



# GOVT. HOLKAR (MODEL AUTONOMOUS) SCIENCE COLLEGE, INDORE

## AN OVERVIEW OF CURRICULUM ENRICHMENT THROUGH INTEGRATION OF GENDER SENSITIVITY IN VARIOUS COURSES OF POST GRADUATE PROGRAMMES

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**An Overview of Curriculum Enrichment through  
Integration of Gender in Various Courses of Post-  
Graduate Programmes**

**Molecular Biology (Paper Code: BT-21)**

The COs may not directly mention gender equality, but there are several ways to connect them to the broader topic and highlight their relevance in promoting gender equality:

CO1: Idea of genome organization and DNA kinetics. Gender equality can be linked to this CO by emphasizing that genetic differences between individuals do not determine their abilities, worth, or rights. It highlights the importance of treating individuals equally regardless of their genetic makeup.

CO2: Teach concept of DNA, its structure, replication, and recombination. Gender equality can be related to this CO by highlighting that DNA is the fundamental building block of all individuals, regardless of their gender. It reinforces the idea that gender should not be used as a basis for differential treatment or discrimination.

CO3: Describe Prokaryotic and eukaryotic transcription and their regulation. Gender equality can be connected to this CO by discussing the importance of equal opportunities for all individuals, irrespective of their gender, to participate in scientific research and contribute to advancements in the field of transcription and genetics.

CO4: Relate with Post Transcriptional modification and translation. This CO can be linked to gender equality by discussing how gender biases and stereotypes can affect the opportunities and recognition of individuals involved in post-transcriptional modification and translation research. It emphasizes the need for equal representation and recognition of all genders in scientific fields.

CO5: Explain various types of mutations and their mechanism. Gender equality can be related to this CO by emphasizing that genetic mutations occur irrespective of gender. It highlights the importance of equal access to healthcare, support, and resources for individuals affected by genetic mutations, regardless of their gender identity.

In summary, while the specific content of these COs may not directly address gender equality, they can be connected by highlighting the importance of equal treatment, opportunities, and recognition for individuals regardless of their genetic makeup or gender identity. It underscores the need for inclusivity and equal representation in scientific fields and the broader society.

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# **Biosystematics, Taxonomy and Evolution**

## **(Course Code – Z-11)**

The COs may not directly mention gender equality, but there are several ways to connect them to the broader topic and highlight their relevance in promoting gender equality:

CO1: Gain knowledge and understanding of the classification of animals based on their relation to other animals by body structure and external characters, and dimension of speciation. Gender equality can be related to this CO by highlighting that biological classification is based on objective scientific criteria and not on gender. It reinforces the idea that gender should not be a factor in determining an individual's worth, abilities, or opportunities.

CO2: Apply the principles and techniques for taxonomic procedures and international rules of nomenclature to give a scientific name to animals. Gender equality can be connected to this CO by emphasizing the importance of using gender-neutral language and avoiding gender biases in scientific naming conventions. It reinforces the principle of treating all living beings equally, regardless of their gender.

CO3: Apply biological indices in research purposes. Gender equality can be linked to this CO by highlighting the importance of gender-inclusive research methodologies and data analysis. It emphasizes the need to consider gender as a variable and to ensure equal representation of all genders in scientific studies.

CO4: Understand concepts and theory of organic evolution. Gender equality can be related to this CO by discussing how biological evolution operates independently of gender. It reinforces the idea that gender should not be a determinant of an individual's place in the natural world or their access to resources and opportunities.

CO5: Connect lower to higher vertebrates with the help of evolution. Gender equality can be connected to this CO by emphasizing that evolutionary connections among species are based on shared ancestry and biological relationships, not on gender. It reinforces the idea that all living beings, regardless of their gender, have a place in the evolutionary history of life on Earth.

In summary, while the specific content of these COs may not directly address gender equality, they can be connected by highlighting the importance of equal treatment, opportunities, and recognition for individuals regardless of their gender. It underscores the need for inclusivity and equal representation in scientific fields and the broader society.

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## Forensic Serology (Course Code: FS-33-A)

The COs may not directly mention gender equality, but there are several ways to connect them to the broader topic and highlight their relevance in promoting gender equality:

CO1: Illustration of biomolecules, their importance, and examination. Gender equality can be related to this CO by emphasizing the equal participation and recognition of individuals of all genders in scientific research and discovery. It highlights the need for diverse perspectives and contributions, irrespective of gender, to advance our understanding of biomolecules and their significance.

CO2: Basic quote of genetics and gene. Gender equality can be connected to this CO by highlighting that genetic traits and inheritance are not limited by gender. It reinforces the principle that individuals, regardless of their gender, can carry and pass on genetic information, and their worth or capabilities should not be predetermined or limited based on gender stereotypes.

CO3: Explanation of the immune system. Gender equality can be related to this CO by highlighting the importance of equal access to healthcare, including the understanding and treatment of immune-related conditions, for individuals of all genders. It emphasizes the need for equitable healthcare systems that address the unique health needs and concerns of all individuals.

