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Food Production: Tradition and Innovation

PROF. STEFANO PONI (ACADEMIC COORDINATOR) / PROF. ALDO PRANDINI / PROF. JOSÉ MARÍA AJKAY ROMERO / PROF. PIER SANDRO COCCONCELLI / DR DANIELA BASSI / DR HELLAS CENA / DR MILENA LAMBRI / DR LUCA SANDEI / PROF. DAVID YANISKO

OVERVIEW

Area: Agribusiness & Food Sciences

Dates: 27 June – 7 July 2017 (2 weeks)

Campus: Piacenza

Course Number: AG / FD 310

Term: Summer School 2017

Credits: 6 ECTS

COURSE DESCRIPTION

After providing an overview about biochemical background, nutritional value and health-related issues linked of the Mediterranean diet, the course will cover the 'farm-to-fork' pathway of typical food types of the Po Valley and, in particular, of the Piacenza district, including tomato sauce, *Grana Padano*, *salumi* and *wine*. For any of them, theory and practice under the form of tasting will be delivered.

MAIN TOPICS

- **The Italian food tradition and the Mediterranean diet - Dr Hellas Cena**

The learning objective is to provide the basic knowledge of the nutrients and their metabolism, focusing on the role of nutrition on health.

The following topics will be addressed:

1. Energy: energy expenditure, measurement of energy expenditure, energy requirements, food energy
2. Food groups
3. Nutrition in adult years: diet in physiological conditions, dietary guidelines
4. Mediterranean diet and weight control: cultural aspects of dietary planning, nutrient content, results on prevention and therapy of the main degenerative chronic pathologies, focusing on weight gain prevention and weight control.

Biography

Dr. Hellas Cena is a tenured researcher at Pavia University, Department of Human Nutrition. Since 2014 she has been Head of the Dietetics and Clinical Nutrition area at Pavia ProVitaMed Centre. Dr. Hellas Cena currently teaches Medical Nutrition Therapy, Essential of Nutrition, Nutrition and sports, Nutrition and Pregnancy in graduate and post-graduate courses at Pavia University, Faculty of Medicine, as well as at Milan University, Faculty of Medicine. Moreover, she is the Academic Director of the Master's Degree (MAS) in Dietetics and Clinical Nutrition at Pavia University.



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- **Food Preservation - Prof. David Yanisko (State University of New York – Cobleskill)**

Fermentation and pickling are some of the oldest methods of preserving foods and a way to enhance the nutritional value of foods. These ancient methods deliver unique, ever changing, seasonal foods that stand out among today's industrial food products. What role do microbes play in determining texture and flavor? We'll discuss the science behind these fermented foods.

Biography

Professor Yanisko is currently an assistant professor in Agriculture and Food Management at the State University of New York (SUNY) Agriculture and Technical College at Cobleskill and obtained his MS Ed in Career and Technical Education from SUNY Oswego in 2016. Dave has 12 years of experience as a chef in a la carte and private event dining in Philadelphia, Pennsylvania and resort areas of Southern New Jersey. He is heavily influenced by and classically trained in French brigade/contemporary restaurants. Dave teaches introductory/fundamentals culinary classes, Introduction to Food Science, Regional American Cuisine, Catering Operations, and Restaurant Operations

- **Culinary Trends and Philosophies that influence the way we eat - Prof. José María Ajkay Romero (Universidad de La Sabana)**

This course targets students with an interest in marketing, menu development, business, consumer insights, food production, hospitality management and culinary arts, gastronomy and food anthropology.

This course prepares students to analyze some of the current trends in the hospitality industry. The course begins with an overview of restaurant segments and examines the influence of the different demographic and philosophical groups on the current gastronomic scene.

The course then will progress to examine trends that are currently shaping the food industry landscape around the world. We will explore new restaurant business models and strategies that have taken off since the gastronomic boom of the past years.

The objective of this course is to provide an understanding of a variety of business models beyond the traditional restaurant / Industry, through case studies of successful businesses.

Discussion 1:

- Traditional segments of restaurants and their menus
- New categories of 'restaurants' and their menus
- Molecular gastronomy, slow food, modernist cuisine and food that is linked to a fashion trend and others.

After this course students will be able to:

- List categories of both chain and independent restaurants such as QSR, full-service casual and fine dining
- Discuss the pros and cons of permanent traditional establishments and temporary establishments
- Give examples of each type of establishment and analyze each corresponding demographic market
- Identify food trends on restaurant menus provided by the instructor
- List and understand purveyor characteristics and vertical integration.



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Discussion 2:

- An exploration of Pop-ups and food trucks

After this course students will be able to:

- Describe unconventional food establishments such as food trucks, the pop-up, secret dinners and guest chef series
- Discuss the pros and cons of permanent traditional establishments and temporary establishments
- Give examples of unconventional establishments
- List and understand purveyor characteristics and vertical integration.

