



SYLLABUS

Course Code	Course .Num	Course Name	Credit Hours	.Lec	.Lab	.Tut	Private study	requisites-Pre	Course Level	Teaching Language
BIO	333	Biotechnology	3	2	2	0	5	232BIO	6	English

A. Description Course

This course is designed to acquaint students with the field of biotechnology including historical development, current technologies and future trends. An overview of the molecular and genetic principles and processes used to manipulate living organisms and their products will be presented, as well as forensic, medical, agricultural and industrial applications. The course will also examine the ethical implications of biotechnology and genetic engineering.

B. Outcomes Course

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

1. To describe the fundamental aspects of the biotechnolTo describe the applications of micro-organisms in industry, environment, agriculture and biomedical fields.
2. To underline the applications of recombinant DNA technology in plant and animal biotechnology.
3. To give examples of biotechnology products and biotechnology techniques.
4. To discuss the importance of transgenic plants, bacteria and animals.
5. To define what are bio-informatics and its importance for analysis of data related to biotechnological applications.

C. :References

Required Textbook

- William Bains , *Biotechnology from A to Z* ,3rded (2004). .٩٧٨٠١١٩٨٥٢٤٩٨٤ :١٣-ISBN
- William J. Thieman, Michael A. Palladino, *Introduction to Biotechnology*, 2/E. Benjamin Cummings, (2009). .٠٣٢١٤٩١٤٥٩ :١٠-ISBN
- B. R. Glick and J. J. Pasternak (2003). *Molecular Biotechnology: Principles and Applications of Recombinant DNA*. .١٥٥٥٨١١٣٦٥-٩٧٨ :١٣-American Society for Microbiology. ISBN

:Other references

- Campbell, N.A. and Reece, J. B. (2008) *Biology* 8th edition, Pearson Benjamin Cummings, San Francisco.
- Griffiths, A.J.F et al (2008) *Introduction to Genetic Analysis*, 9th edition, W.H. Freeman & Co. NY
- Raven, P.H et al (2006) *Biology 7th edition* Tata mcgrawhill Publications, New Delhi
- Bernard R., Glick., *Molecular Biotechnology* 4 edition (2009).ISBN-13:9781555814984.
- William J. Thieman, Michael A. Palladino.; Michael Wink, *An Introduction to Molecular Biotechnology: Molecular Fundamentals, Methods and Applications in Modern Biotechnology*, Wiley-VCH, 2006.



- *Environmental Biotechnology: Theory and Application* by Gareth M. Evans and Judith C. Furlong. *Applied Biochemistry and Biotechnology*, by A. M. ULCHANDANI, HUMANA PRESS (2005).

Course Website: Google Classroom Webpage: <http://www.imamm.org/>

D. Topics Outline

topics Lectures .1D

1. Basics of biotechnology in animal and plant.
2. Basics of biotechnology in micro-organisms.
3. .foundations Biomedical technical
4. Agricultural, industrial and environmental biotechnology foundations.
5. The role of genetics in biotechnology.
6. .types Biotechnology
7. Isolate and arrangement of genetic material.
8. .DNA Structure of
9. Commercial biotechnological applications on micro-organisms.
10. Commercial biotechnological applications on plants.
11. Commercial biotechnological applications on animals.
12. A general revision of what has been studied and responded to queries.

Laboratories topics .2D

1. .Fermenters
2. .culture Tissue
3. .Hybridization
4. .Cloning
5. Genetic modification of living organisms.
6. .fingerprinting Genetic
7. .database Biological

E. Hours Office

Office hours give students the opportunity to ask in-depth questions and to explore points of confusion or interest that cannot be fully addressed in class.

F. System Exams & Grading

The semi-official dates of the exams for this course are:

- **Midterm 1:** 6th or 7th week.
- **Midterm 2:** 11th or 12th week.



- **Quizzes & Homeworks:** During the semester.
- **Final lab. Exam :** 14th or 15th week.
- **Final Exam :** 16th week.

Your course grade will be based on your semester work as follows:

% 15 :1Midterm	% 15 :2Midterm	%20Final lab. Exam:	%40:ExamFinal
% 10:Participation & Homework, Attendance 2 ,Quizzes 2			

:The grading distribution

+A	A	+B	B	+C	C	+D	D	F
[100 ,95]	(95 ,90]	(90 ,85]	(85 ,80]	(80 ,75]	(75 ,70]	(70 ,65]	(65 ,60]	(60 ,0]

G. Student workload

#	Teaching/Learning activities	Contact hours	Frequency	Total contact hours	Self-study hours	Total self-study hours	Student learning time
5	Lecture	2	15	30	2	30	60
2	Tutorial	0	0	0	0	0	0
0	Lab\practical	2	15	30	1	15	45
5	Homework	0	4	0	2	8	8
4	Quiz	0.5	2	1	1	2	3
6	Midterm	1.5	2	3	5	10	13
7	Final Exam	2	1	2	12	12	14
Total				66		77	143



H. Attendance/Absence Student

Only three situations will be considered as possible excused absences:

- Occurrence of a birth or death in the immediate family will be excused. (“Immediate family” is defined by the University as spouse, grandparents, parents, brother, or sister).
- Severe illness in which a student is under the care of a doctor and physically unable to attend class will be excused. Students are not excused for a doctor's appointment. Do not make appointments that conflict with rehearsals. .accepted Notes from the University Health Center will be

[Executive Rules for Study Regulations and Exams](#)

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