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Food Production: Tradition and Innovation

DR. ANTONIO GALLO (ACADEMIC COORDINATOR) / PROF. ALDO PRANDINI / PROF. EDOARDO FORNARI/ PROF. MATTEO GATTI/ DR. LUCA SANDEI/ INTERNATIONAL VISITING PROFESSORS: PROF. RIAZ AZIZ / PROF. MARIA XIMENA QUINTANILLA CARVAJAL/ GUEST SPEAKERS: DR. FEDERICO FROLDI / DR. SARA ZAMBIANCHI

Overview

Area: Agribusiness and Food Sciences

Dates: June 13 - 24

Campus: Piacenza

Course Number: AG/FD 310

Term: Summer 2022

Credits: 6 ECTS

Course description

After providing an overview about biochemical background, nutritional value and health-related issues linked to 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.

Course contents

Grana Padano and Parmigiano Reggiano: history, tradition and processing - Dr Antonio Gallo

- History and tradition of Italian hard cheeses
- Differences in nutrition aspects related to dairy cow diets
- Guidelines of the Protection Consortium of Italian hard cheeses
- Grana Padano PDO and Parmigiano Reggiano PDO: the specification and the manufacturing process
- New tools to verify authenticity of Grana Padano cheese

Instructor

Dr. Antonio Gallo is a researcher in Animal Nutrition Science at the Faculty of Agriculture, Food and Environmental Sciences of the Università Cattolica del Sacro Cuore. He has a PhD in Animal Nutritional Science. During his Ph.D., he spent a period at Utah State University as visiting scientist. For his PhD thesis, he received an award for "best thesis in Animal Production Science". His research field includes feed evaluation, feed safety and modelling digestion process in total tract of dairy cows. He is member of different Scientific Associations and is co-author of more than 80 peer-reviewed papers and 2 book chapters. In 2020, he has been included in the World's Top 2% Scientists list of Stanford University (field: Agriculture, Fisheries & Forestry, sub-field: Dairy & Animal Science; Ioannidis et al. (2020). PLoS Biol 18(10): e3000918. <https://doi.org/10.1371/journal.pbio.3000918>).

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Viticulture and enology: a trade-off between tradition and innovation – Prof. Matteo Gatti

- Climate change is challenging viticulture worldwide in terms of geographical distribution and ripening patterns. Do we have short term tools to face such a challenge?



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- There is the need to compromise between “tradition” and “innovation” to stay competitive in the wine market. Is the terroir concept still holding as it was? Feasible solutions.
- Status and outlook for the viticulture of the Colli Piacentini area, Po Valley, Italy. Our vine growing standards.

Course readings and materials

- Keller, M. 2015. The Science of the grapevines – Anatomy and Physiology. Academic Press, San Diego, California, USA.
- 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.

Instructor

Prof. Matteo Gatti is an Associate Professor at the Department of Sustainable Crop Production (Section of Fruit Culture and Viticulture). He obtained his PhD at the University of Angers (FRA) working on “Evaluation of the Terroir Effect on Wine Stilbenes Concentration”. From November 2013 to May 2014, he was an invited research fellow at the School of Chemistry of the University of Auckland (NZ) establishing “New Viticultural Trials on Central Otago Pinot Noir”. Visiting Professor at the Southwest University of Chongqing, China (2019). Prof Gatti has authored or co-authored 58 papers published in international refereed journals and 20 edited in international refereed proceedings. His main research fields are grape physiology, breeding, vineyard management, precision viticulture and viticultural zoning.

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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).
- The wild breeding of native Italian pig breeds and their niche products

Course readings and materials:

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

Instructor

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 member of different Scientific Associations and is co-author of more than 150 papers about these topics.

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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
- Tomato and Health principles and R&D projects



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Course readings and materials:

- 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.
- Lycopene and Tomatoes in Human Nutrition and Health – CRC Press -

Instructor

Dr. Luca Sandei is graduated in Food Science. He is Project Manager of many research and development projects (on vegetable products, fresh, processed dry and frozen food), and the Head of the Vegetables Area and tomato department since 2019 at SSICA Research Foundation (Experimental Station for the Food Preserving Industry in Parma, Italy). He is also the Chairman of the International “Tomato and Health and Generic Promotion” Commission of the WPTC (World Processing Tomato Council). Dr. Sandei is national member of Codex Alimentarius.

