



Philadelphia University

Faculty of Science

Department of Biotechnology and Genetic Engineering

Second Semester, 2009/20010

Course Syllabus

Course Title: Food Biotechnology	Course code: 240340
Course Level: 3ed year	Course prerequisite (s) and/or corequisite (s): Introduction to Biotechnology (240281)
Lecture Time: 9:15-11:15 (M, W)	Credit hours: Three

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Sameer Masoud	Associate Professor	S817	10-11 (S, Tu, Th) 11:15-1:00 (M, W)	smasoud@philadelphia.edu.jo

Course module description:

Biotechnology is becoming increasingly important to food. Biotechnology has been used in food production for thousands of years (e.g. brewing, yoghurt, pickling,...). The new Biotechnology has a high potential in food production and processing. This course will cover the applications of new biotechnology in food production or processing.

Course module objectives:

The objective of this course is to combine the biotechnological applications studied in other courses and relate to food. This will give students a comprehensive understanding of transgenic food, biotechnological food additives, biotechnological food diagnosis and regulations.

Course/ module components

- **Text Book (Title; Introduction to Food Biotechnology. Author; Perry Johnson-Green. Publisher; CRC Press. Year; 2002.**

Teaching methods:

Each week two lectures (2 X 75-minutes). Student questions and student participation in discussions are encouraged.

Learning outcomes:

- Knowledge and understanding of definition and the different uses of food biotechnology. These include the tools used, production of recombinant proteins and additives to use in food technology, transgenic foods, diagnostic system used in food industry, and ethics and safety of food biotechnology.
- After the course the students are expected to understand new development in the field with analytical thinking of the various aspects of the new technology.
- Students are expected to ask questions and participate in discussions.

Assessment instruments

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20 %
Second examination	20%
Homework and Reports	10 %
Final examination: 50 marks	50 %
Total	100 %

Expected workload:

On average students need to spend 2-3 hours of study and preparation/lecture.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of Science shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Course/module academic calendar

week	Basic and support material to be covered	Homework Reading of Text Book
(1)	Scope of Food Biotechnology (What is the difference between food technology and food biotechnology?)	Ch. 1
(2)	Tools of the Trade (How biotechnology techniques relate to food?)	Ch. 2
(3)	Recombinant Proteins (Production and applications in food)	Ch. 3
(4)	Plant Biotechnology in Foods (Background)	Ch. 4
(5)	Plant Biotechnology in Foods (Application to food production)	Ch. 4
(6)	Animal Biotechnology in Foods (Overview) First examination	Ch. 5
(7)	Animal Biotechnology in Foods (application to food)	Ch. 5
(8)	Diagnostic Systems (How and Why)	Ch. 6
(9)	Diagnostic Systems (application in food)	Ch. 6
(10)	Cell Culture and Food (Brewing, dairy biotechnology, food additives)	Ch. 7
(11)	Cell Culture and Foods (Microbial products used in food) Second examination	Ch. 7
(12)	Industrial Cell culture (Scale up)	Ch. 8
(13)	Industrial Cell culture (Downstream processing)	Ch. 8
(14)	Ethics and safety of food biotechnology products	Ch. 9
(15)	Regulations of food biotechnology	Ch. 9
(16)	Final Examination	

Module references

References can be found in related subjects such as

- Plant biotechnology.
- Animal biotechnology.
- Microbial biotechnology.

Other information can be found in the web site of Food and Agriculture Organization (FAO) and other UN organizations. Web sites of biotechnology also have some supporting information.