific knowledge, individuals can promote public understanding of scientific advancements, engage in interdisciplinary collaborations, and foster knowledge-sharing for sustainable development.

These Program Outcomes in physics demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to global goals, promoting quality education, industry, innovation, and infrastructure, sustainable cities and communities, responsible consumption and production, and partnerships for sustainable development.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Seed Technology Major)

P01: Demonstrate knowledge of seed biology, genetics, and breeding techniques, align with the **UN-SDG 2030 goal of zero hunger (SDG-2)**. By understanding the principles of seed biology and genetics, individuals can contribute to the development of improved seed varieties with higher yields, better nutritional content, and resistance to pests and diseases, thereby promoting food security and sustainable agriculture.

P02: Apply seed production and processing technologies to produce high-quality seeds, contributes to the **UN-SDG 2030 goal of responsible consumption and production (SDG-12)**. By employing efficient and sustainable seed production techniques, individuals can ensure the availability of high-quality seeds for farmers, promote responsible resource use, and reduce waste in the agricultural sector.

P03: Evaluate seed quality using appropriate laboratory and field techniques, which aligns with the **UN-SDG 2030 goal of sustainable agriculture (SDG-1, SDG-2, SDG-10, SDG-13, SDG-17)**. By assessing seed quality, individuals can ensure that farmers have access to reliable and viable seeds, which are essential for achieving sustainable agricultural practices, improving crop yields, and mitigating the risk of crop failures.

P04: Communicate effectively with stakeholders in the seed industry, including growers, researchers, and policymakers, contributes to **the UN-SDG 2030 goal of partnerships for sustainable development (SDG-9, SDG-17)**. By engaging in effective communication, individuals can foster collaborations, share knowledge and best practices, and influence policies related to Seed Technology, ultimately contributing to the advancement of sustainable agriculture and food systems.

P05: Apply ethical principles and professional standards to guide decision-making in Seed Technology and related fields, which aligns with the **UN-SDG 2030 goal of sustainable development (SDG-8, SDG, 10, SDG-11, SDG-13)**. By considering ethical considerations, such as equitable access to seeds, biodiversity conservation, and the rights of farmers, individuals can make informed decisions that prioritize long-term sustainability and social responsibility in Seed Technology and agriculture.

These Program Outcomes in Seed Technology demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting zero hunger, responsible consumption and production, sustainable agriculture, partnerships for sustainable development, and ethical practices in Seed Technology and agriculture.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Statistics Major)

P01: Demonstrating knowledge of statistical theories, methods, and techniques, which aligns with the **UN-SDG 2030 goal of promoting quality education (SDG-4)**. By acquiring knowledge in Statistics, individuals can contribute to the development of data-driven decision-making processes, evidence-based policies, and accurate assessments of social and economic indicators, leading to improved educational systems and outcomes.

P02: Applying statistical software and programming languages to analyze data contributes to the **UN-SDG 2030 goal of promoting sustainable economic growth and decent work (SDG-2, SDG-8, SDG-9)**. By utilizing statistical tools and techniques, individuals can assist in economic analysis, market research, and data-driven decision-making, facilitating informed strategies for sustainable development, poverty reduction, and job creation.

P03: Evaluating the reliability and validity of statistical models and analyses which aligns with the **UN-SDG 2030 goal of promoting peace, justice, and strong institutions (SDG-16)**. By critically assessing statistical models and analyses, individuals can contribute to the development of transparent and accountable systems, ensuring that decision-making processes are fair, unbiased, and based on accurate and reliable data.

P04: Communicating statistical findings and recommendations effectively to diverse audiences supports the **UN-SDG 2030 goal of promoting good health and well-being (SDG-3)**. By effectively communicating statistical information, individuals can contribute to public health initiatives, epidemiological studies, and evidence-based healthcare policies, ultimately leading to improved health outcomes and well-being for individuals and communities.

P05: Applying ethical principles and professional standards to guide decision-making in statistical practice and research which aligns with the **UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12)**. By adhering to ethical principles, such as data privacy, confidentiality, and fairness, individuals can ensure that statistical practices and research contribute to sustainable development, responsible resource use, and the protection of individuals' rights.

These Program Outcomes in Statistics demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By focusing on these POs, individuals can actively contribute to the global goals, promoting quality education, sustainable economic growth, peace, justice, strong institutions, good health and well-being, responsible consumption and production, and ethical practices in statistical practice and research.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.Sc. (Zoology Major)

P01: Demonstrate knowledge and understanding of the principles of Zoology, including animal structure, function, behaviour, and diversity, as well as the mechanisms of animal growth, development, and evolution, which aligns with the **UN-SDG 2030 goal of promoting quality education (SDG-4)**. By acquiring knowledge in Zoology, individuals can contribute to the conservation of biodiversity, sustainable resource management, and the understanding of animal behavior and ecological processes, which are essential for achieving sustainable development and preserving the planet's ecosystems.

P02: Analyze and interpret complex data and scientific literature to develop hypotheses, design experiments, and draw conclusions related to animal biology, including anatomy, physiology, behaviour, and ecology, which aligns with the **UN-SDG 2030 goal of life on land, life under water (SDG-13, SDG-14, SDG-15, SDG-11)**. By understanding animal behavior, ecology, and interactions with urban environments, individuals can contribute to the development of strategies for urban planning, wildlife conservation in urban areas, and the coexistence of humans and animals in urban landscapes.