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Food Marketing – Prof. Edoardo Fornari

Learning aim is to provide students with basic knowledge of marketing-mix tools managed by manufacturers and retailers in the food & beverage industry. Both strategic and operational levers of marketing plans will be discussed. In particular, the following main topics will be addressed:

- path to purchase: consumers'/shoppers' needs, behaviors and emerging lifestyle attitudes towards food & beverage products;
- branding strategies in food & beverage, considering both single-firm brands and collective/consortium-managed brands (i.e. PDO brands;)
- food & beverage multichannel trade-offs: modern trade vs normal trade; buying groups vs chains; bricks and mortar stores vs e-commerce; general merchandise stores vs specialized stores;
- food & beverage retailers' marketing autonomy: assortment, store design, pricing, promotion and communication policies.

Development of understanding will be enhanced by means of case studies discussion regarding both large and medium-small firms and both national/local as well as international/global markets.

By the end of the course, students will have acquired knowledge about the basis of food marketing management. This will allow them to develop basic capabilities of market analysis, strategic planning and its application.

Course readings and materials:

Reading material on specific topics will be supplied during the course.

Instructor

Prof. Edoardo Fornari is Professor of Retail Marketing, Internet Marketing and Wine Marketing at the Catholic University of the Sacred Heart (Italy), where he is also associate researcher at REM Lab, the Research Centre on Retailing and Trade Marketing. He is Chair of the “Retailing & Channel Management” section of the Italian Marketing Society. His research activity is mainly focused on marketing channels, food marketing, retail management, branding, trade marketing, multichannel retailing and shopper marketing.

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An overview of agricultural trade between Italy, its EU partners and the U.S – Prof. Riaz A. Aziz

The objective is to provide a broad basis of understanding of trade issues that impact the Italian agricultural industry. The following topics will be addressed:

- Tariffs: The unexpected side effects of trade constraints
- Agricultural productivity and economic growth
- Impact of agricultural research and modern technology on food production

Course readings and materials:

- Agriculture Policy and Trade Reform: Potential Effects at Global, National and Household Levels by the Organization for Economic Co-Operation and Development – OECD Publishing. Paris, France.
- The Influence of Trade Agreements in Global Agricultural Markets by Benjamin Stenton – Nova Science Publishers, Inc., Hauppauge, New York.
- Agricultural Development and Economic Transformation by John W. Mellor – Springer International Publishing, Cham, Switzerland.
- Integrated Processing Technologies for Food and Agricultural By-Products by Zhongli Pan, et al. – Academic Press, Cambridge, Massachusetts, United States
- Tariffs in Global Agricultural Markets by Paul Gibson, et al. – Economic Research Service – United States
- Department of Agriculture, Washington, D.C, United States – Additional reading material and web links will be supplied during the course.

Instructor

Dr. Riaz Aziz is a Faculty Lecturer at the Department of Agribusiness and Applied Economics at North Dakota State University in Fargo, North Dakota and at the Offutt School of Business at Concordia College in Moorhead, Minnesota. Aziz teaches classes in Agricultural Finance, Agribusiness Management, Corporate Finance, Money and Banking, and International Studies. His research includes precision farming, agricultural best practices, and regional weather conditions that impact agriculture in the Northern plains. He teaches courses on Asia and leads college students on cultural immersion experiences to India and Nepal. He is the President and co-founder of a non-profit organization (Begunahi Foundation) dedicated to educating and empowering underprivileged women in India.

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The use of whey in Colombia – Prof. María Ximena Quintanilla Carvajal

- History
- Production processes: from cheese to packages
- Nutritional aspects of dairy proteins: from the lab to a spin-off.

