



FUNDAMENTALS OF ANIMAL AND HUMAN GENETICS

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WELCOME TO THE COURSE CONTENT OF ZOO-II-C4-FUNDAMENTALS OF ANIMAL AND HUMAN GENETICS

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This course is intended to provide solid understanding of concepts and principles of genetics as it applies to animals and humans

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QUADRANT 1- LECTURE VIDEOS

MODULE-1: TRANSMISSION GENETICS



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 [LEC 15 & 16- SEX INFLUENCED AND SEX LIMITED INHERITANCE](#)



MODULE-2: CHROMOSOME STRUCTURE & ABNORMALITIES



 [LECTURE 01-INTRODUCTION](#)



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MODULE-3: GENE MUTATION,SEX DETERMINATION



 [Lecture 14+15 _16- GENE MUTATION](#)



 [Lecture 17+18- TYPES OF MUTATION](#)



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UNIT 1: MODES OF INHERITANCE



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 [VIDEO 3- Selfish elements and Inheritance](#)

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QUADRANT 2- RESOURCES

MODULE-1: TRANSMISSION GENETICS



 [LEC 1 & 2 - INTRODUCTION AND CONCEPTS](#)



 [LEC 3- MENDEL'S FIRST LAW OF INHERITANCE](#)



 [Read: Recent progress in inheritance](#)



 [LEC 4-MENDEL'S 2ND AND 3RD LAW OF INHERITANCE](#)



 [VIDEO- Understand Mendel's Laws](#)



 [LEC 5- Test Cross and Back Cross](#)



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 [LEC 15 & 16 - SEX LIMITED, SEXINFLUENCED AND MULTIFACTORIAL INHERITANCE](#)



 [Journal Resources- Know More About Baldness](#)



 [Recent Progress: Pedigree analysis of some disorders](#)



 [E RESOURCES -TRANSMISSION GENETICS](#)



MODULE-2: CHROMOSOME STRUCTURE & ABNORMALITIES



 [LECTURE 01- INTRODUCTION](#)



 [LECTURE 2- PHYSICAL STRUCTURE OF CHROMOSOME](#)



 [VIDEO- DNA Compaction](#)



 [LECTURE 03- STRUCTURE OF CHROMOSOME- CHEMICAL](#)



 [LECTURE 4+5: CHEMICAL STRUCTURE OF CHROMOSOME](#)



 [Latest Reviews and Research on Chromosomes](#)



 [Know more about- Human Telomeres](#)



 [LECTURE 06-ORGANIZATION OF CHROMOSOME- EUKARYOTES](#)



 [LECTURE 07- KARYOTYPING](#)



 [LECTURE 09+11: CHROMOSOMAL ABERRATIONS](#)



- [Clinical Findings in Chromosomal aberrations](#)
- [LECTURE 12+13- CHROMOSOMAL STRUTURAL ABERRATION](#)
- [Latest Research and Reviews on Chromosomal Aberrations](#)
- [E Resources -CHROMOSOMAL ABERRATIONS](#)

MODULE-3: GENE MUTATION,SEX DETERMINATION

- [LECTURE 14+15+16- GENE MUTATION](#)
- [Types of Mutation](#)
- [Types of Point Mutation](#)
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- [LECTURE 22+23: CHROMOSOMAL SEX DETERMINATION](#)
- [LECTURE 24+25- MOLECULAR SEX DETERMINATION](#)
- [Lecture 26+27: Dosage compensation](#)
- [Know more about- Genetic Mechanism of Sex Determination](#)
- [E- Resources-SEX DETERMINATION](#)

QUADRANT 3- ACTIVITIES & DISCUSSION FORUM

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TEST YOUR LEARNING - MCQ

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CRITICAL THINKING ACTIVITIES

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QUADRANT-4: ASSESSMENTS

- [COURSE ASSESSMENT RUBRICS \(copy\).](#)

CONTINUOUS ASSESSMENT-1 (CA1) ASSIGNMENT

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- [Assignment Guidelines](#)

CONTINUOUS ASSESSMENT 2 (CA2)- PORTFOLIO BASED SUBMISSION

CONTINUOUS ASSESSMENT 2 (C4) PORTFOLIO BASED SUBMISSION

-  [PORTFOLIO SUBMISSION GUIDELINES](#)
-  [C4- Guidelines for MCQ](#)
-  [LINK FOR MCQ](#)

MODULE 4- PRACTICAL COMPONENT

-  [ONLINE PRACTICAL SCHEDULE](#)
-  [ONLINE PRACTICAL EXECUTION PLAN](#)
-  [E-JOURNAL- FUNDAMENTALS OF ANIMAL AND HUMAN GENETICS](#)
-  [GUIDELINES FOR MAINTAINING LAB RECORDS](#)

