



University of Puerto Rico  
Mayagüez Campus  
College of Agricultural Sciences  
Programa de Ciencia y Tecnología de Alimentos



**OFFICIAL SYLLABUS**

**FOOD PROCESSING I  
CITA 6601 / HORT 6601**

<b>Credit Hours:</b> 3	<b>Contact Hours:</b> 3 hours of lecture per week
<b>Prerequisites:</b>	<b>Co-requisites:</b>
<b>Course Description (English):</b> Analysis of the causes of food deterioration and control measures. Fundamentals and commercial practices in the preservation of foods with treatments at room temperature, low and high temperatures, novel technologies and post-process operations.	
<b>Course Description (Spanish):</b> Análisis de las causas de deterioro en alimentos y medidas de control. Fundamentos y prácticas comerciales en la preservación de alimentos con tratamientos a temperatura ambiente, bajas y altas temperaturas, tecnologías noveles y operaciones pos proceso.	
<b>Learning Objectives:</b>  At the end of the course the students will be able to: a. Describe the fundamentals of unit-step operations in food processing and their effect on the nutritional value of food.	

**Content Outline and Time Distribution:**

<i>Topics to be covered</i>		<i>Contact hours</i>
I.	Food Spoilage: Definitions; Causes of Food Deterioration; Deterioration Control. Food Processing Plants Cleaning and Disinfection	5
II.	Ambient-Temperature Processing: Raw Material Preparation; Size Reduction; Mixing and Forming; Mechanical Separation; Fermentation and Enzyme Technology; Irradiation	8
III.	Low-Temperature Processing: Chilling; Controlled Atmosphere Storage; Freezing; Freeze Drying; Freeze concentration	8
IV.	High-Temperature Processing: Blanching; Pasteurization; Heat Sterilization; Evaporation; Extrusion; Dehydration; Baking and Roasting; Frying; Microwave Heating; Infrared Heating	11
V.	Novel technologies for food processing	8
VI.	Post-Processing Operations: Coating or Enrobing; Packaging; Filling and Sealing of Containers	5
<i>Total hours: (equivalent to course contact period)</i>		45.0

**Instructional Techniques:**

conference   
 discussion   
 computation   
 laboratory  
 seminar with formal presentation   
 seminar without formal presentation   
 workshop  
 art workshop   
 practice   
 trip   
 thesis   
 special problems  
 tutoring   
 research   
 others, please specify:

**Learning Resources and Minimum Facilities Available or Required:**  
Proyector, laptop

**Evaluation Techniques and Relative Weight:**

	<b>Percent</b>
<input checked="" type="checkbox"/> Exams ( <u>25%</u> each)	50%
<input checked="" type="checkbox"/> Final exam	25%
<input type="checkbox"/> Short quizzes	
<input type="checkbox"/> Laboratory	
<input checked="" type="checkbox"/> Oral reports	25%
<input type="checkbox"/> Monographies	
<input type="checkbox"/> Portfolio	
<input type="checkbox"/> Journals	
<input type="checkbox"/> Projects	
<input type="checkbox"/> Others, specify:	
<b>TOTAL: 100%</b>	<b>100%</b>

**Grading System:**

Quantifiable (letters)  Not Quantifiable

Standard Curve

100 - 90 A; 80 < 90 B; 70 < 80 C; 60 < 70 D; 0 < 60 F

**Bibliography:****Advances in Postharvest Fruit and Vegetable Technology, 2015**

Ron B.H. Wills, John Golding

CRC Press

ISBN 9781482216967

**Plant Sanitation for Food Processing and Food Service, Second Edition, 2014**

Y. H. Hui

CRC Press

ISBN 9781466577695

**Introduction to Food Process Engineering, 2014**

Albert Ibarz, Gustavo V. Barbosa-Canovas

CRC Press

ISBN 9781439809181

**Postharvest Technology and Food Process Engineering, 2014**

Amalendu Chakraverty, R. Paul Singh

ISBN 9781466553200

**Introduction to Advanced Food Process Engineering, 2014**

Jatindra Kumar Sahu

CRC Press

ISBN 9781439880715

<http://www.foodprocessing-technology.com/>

**Muredzi, P. 2012. Emerging Non-thermal Food Processing Technologies. CBH Books.**

<http://41.78.77.212:8080/jspui/bitstream/123456789/1000/1/CBH%20Final%20Version%20of%20Emerging%20%20Non-thermal%20book%20for%20MUREDZI.pdf>

**According to Law 51**

Law 51: The Comprehensive Educational Services Act for People with disabilities states that after identifying with the instructor and the institution, the student with disabilities will receive reasonable accommodation in their courses and evaluations. For more information contact the Department of Counseling and Psychological services at the Office of the Dean of Students (Office DE 21) or call 787-265-3864 or 787-832-4040 x 3772, 2040 and 3864.

**Academic Integrity:**

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13,

2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.

**Policy Against Discrimination Based on Sex, Sexual Orientation, and Gender Identity:**

The University of Puerto Rico prohibits discrimination based on sex, sexual orientation, and gender identity in any of its forms, including that of sexual harassment. According to the Institutional Policy Against Sexual Harassment at the University of Puerto Rico, Certification Num. 130, 2014-2015 from the Board of Governors, any student subjected to acts constituting sexual harassment, may turn to the Office of the Student Ombudsperson, the Office of the Dean of Students, and/or the Coordinator of the Office of Compliance with Title IX for an orientation and/or formal complaint.

**Sexual Harassment: Certification 130-2014-2015 states:**

Sexual harassment in the workplace and in the study environment is an illegal and discriminatory act and is against the best interests of the University of Puerto Rico. All persons who understand they have been subject to acts of sexual harassment at the University of Puerto Rico may file a complaint and request that the institution investigate, where necessary, and assume the corresponding action by the university authorities. If the complainant is a student, he or she must refer his or her complaint to the Office of the Student Ombudsperson or that of the Dean of Students.

**Certification 06-43 of the Academic Senate states, "The academic guidelines for offering online courses," defines:**

Traditional face-to-face courses are those that have less than 25% of the course's regular contact hours via the Internet. Therefore, a three-credit course will be considered "face to face" if, of the 45 hours of regular contact, 11 or less are taught via the Internet. According to certification 16-43 of the Academic Senate, a course may include up to 25% of its total contact hours via the Internet. The objective of this is so that all professors have this alternative in the case of any unscheduled eventuality.

Includes attachments:

Yes

No