Course readings and materials:

- Whey Proteins, Editor(s): Hilton C. Deeth, Nidhi Bansal, Academic Press, 2019, ISBN 9780128121245.
- G. Rabaioli Rama, D. Kuhn, S. Beux, M. J. Maciel, C. F. Volken de Souza, 2019. Potential applications of dairy whey for the production of lactic acid bacteria cultures, International Dairy Journal, 98: 25-37
- Aragón-Rojas, S; Hernández-Sánchez, H and Quintanilla-Carvajal, M.X. (2018). Multifunctional Role of the Whey Culture Medium in the Spray-Drying Microencapsulation of Lactic Acid Bacteria. Food technology and Biotechnology. Doi No. 10.17113/ftb.56.03.18.5285

Instructor

Dr. María Ximena Quintanilla-Carvajal is Full Professor at the University of La Sabana and Senior



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Researcher by Minciencias. She studied her PhD program in Food Sciences. Her research themes are based on the development of functional foods from micro and nanoencapsulation. María Ximena was a Visiting Scholar of Fulbright at the University of Massachusetts in order to test the bioaccessibility and bioavailability of compounds of interest in food.

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Prerequisites

None.

Method of teaching

- Lectures
- Class discussions
- Group project works
- Guest speakers

Course requirements

- Students are expected to regularly attend online sessions and to actively take part in class debates and case discussions
- Students are expected to be prepared on the assigned readings before the lectures
- Students are expected to deliver individual and group assignments and present it to the class.

Credits

6 ECTS

Grading

Project work	30 %
Final exam	70 %

The in-class assessment will be composed of project work and a final a written exam with multiple-choice questions. The weights on the two parts are 30% project work and 70% final exam.



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Course Schedule – Week 1 (14-18 June)

Date	Time	Topic	Reading/Course Material
Monday, 14 June	8:30- 9:30am	Welcome & Orientation By Cattolica International	n/a
	9:30- 11:30am	Grana Padano and Parmigiano Reggiano: history, tradition and processing (P. 1) Dr Antonio Gallo	See Blackboard
	11:30am- 1:30pm	Viticulture and enology: a trade-off between tradition and innovation (P. 1) Prof. Matteo Gatti	See Blackboard
Tuesday, 15 June	8:30- 11:30am	Viticulture and enology: a trade-off between tradition and innovation (P. 2) Prof. Matteo Gatti	See Blackboard
	11:30am- 1:30pm	Grana Padano and Parmigiano Reggiano: history, tradition and processing (P. 2) Dr Antonio Gallo	See Blackboard
Wednesday, 16 June	8:30- 11:30am	Salumi: a unique itinerary to excellence (P. 1) Prof. Aldo Prandini	See Blackboard
	11:30am- 1:30pm	Grana Padano and Parmigiano Reggiano: history, tradition and processing (P. 3) Dr Antonio Gallo	See Blackboard
Thursday, 17 June	8:30- 10:30am	Viticulture and enology: a trade-off between tradition and innovation (P. 3) Prof. Matteo Gatti	See Blackboard
	10:30am- 1:30pm	Tomato sauce: from the field to the pasta dish (P. 1) Dr Luca Sandei	See Blackboard
Friday, 18 June	8:30- 9:30am	Mock test	See Blackboard
	9:30am- 12:30pm	Tomato sauce: from the field to the pasta dish (P. 2) Dr Luca Sandei	See Blackboard

Course Schedule – Week 2 (14-18 June)

Date	Time	Topic	Reading/Course Material
Monday, 21 June	8:30- 11:30am	Salumi: a unique itinerary to excellence (P. 2) Prof. Aldo Prandini	See Blackboard
	2:00- 4:00pm	The use of whey in Colombia (P. 1) Prof. María Ximena Quintanilla Carvajal	See Blackboard
Tuesday, 22 June	8:30- 11:30am	Food Marketing (P. 1) Prof. Edoardo Fornari	See Blackboard
	11:30am- 12:30pm	Project Work	See Blackboard
Wednesday, 23 June	8:30- 11:30am	Environmental sustainability in the dairy supply chain: the case study of the Grana Padano PDO cheese. Dr. Federico Foldi	See Blackboard
	2:00- 4:00pm	The use of whey in Colombia (P. 2) Prof. María Ximena Quintanilla Carvajal	See Blackboard
Thursday, 24 June	8:30- 11:30am	Food Marketing (P. 2) Prof. Edoardo Fornari	See Blackboard
Friday, 25 June	8:30- 10:30am	Final Test	See Blackboard
	10:30am- 12:30pm	Exploring the Origins of Italian Wines: A Focus on Lombardia Wine Districts Dr. Sara Zambianchi, Lombardy Regional Coordinator of 'Città del Vino'	See Blackboard



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