**UNIVERSITY OF GONDAR**

**INSTITUTE OF BIOTECHNOLOGY**

**DEPARTMENT OF AGRICULTURE BIOTECHNOLOGY**

**COURSE OUTLINE FOR ANIMAL BIOTECHNOLOGY**

1. **Course Identification**

**Course Title :** Animal Biotechnlogy

**Credit Hours :** Biot. 613

**Program :** 3 Credit Hours/Week

1. **Academic Year :** 2019-2020, Semester II
2. **Instructor’s Contact Information**

**Instructor Name :** Dr. Indracanti Meera

**Designation :** Associate Professor

**Office Location :** New Postgraduate Building

**E-mail Address :** [meerauog@gmail.com](mailto:meerauog@gmail.com)

**IV. Course Description**

The intention of this course is to discuss in detail the character of biotechnology in animal science. The course deals with analyses of cellular and metabolic regulation, gene expression, gene and animal models.

**Course Objectives**

At the end of this course students will be able to:

* Understand the animal cell culture techniques.
* Understand the methods of isolating & maintaining good quality breeds of animals
* Know the principles and applications of transgenic animal development & animal cloning.
* Understands the principles and techniques of animal genetic engineering and immune-technology.
* Familiarize with current advances in the animal Biotechnology
* Know the role of molecular techniques in contributing to the diagnosis of specific human diseases
* Discuss the use of current and emerging molecular biotechnology techniques to determine the molecular pathology of diseases and to design targeted therapies for specific treatments
* Integrate and synthesize information from fundamental principles and techniques in biomedical sciences and apply them to broader contexts
* Acquire and use the skills developed in the presentation of data and scientific ideas, both verbally and in writing, using scientific language or plain English as appropriate

**V. Assessment Arrangements**

Continuous assessment (50%) - Tests at the end of the chapters, assignments, presentations

Test I will be given which weights out 15%

Test II will be given which weights out 15%

Assignments and presentations may be given, which weights out 20%

Summative assessment (50%) - final examination

**VI. Course Policies**

**a) Ground Rules**

The course is delivered based on the rules and regulations of the university and the following rules must be kept for classroom purpose:

Attending all class is a must

Punctuality in class and assignment is mandatory

Active participation is required at most

Misbehaving at class is highly forbidden

Disabling a cellular phone is a must

**b) Academic Honesty Policy**

Students are responsible for their work only. Students who cheat on examinations, by whatever method, or guilty of plagiarism will, or may be given an “F” for course and dismissed permanently from class.

**c) Late Work**

Students may make any missed exam by the consent of the department members. And students are expected to provide their evidence for missing exam since 5 days after the onset of the examination.

**d) Disclaimer**

This syllabus represent a best plan for the course, but with most plans, it is subject to changes made necessary by time, space and personal constraints as the course progresses.

**VII. Course Content**

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**Contents**

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1. Chapter 1: Introduction
2. Chapter 2: Embryogenesis
3. Chapter 3: Structure and organization of animal cell and tissue culture
4. Genetic engineering techniques in animals
5. Transgenic animals
6. Molecular breeding
7. Ethical issues \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**References**

1. Review papers on latest developments on animal biotechnology should be referred.
2. Cruegar, W. and Cruger, A : Biotechnology: A text book of Industrial microbiology: Panima publication corporation, New Delhi.
3. Thieman & Paladins: Introduction to Biotechnology.
4. Wiley-Liss, Frishney: Culture of animal cells, 3rd edition.
5. Winker, Ernst L. (1987): From genes to clones, introduction to gene technology VCH, New York.
6. S.R Primose (2006/7): Principles of gene manipulation, and introduction to genetics.

**Approval Section**

**Course Instructor**

Name: Dr. Indracanti Meera Date Signature

**Department Head**

Name: Mr. Alemu Tebeje Date Signature