



University of Puerto Rico  
Mayagüez Campus  
College of Agricultural Sciences  
Food Science and Technology



**OFFICIAL SYLLABUS**

**Culinology  
CITA 5XXX**

<b>Credit Hours:</b> 3	<b>Contact Hours:</b> Two hours of conference and four hours of laboratory a week	
<b>Prerequisites:</b> (BIOL3052 o CIBI3032 o BIOL3435 o BIOL4015) & (QUIM3335 o QUIM5071)		<b>Co-requisites:</b> N/A
<b>Course Description (español):</b>  Estudio de los conceptos de la ciencia que subyacen las transformaciones físicas y químicas de los alimentos cuando se cocinan o procesan. Comparación de métodos de cocción, ingredientes funcionales y condiciones de procesamiento que afectan el desarrollo de sabores, aromas y texturas. Principios de preparación de alimentos enfatizando los requisitos, retos y tendencias en el desarrollo de formulaciones y productos alimenticios.		
<b>Course Description (inglés):</b>  Study of science concepts underlying physical and chemical transformations when cooking or processing food. Comparison of cooking methods, functional ingredients and processing conditions affecting flavor, aroma and texture development. Food preparation principles with emphasis on requirements, challenges and trends in formulation and food product development.		
<b>Learning Objectives:</b>  This course will allow students to integrate knowledge previously acquired through introductory courses with cooking techniques utilized in food production. Through cooking, students will explore the functions of food components and the cooking techniques underlying different food preparations. Also, students will gain knowledge of the challenges and tasks faced when developing food products.  At the end of the course the students will be able to:		
<ol style="list-style-type: none"> <li>1. Explain the characteristics and functions of major food components such as proteins, simple and complex carbohydrates, fats, water, salts and other additives.</li> <li>2. Assess and describe the changes occurring in foods during preparation and cooking as well as the functions of food constituents</li> <li>3. Assess and troubleshoot common problems found in small-scale food production</li> </ol>		

environments
4. Describe and apply cooking techniques to correctly produce different food preparations.
5. Understand and describe the effects of different cooking techniques on the characteristics (i.e. flavor, texture and aroma) of food.
6. Correctly use and maintain equipment commonly employed in small scale food production activities.
7. Describe the steps and tasks involved in the development of a standard recipe/formulation.
8. Identify and describe cooking styles, culinary trends and regional-ethnic gastronomic legacies.

**Content Outline and Time Distribution:**

<i>Temas a cubrir</i>	<i>Horas contacto</i>
I. Introduction: From Culinary Arts to Food Science The development of Culinology	1
II. The Business of New Product Development Role of Culinology Professionals	1
III. Food Composition; Heat-driven reactions	3
IV. Review of Cooking techniques	2
V. Kitchen tools and equipment	2
VI. Protein-based Foods; meats and poultry	2
VII. Protein-based Foods; Seafood	1
VIII. Protein-based Foods; Vegetable sources of protein and protein complementation	1
IX. Carbohydrate-based Foods	3
X. Lipid Based Foods; Egg and milk rich foods	1
XI. Egg and milk-based foods	1
XII. Fermentation basics and leavening agents	1
XIII. Food Additives	1
XIV. Shelf-life extension	1
XV. Development of Nutritious food products	2
XVI. Culinology Applications and Commercialization	2
XVII. Case studies	2
XVIII. Exams	3
<i>Total de horas: (deben ser equivalentes a las horas crédito del curso)</i>	30

<i>Laboratories</i>	<i>Horas contacto</i>
1. Kitchen Environment Introduction; Knife Skills	4
2. Stocks and soups	8
3. Eggs and protein coagulation	4
4. Emulsions, fats and oils	4
5. Starches, legumes and grains	4
6. Dry-heat cooking techniques	4
7. Moist-heat cooking techniques	4
8. Bakeshop basics	4
9. Roles of ingredients in baked goods I	4
10. Roles of ingredients in baked goods II	4
11. Flour and pasta making techniques	4
12. Study field trip	4
13. Skills practicum; Magic Box	4
14. Exam	4
<i>Total de horas: (deben ser equivalentes a las horas crédito del laboratorio)</i>	60

**Técnicas Instruccionales:**

- 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:**

Blackboards, LCD projectors, digital presentations, Internet access, multimedia equipment for the reproduction of videos and digital images. Part of the content of this course can be delivered using a Learning Management System such as Moodle. A well-equipped kitchen laboratory environment is required to perform skill sets and participate of live demos and other food preparations.