Discussion 3:

- Food Trend: The Evolution of Vegan and Vegetable-Centric Menus designed for Omnivores. A study of the vegan food industry, hunters and foragers.

References

- › 11 Hottest Food & Beverage Dining Trends in Restaurant & Hotels (2016):
<http://www.baumwhiteman.com/2016Trends.pdf>
- › 2016 Food Trends (s.f): <http://www.globalfoodforums.com/food-news-bites/2016-food-trends/>
- › Food Trends (s.f): <http://m.nrn.com/menu/food-trends>
- › The food people (s.f): <http://thefoodpeople.co.uk/infographics>
- › What's hot 2016 culinary forecast (s.f) National Restaurant Association:
<http://www.restaurant.org/News-Research/Research/What-s-Hot>

Biography

Prof. José María Ajkay Romero is associate professor in Science Culinary Arts & Professional Catering of Sullivan University in Louisville, KY (USA). He was committed in various big events. For instance, he was involved as chef for the US Olympic team and committee in the Winter Olympic Games of 2010. He currently teaches at Universidad de La Sabana (Bogotá, Colombia) in the field of Gastronomy. His academic activity focuses on Culinary Arts as head of the Area Of the Gastronomy Program.

- **Salumi: a unique itinerary to excellence - Prof. Aldo Prandini**
 - The production chain of the "Typical Italian Heavy Pig"
 - the guideline of the "Consortium of Parma and S. Daniele Prosciutto (ham)"
 - Processing of Italian PDO (Protected Designation of Origin) salami: Coppa Piacentina (air-cured seasoned pork meat), Pancetta Piacentina (seasoned belly/bacon), Salame Piacentino (salami) and Prosciutto di Parma and San Daniele (Parma and San Daniele Ham).
- **Productivity and quality traits in protected and open field production – Dr. Jorge Gutiérrez (Instituto Tecnológico de Estudios Superiores, Monterrey)**

Tomato production can be obtained in open field as well as in protected growth environments (greenhouses). In both scenarios climate change is affecting plant development, crop productivity and expected quality traits. The extent of the control or manipulation of the environmental variables we provide during plant development can be used to increase certainty over expected yield and quality traits.



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Characteristics of both growing conditions while dealing with environmental variables and climate change will be evaluated and discussed with participants.

References

- › Salumi italiani, uomini, storie e prodotti d'Eccellenza. Men, their stories and products of excellence. - G. Gorreri - Food Editore.
- › Tecnologie dei salumi. Lucia Grazia e Fabio Coloretti – Edagricole.

Biography

Prof. Aldo Prandini is professor of Animal Sciences at the Faculty of Agricultural, Food and Environmental Sciences. Università Cattolica del Sacro Cuore, Piacenza-Cremona Campus. His fields of research are the nutrition of non-ruminant animals and the quality of meat and PDO products. He is the author of more than 150 papers about these topics.

- **Grana Padano: history, tradition and processing - Prof. Pier Sandro Cocconcelli and Dr Daniela Bassi**
 - History and tradition of Italian hard cheeses
 - Grana Padano PDO: the specification and the manufacturing process
 - The natural whey-cultures
 - Bacterial dynamics during primary fermentation and ripening
 - The biochemistry of Grana Padano ripening
 - Spoilage defects and problems during production
 - Grana Padano tasting

References

Reading material on specific topics, links to websites will be supplied during the course.

Biography

Daniela Bassi is a researcher in food microbiology at the Faculty of Agriculture, Food and Environmental Sciences of the Università Cattolica del Sacro Cuore. She has a University degree in Molecular Biology, a Diploma of Specialization School in Applied Genetics and a PhD in Molecular Biotechnologies. Her research activity is particularly focused on the molecular biology of food-associated bacteria and especially on clostridia-dependent late bowling cheese.

Pier Sandro Cocconcelli, is Full Professor of Food Microbiology at the Università Cattolica del Sacro Cuore and he is Rector's delegate for internationalization of the same university. Since 2003, he is scientific expert of the European Authority of Food Safety (EFSA) His research activities are focused on food and agricultural microbiology, bacterial molecular biology, bacterial genomics, risk analysis of food pathogenic bacteria, and on the gene exchange of antibiotic resistance and virulence determinants in the food chain.

- **Tomato sauce: from the field to the pasta dish - Dr Luca Sandei**
 - The Italian red gold: History, Tradition, Biodiversity, Cultivation and Research
 - Excellence and Innovation to make Quality: Tomato processing and Quality attributes of Italian Tomatoes
 - Visit to tomato processing plant (3 Hours practical).