CO4: Definition of the origin of species. Gender equality can be connected to this CO by discussing how the concept of species evolution operates independently

of gender. It reinforces the idea that gender should not be a determinant of an individual's place in the natural world or their access to resources and opportunities.

CO5: Illustration of blood groups and different types of markers. Gender equality can be related to this CO by emphasizing that blood groups and markers are biological characteristics that do not vary based on gender. It reinforces the idea that individuals should be treated equally and fairly in all aspects of life, including healthcare and medical interventions.

In summary, while the specific content of these COs may not directly address gender equality, they can be connected by highlighting the importance of equal treatment, opportunities, and recognition for individuals of all genders. It underscores the need for inclusivity and equal representation in scientific fields, healthcare systems, and society as a whole.

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# **Biotechnology and Genetic Engineering**

## **Course Code: BO-42**

The COs may not directly mention gender equality, but there are several ways to connect them to the broader topic and highlight their relevance in promoting gender equality:

CO1: Understand about biotechnology and its tools and techniques. Gender equality can be related to this CO by emphasizing the importance of equal opportunities for individuals of all genders to access and participate in the field of biotechnology. It highlights the need for inclusive educational and professional environments that promote gender diversity and provide equal opportunities for individuals to contribute and excel in this field.

CO2: Develop understanding of Genetic transfer, DNA fingerprinting, and PCR. Gender equality can be connected to this CO by emphasizing that genetic techniques and technologies are not limited by gender. It reinforces the principle that individuals of all genders can participate in and contribute to genetic research, DNA analysis, and other related fields. It highlights the importance of equal recognition and opportunities for individuals to engage in these techniques and technologies.

CO3: Write about transgenic crops and ethical issues related to it. Gender equality can be related to this CO by considering the gender dimensions of agriculture and biotechnology. It encourages discussions on how the development and adoption of transgenic crops can impact different genders within agricultural communities. It emphasizes the importance of considering and addressing gender-specific



concerns, perspectives, and potential inequalities in the context of biotechnology and agriculture.

CO4: Articulate the use of biotechnology in the development of economically important microbes. Gender equality can be connected to this CO by highlighting the need for equal participation and recognition of individuals of all genders in the development and utilization of biotechnology. It reinforces the principle that scientific contributions and advancements should not be limited by gender and that diverse perspectives and talents are essential for the sustainable development of economically important microbes and related applications.

CO5: Write basic concepts of bioinformatics. Gender equality can be related to this CO by emphasizing the importance of equal access and opportunities for individuals of all genders to engage in bioinformatics research and education. It highlights the need for gender-inclusive policies and practices in bioinformatics institutions and research settings to ensure equal representation and opportunities for individuals to contribute and excel in this field.

In summary, while the specific content of these COs may not directly address gender equality, they can be connected by emphasizing the importance of equal opportunities, inclusivity, and recognition for individuals of all genders in the field of biotechnology. It underscores the need for gender diversity, equal representation, and the consideration of gender-specific concerns in the development and application of biotechnological tools and techniques.

# **Molecular Biology and Genetic Engineering**

## **Course Code: MB-31**

While the specific content of the COs you mentioned may not directly relate to gender equality, there are ways to connect them to the broader topic. Here's how each CO can be related to gender equality:

CO1: Knowing the terms and terminology related to molecular biology and understanding the structure and functions of genes in living organisms at the molecular level. Gender equality can be related to this CO by emphasizing the importance of equal access to education and scientific knowledge for individuals of all genders. It highlights the need for inclusive science education that provides equal opportunities for individuals to understand and engage with molecular biology concepts, promoting gender diversity in the field.

CO2: Understanding the cloning strategies for the construction of gene libraries. Gender equality can be connected to this CO by highlighting the need for equal participation and recognition of individuals of all genders in molecular biology research and biotechnology. It emphasizes the importance of creating inclusive research environments where individuals can contribute to the development of gene libraries, regardless of their gender.

CO3: Studying gene amplification – PCR and its applications. Gender equality can be related to this CO by emphasizing equal opportunities for individuals of all genders to learn and apply techniques such as polymerase chain reaction (PCR). It highlights the importance of gender-inclusive research and educational

settings that provide equal access and training in PCR and other molecular biology techniques.

CO4: Understanding the importance of hybridization techniques. Gender equality can be connected to this CO by emphasizing the need for equal representation and participation of individuals of all genders in the development and application of hybridization techniques. It emphasizes the importance of diverse perspectives and talents in optimizing and expanding the applications of hybridization in molecular biology research.

CO5: Learning the concept of recombination, linkage mapping, and elucidating the gene transfer mechanism in prokaryotes and eukaryotes. Gender equality can be related to this CO by highlighting the need for equal opportunities for individuals of all genders to contribute to our understanding of gene transfer and genetic mapping in various organisms. It emphasizes the importance of recognizing and promoting the contributions of individuals of all genders in the field of genetics and molecular biology.

In summary, while the specific content of these COs may not directly address gender equality, they can be connected by emphasizing the importance of equal access, participation, and recognition of individuals of all genders in molecular biology research and education. It highlights the need for gender diversity, equal representation, and inclusive practices in scientific settings to promote gender equality in the field.

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