P03: Evaluate and critically assess the impacts of human activities on animal populations, ecosystems, and global environmental systems, and propose solutions to mitigate or prevent negative effects, which aligns with the **UN-SDG 2030 goal of protecting and restoring ecosystems (SDG-13)**. By identifying and addressing the negative impacts of human activities on animal populations and ecosystems, individuals can contribute to the preservation of biodiversity, the restoration of degraded habitats, and the conservation of endangered species.

P04: Apply laboratory and field techniques to collect and analyze animal data, and use quantitative methods to interpret and communicate findings related to animal biology, which aligns with **the UN-SDG 2030 goal of promoting responsible consumption and production (SDG-12, SDG-13)**. By conducting research and applying scientific methods, individuals can contribute to sustainable wildlife management, the development of conservation strategies, and the responsible use of natural resources.

P05: Synthesize and communicate complex ideas and concepts related to Zoology, using effective written and oral communication skills to convey scientific information to a variety of audiences, including non-scientific audiences, which aligns with the **UN-SDG 2030 goal of promoting good health and well-being (SDG-3)**. By effectively communicating scientific information about animal biology, individuals can contribute to public awareness, education, and engagement in conservation efforts, promoting the appreciation and protection of biodiversity for the well-being of both humans and animals.

These Program Outcomes in Zoology demonstrate the alignment between the educational objectives and the value framework enshrined in UN-SDG 2030. By

focusing on these POs, individuals can actively contribute to global goals, promoting quality education, sustainable cities and communities, the protection and restoration of ecosystems, responsible consumption and production, and the promotion of good health and well-being for humans and animals.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: B.C.A.

P01: An ability to apply knowledge of Mathematics, Computer Science and management in practice, which aligns with the **UN-SDG 2030 goal of promoting quality education (SDG-4)**. By acquiring knowledge and applying it in practical settings, individuals can contribute to the development of technological solutions and innovations that address societal challenges and promote sustainable development.

P02: An ability to enhance not only a comprehensive understanding of the theory but its application too in diverse fields, support the **UN-SDG 2030 goal of fostering innovation (SDG-9)**. By combining theoretical knowledge with practical application, individuals can drive innovation in various sectors, develop new solutions, and create positive social and economic impacts.

P03: The program prepares the young professional for a range of computer applications, computer organization, techniques of Computer Networking, Software Engineering, Web development, Database management and Advance Java, align with the **UN-SDG 2030 goal of promoting decent work and economic growth (SDG-1, SDG-8)**. By equipping individuals with specialized skills in the field of Computer Science, the program supports their employability, encourages entrepreneurship, and contributes to economic development.

P04: An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with a positive attitude, which aligns with the **UN-SDG 2030 goal of promoting sustainable cities and communities (SDG-11)**. By considering constraints and collaborating in multidisciplinary teams, individuals can design and develop technology solutions that address urban challenges, enhance safety and security, and improve the overall well-being of communities.

P05: An ability to communicate effectively which aligns with the **UN-SDG 2030 goal of promoting quality education and lifelong learning (SDG-4)**. Effective communication skills enable individuals to share knowledge, ideas, and information, fostering collaboration and understanding among diverse stakeholders. This supports the development and implementation of solutions that improve health, well-being, and access to information and services.

These Program Outcomes in the field of Computer Science align with the value framework enshrined in UN-SDG 2030 by promoting quality education, fostering innovation, supporting decent work and economic growth, contributing to sustainable cities and communities, and promoting good health and well-being.

Govt. Holkar (Model, Autonomous) Science College, Indore, M.P.
Programme Name: PGDCA

P01: Understanding the fundamental concepts of computer systems, programming languages, operating systems, and networking can contribute to several UN-SDGs. It which aligns with **SDG 9: Industry, Innovation, and Infrastructure**, as it promotes the development of technological knowledge and skills necessary for building and upgrading infrastructure. It also which aligns with **SDG 4: Quality Education**, as it supports the goal of providing inclusive and equitable education by equipping individuals with essential Computer Science knowledge.

P02: Analyzing and solving computational problems using algorithmic thinking and logical reasoning can contribute to **SDG 9: Industry, Innovation, and Infrastructure**. It promotes the development of innovative solutions and supports technological advancements that can address complex societal challenges.

P03: Acquiring knowledge and practical skills in web designing using HTML, XML, and DHTML can contribute to **SDG 8: Decent Work and Economic Growth**. It enables individuals to gain relevant skills for the digital economy and participate in job opportunities related to web design and development.

P04: Applying database design and SQL skills to design, create, and manage databases using Oracle can contribute to **SDG 16: Peace, Justice, and Strong Institutions**. Effective database management and secure data storage are essential for maintaining transparency, accountability, and efficient governance systems.

P05: Evaluating and applying e-commerce technologies, security measures, and business models can contribute to various SDGs. It which aligns with **SDG 8: Decent Work and Economic Growth** by promoting the growth of digital entrepreneurship and supporting inclusive economic development. It also which aligns with **SDG 9: Industry, Innovation, and Infrastructure** by fostering innovation in the digital economy.

Overall, these program outcomes have potential contributions to SDG 4: Quality Education, SDG 8: Decent Work and Economic Growth, SDG 9: Industry, Innovation, and Infrastructure, and SDG 16: Peace, Justice, and Strong Institutions.

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[Vasudhaiva Kutumbakam]

FINISHING GOAL



STARTING GOAL

Our SDG-2030 Goals Tree

कल्पवृक्षः