**Evaluation Techniques and Relative Weight:**

	Percent
<input checked="" type="checkbox"/> Exams	70
<input checked="" type="checkbox"/> Final exam	10
<input type="checkbox"/> Short quizzes	
<input checked="" type="checkbox"/> Laboratory	20
<input type="checkbox"/> Oral reports	
<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; <90-80 B; <80-70 C; <70-60 D; <60-0 F

**Bibliografia:**

- Association, R.C. (2016). *Culinology: The intersection of Culinary Arts and Food Science*. 1<sup>st</sup> edition. Wiley. ISBN-13: 978-0470481349
- Association, N.R. (2017). *ServSafe CourseBook with Answer Sheet*. 7<sup>th</sup> edition. Pearson. ISBN-13: 978-0134764214
- Corriher, S.O. (2011). *CookWise: The Hows & Whys of Successful Cooking, The Secrets of Cooking Revealed*. New York, New York. William Morrow Cookbooks. ISBN-13: 978-0062098658
- Gisslen, W. (2016). *Professional Baking*, 7<sup>th</sup> edition. Wiley. ISBN-13: 978-1119148449
- Herbst, R., Herbst, S.T. (2013). *The New Food Lover's Companion*. 5<sup>th</sup> edition. Hauppauge, New York. Barron's Educational Series. ISBN-13: 978-1438001630
- Kolb, D.A. (2015). *Experiential Learning: Experience as the Source of Learning and Development*. 2<sup>nd</sup> edition. Pearson Education, Inc. ISBN-13: 978-0133892406
- Labensky, S.R., Martel, P.A., Hause, A.M. (2018). *On Cooking: A Textbook of Culinary Fundamentals*, 6<sup>th</sup> edition. Upper Saddle River, N.J. Prentice Hall. ISBN-13: 978-0134441900
- McGee, H. (2004). *On Food and Cooking: The Science and Lore of the Kitchen*. Revised Updated edition. Scribner, New York. Penguin Press. ISBN-13: 978-1594202681
- Peterson, J. (2017). *Sauces: Classical and Contemporary Sauce Making*, 4<sup>th</sup> edition. Hoboken, N.J. Houghton Mifflin Harcourt. ISBN-13: 978-0544819825
- Vaclavik, V., Christian, E. W. (2014). *Essentials of Food Science*. Springer. ISBN-13: 978-0387699394

**Electronic references**

- CULINOLOGY® services. (n.d.). Retrieved August 19, 2018, from <http://emea.ingredion.com/idealabs/innovate/applicationsknowhow/culinology.html>
- Culinology in Product Development - IFT.org. (n.d.). Retrieved August 19, 2018, from <http://www.ift.org/food-technology/past-issues/2016/july/columns/culinary-point-of-view-stephen-kalil.aspx>
- Curious Cook. (n.d.). Retrieved December 10, 2018, from <https://www.curiouscook.com/site/>
- RCA: Research Chefs Association. (n.d.). Retrieved August 19, 2018, from <https://www.culinology.org/>

**Acomodo Razonable:**

Ley 51: Ley de Servicios Educativos Integrales para Personas con Impedimentos: Después de identificarse con el profesor y la institución, los estudiantes con impedimento recibirán acomodo razonable en sus cursos y evaluaciones. Para más información comuníquese con el Departamento de Consejería y Servicios Psicológicos en el Decanato de Estudiantes (Oficina DE 21) o a los teléfonos 787-265-3864 ó 787-832-4040 x 3772, 2040 y 3864.

**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.

**Integridad Académica:**

La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que “la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente.

**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.

**Normativa sobre Discrimen por Sexo y Género en modalidad de Violencia Sexual:**

La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra Hostigamiento Sexual, Certificación Núm. 130 (2014-15) de la Junta de Gobierno, si un(a) estudiante es o está siendo afectado por conductas relacionadas a hostigamiento sexual, puede acudir a la Oficina de la Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o para presentar una queja.

**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.

**Hostigamiento Sexual:**

La certificación 130-2014-2015 indica que el hostigamiento sexual en el empleo y en el ambiente de estudio es una práctica ilegal y discriminatoria, ajena a los mejores intereses de la Universidad de Puerto Rico. Toda persona que entienda ha sido objeto de actuaciones constitutiva de hostigamiento sexual en la Universidad de Puerto Rico podrá quejarse para que se investigue, de ser necesario, y se tome la correspondiente acción por parte de las autoridades universitarias. Si quien reclama fuera estudiante, deberá referir su queja a la Oficina de la Procuradora Estudiantil o al Decanato de Estudiantes.

**Sexual Harassment:**

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.

**La certificación 06-43 del Senado Académico indica “Las guías académicas para el ofrecimiento de cursos en línea”, define:**

Cursos presenciales son aquellos que tienen menos de un 25% de las horas contacto regular del curso a través de la Internet. Así, un curso de 3 créditos será considerado “presencial” si, de las 45 horas de contacto regular, 11 o menos son a través de la Internet. De acuerdo con la

certificación 16-43 del senado académico, el curso puede incluir hasta un 25% del total de horas contacto a través de la Internet. El objetivo es que todo profesor tenga esta alternativa ante cualquier eventualidad no programada.

**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