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References

- › Tomato Production, Processing & Technology by Wilbur A. Gould – CTI PUBLICATIONS INC. Baltimore, Maryland.
- › I derivati industriali del Pomodoro by Carlo Leoni – SSICA – Parma
- › Handbook of Vegetable Preservation and Processing – ed. Y.H. Hui, S. Ghazala, et al. - Marcel Dekker, Inc. New York –Basel.
- › A complete Course in Canning by D.L. Downing – CTI Publications INC. Baltimore, Maryland.

Biography

Dr. Luca Sandei graduated in Food Science. He is Project Manager of many researches and development projects (on vegetable products, fresh, processed dry and frozen food), and the Head of the tomato department since 2008 at SSICA (Experimental Station for the Food Preserving Industry in Parma, Italy). He is also the Chairman of the International Legislation Commission of the WPTC (World Processing Tomato Council). Dr. Sandei is national member of Codex Alimentarius.

- **Grape growing and wine making: a trade-off between tradition and innovation - Prof. Stefano Poni and Dr Milena Lambri**

- Is the terroir concept in viticulture still holding as it was? There is the need to compromise between "tradition" and "innovation" to stay competitive in the wine market feasible solutions.
- Climate change is challenging viticulture worldwide in terms of geographical distribution and ripening patterns. Do we have short term tools to face such challenge?
- Status and outlook for the viticulture of the Colli Piacentini area, Po Valley, Italy. Our vine growing standards.

- **Wine-making training module**

The course makes an overview on wine types and winemaking techniques in the Colli Piacentini area, Po Valley (Italy) and deepens the meaning of the parameters that drives the modern enology. Examples regard the aware use of enological adjuvant and the wine-making needs caused by the climate changes.

Detailed topics are:

- DOC Colli Piacentini wines
- Concepts of wine resilience
- Aware use of enological adjuvant
- Critical points in winemaking to counteract the effects of climate changes
- Wine tasting

References

- › C. NAVARRE, Enologia, Hoepli, Milano, 2005.
- › Keller, M. 2015. The Science of the grapevines – Anatomy and Physiology. Academic Press, San Diego, California, USA.



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- › Iland, P., Dry, P., Proffitt, T., Tyerman, S. 2011. The grapevine: from the science to the practice of growing vines for wine. P.Iland Wine Promotion, Adelaide SA, Australia.
- › M. UBIGLI, I profili del vino. Introduzione all'analisi sensoriale, Il Sole 24 Ore Edagricole srl, Bologna, 2004.

Biography

Prof. Stefano Poni is a full professor of Viticulture and Chair of the Department of Sustainable Crop Production of the Università Cattolica del Sacro Cuore of Piacenza (Italy) since 1 November 2014. He is currently member of the national evaluation panel for assessment of the quality of research in Italy for the 2011-2014 time span. He is also Chair of the Committee supervising the teaching activities at the Faculty of Agricultural, Food and Environmental Sciences in Piacenza, and work package leader in the MODEM_IVM and INNOVINE projects funded within the FP7 European framework.

Dr. Milena Lambri is a full time researcher in Food Science and Technology, Institute of Enology and Agro-Food Engineering, Faculty of Agricultural, Food and Environmental Sciences, Università Cattolica del Sacro Cuore, Piacenza. She teaches Advances in Enology, Food sensory analysis and Processes of Food Technology. She is in charge of research projects on wine proteins, colloids, polyphenols, and tartrates for optimizing the use and dose of enological adjuvants and for implementing new plants and technologies in red winemaking.

LEARNING GOALS/OBJECTIVES

- To get acquainted with the concept of "we are what we eat".
- To understand the close link existing between the territory and the different typical food types.
- To perceive how "tradition" can anyway benefit from technological innovation without losing its "charme" and peculiarities.
- To understand that a "unique", non-duplicable product is a blend of optimal genotype x environment interaction and man's ability.

TEACHING METHODS

- Lectures
- Class discussions
- Group project works
- Guest speakers
- Tasting
- Industry/Vineyard/Winery visits.

EVALUATION AND GRADING

Attendance 20 %
Essay 20 %
Final exam 60 %

DETAILED DESCRIPTION OF ASSIGNMENTS

The essay (approx 10 pages) will be based on a specific topic selected by the student in agreement with the referent professor in class. The student must hand in by email within 10 days after the completion of the course.



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The in-class assessment will be a written exam composed of two parts: part a) 10 multiple choice questions, part b) 2 essay question to be chosen among 3 questions. The weights on the two parts of the final exam are 40% part a and 60% part b.

RULES OF CONDUCT

Exam Date: The exam date cannot be re-scheduled. Unexcused absences will result in a failing grade. The attendance policy is applicable also to field trips / site visits and all the curricular activities planned. In cases of unforeseeable circumstances such as illness or injury on the day of the exams, the student must submit a medical certificate and communicate his/her absence to the Professor and UCSC International Office via email **prior** to the exam. If the student does not justify his/her absence through sufficient documentation and with adequate notice before the final test, the student will receive an automatic Failed.