LAB EXERCISES

-  [Lab Exercise 1- Verification of Mendel's Law- Monohybrid Cross](#)
-  [Demonstration Video-Verification of Mendel's Monohybrid Ratio](#)
-  [LAB EXERCISE 2- Verification of Mendel's Law- Dihybrid Cross](#)
-  [VERIFICATION OF MENDEL'S DIHYBRID RATIO](#)
-  [Lab Exercise 3& 4- Karyotyping](#)
-  [METAPHASE PLATES](#)
-  [Guide for Identification of chromosomes](#)
-  [Instructions to carry out karyotyping](#)
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-  [Lab exercise 5+6: Karyotyping and Drosophila culture](#)
-  [Lab Exercise 7+8](#)
-  [LAB EXERCISE 6: Problems in Genetics :Multiple Genes](#)
-  [LAB EXERCISE 11: Analysis of pedigree charts](#)
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-  [Video : Pedigree analysis](#)

PRACTICAL ASSESSMENTS

-  [PRACTICAL ASSESSMENT RUBRICS](#)
-  [Link for practical assessment](#)
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 [ASSESSMENT SCHEME AND RUBRICS](#)

PLEASE DOWNLOAD THE [METAPHASE PLATES](#) AND GET IT PRINTED FOR YOUR PRACTICALS ON KARYOTYPING ANALYSIS IN HUMAN AS PER THE COURSE SCHEDULE.

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PRACTICAL ASSESSMENT 3- WORKSHEET

Dear students please download the file attached below as PA3 WORKSHEET. Carefully read the instructions given in the file and solve the worksheet. Please email the scanned copy of the solved worksheet on 25th April 2020 via email on zoology@chowgules.ac.in

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 [MOCK TEST ON MODULE 3](#)

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MODULE 3: GENETIC MUTATIONS, SEX DETERMINATION

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UNIT 3- CHROMOSOME STRUCTURE ☒

 [PART 2- STRUCTURAL ABNORMALITIES OF THE CHROMOSOME](#)

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UNIT 4- CHROMOSOME ABNORMALITIES ☒

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LEARNING ASSIGNMENT

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UNIT 6- SEX DETERMINATION ☒

 [PART 1- ENVIRONMENTAL SEX DETERMINATION](#)

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UNIT 5- GENETIC MUTATIONS ☒

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Learning Assignment 3

Dear students, please study the following presentations, additional resources and videos uploaded and answer the following questions.

Kindly note this is an individual activity. You are requested to answer the following questions in 300-400 words. The answer's should be hand written and email the scanned copy to mpboo6@chowgules.c.ac.in by 31 st of March 2020.

1. Based on your understanding compare and contrast chromosomal and gene mutation.

2. Classify the gene mutation based on its phenotypic effect. Support your answer with an example for each. (do not copy any example from the given ppt).

3. A mutation is caused by replacing the guanine with adenine and a mutation caused by replacing thymidine by a guanine. Identify and explain these mutations.

4. A female was suffering from a disorder associated with blood. Her blood report showed RBC's were abnormal in shape. Discuss the disorder she is suffering from. Add a note on its effect on amino acid synthesis.

5. Write a note on mutation caused due to synthesis of STOP codon.

Learning Assignment 4

Please study the following presentation, videos and answer the following questions in not more than 400 words. This is an individual activity which is to be handwritten.

Kindly scan the answer as a single document and email it to mpboo6@chogwgules.ac.in by 31st March 2020.

1. With the help of a diagram, describe the genic balance theory of sex determination in Drosophila.

2. X-chromosome inactivation is a critical epigenetic mechanism for balancing gene dosage between XY males and XX females in mammals. Explain the mechanism of dosage compensation with an example.



[REPEAT SEE QUESTION PAPER](#)



[Sex Determination in Mythology and History](#)



[GENE MUTATION](#)



[MOLECULAR BASIS OF SEX DETERMINATION](#)



[E- Resources](#)



[Know more about X inactivation](#)



[VIDEO 1](#)



[VIDEO 2](#)



[VIDEO 3](#)



[VIDEO 4](#)



ABOUT US

Parvatibai Chowgule College of Arts and Science is a premier educational institution in the State of Goa, offering courses at Graduate and Post Graduate levels and also Ph.D. programmes. Parvatibai Chowgule College is accredited by NAAC with Grade 'A' (CGPA of 3.41 on a 4-point scale on the 3rd cycle). Adjudged by Goa University as the Best Affiliated College at the time of its Silver Jubilee celebrations in the year 2009, it was also conferred with the Best Educational Institute award by Business Goa in 2014. Start Learning Now

CONTACT US

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