COURSE MANAGERS

Dr. Francisco Artés-Hernández (Chair)
Dr. Perla Gómez Di Marco (Co-Chair)
Dr. Francisco Artés-Calero (Co-Chair)
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Universidad Politécnica de Cartagena (UPCT). SPAIN
http://www.upct.es/gpostref/

INSTRUCTORS FROM

Agriculture and Agri-Food Canada. Canada
Akdeniz University. Turkey
Al-Azhar University. Egypt
ARO, The Volcani Center. Israel
Chiang Mai University. Thailand
Cornell University. USA
Cranfield University. United Kingdom
Institute of Plant Biotechnology. IBV-UPCT. Spain
Instituto Valenciano de Investigaciones Agrarias. Spain
Katholieke Universiteit Leuven. Belgium
Kindai University. Japan
Michigan State University. USA
Plant Food Research. New Zealand
Shangdong Agricultural University. China
Stellenbosch University. South Africa
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Université Polytechnique de Toulouse. France
University of Florida. USA
University of Lisbon. Portugal
Wageningen University. The Netherlands
World Food Preservation Center® LLC. USA

PRACTICAL INFORMATION

The Course is addressed to Postharvest professionals and pre and post graduate students related to quality and safety assurance, research and extension on production, handling, transport and marketing of whole and fresh-cut fruit and vegetables.

- ✓ The course consists of 50 recorded videos (≅30 min each) organized in 5 Units. Total Course duration is 25 h
- ✓ The videos are available at any time on the *e*-platform and can be watched at the student's convenience
- ✓ Tutoring of each class will be attended by the instructor
- ✓ A simple evaluation test consisting of multichoice questions must be passed after each Unit
- ✓ Supplementary material for each unit will be also available on the *e*-platform
- ✓ An official certificate will be awarded by UPCT
- ✓ **10 free scholarships are available** for students from developing and 'in transition' countries
- ✓ The 'making of' and a sample could be found at https://youtu.be/hlxnkOWdt_o

COURSE ENROLLMENT AND FEES

Registration at any time before and during the Course:
www.upct.es/gpostref/ More info: postharvest@upct.es
¡Take the time you need to complete the Course!
From 15th **January 2019** to 15th **September 2019**.
Registration fees: Professionals: 1,200 €; Students: 600 €; UPCT students: 300 €.

41 INSTRUCTORS FROM:
5 Continents
20 Countries
30 Universities/Research Centers

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Universidad Politécnica de Cartagena

4th Edition

INTERNATIONAL ON-LINE COURSE ON POSTHARVEST AND FRESH-CUT TECHNOLOGIES

15th January to 15th September 2019

UNIT 1. INTRODUCTION AND FUNDAMENTALS (2.5 h)

1. Introduction. Postharvest losses. The Food Preservation Revolution.
Charles Wilson (World Food Preservation Center® LLC, **USA**)

2. Environmental factors affecting postharvest quality and safety.
Francisco Artés-Hernández (UPCT, **Spain**)

3. Composition of fruit and vegetables. Nutritional quality.
Luis Cisneros-Zevallos (Texas A&M University, **USA**)

4. Physiology and biochemistry of fruit and vegetables.
Inmaculada Recasens (Universidad de Lleida, **Spain**)

5. Preharvest factors affecting postharvest quality and safety.
Perla Gómez (Institute of Plant Biotechnology -UPCT), **Spain**)

UNIT 1 multichoice questions Test

UNIT 2. HORTICULTURAL QUALITY AND MATURATION (5 h)

6. Ethylene and maturation.
Daniel Valero (Universidad Miguel Hernández, **Spain**)

7. Maturity Indices and quality attributes determination.
Giancarlo Colelli (Università degli Studi di Foggia, **Italy**)

8. Nondestructive quality measurement.
María Luisa Amodio (Università degli Studi di Foggia, **Italy**)

9. Strategies to inhibit synthesis and action of ethylene during postharvest.
Chris Watkins (Cornell University, **USA**)

10. Strategies to remove ethylene during postharvest.
Francisco Artés-Hernández (UPCT, **Spain**)

11. Postharvest pathology.
Lluís Palou (Instituto Valenciano de investigaciones Agrarias, **Spain**)

12. Postharvest physiological disorders.
Juan Pablo Fernández-Trujillo (UPCT, **Spain**)

13. Postharvest biotechnology.
Jean Claude Pech (University of Toulouse, **France**)

14. Biological control of postharvest diseases.
Samir Droby (ARO, The Volcani Center, **Israel**)

15. Modelling postharvest quality.
Bart Nicolaï (Katholieke Universiteit Leuven, **Belgium**)

UNIT 2 multichoice questions Test

UNIT 3. COLD STORAGE ENGINERING & TECHNOLOGY (5 h)

16. Cooling techniques.
Antonio López-Gómez (UPCT, **Spain**)

17. Pre-cooling systems.
María Teresa Sánchez-Pineda (Universidad de Córdoba, **Spain**)

18. Postharvest ethylene application techniques.
Francisco Artés (UPCT, **Spain**)

19. Controlled atmosphere storage.
Mustafa Erkan (Akdeniz University, **Turkey**)

20. Modified atmosphere packaging.
Randy Beaudry (Michigan State University, **USA**)

21. Dynamic controlled atmosphere storage.
Pieter Verboven (Katholieke Universiteit Leuven, **Belgium**)

22. Postharvest packaging design.
Bárbara Teruel (Universidad de Campinas, **Brazil**)

23. Refrigerated air and truck transportation of horticultural produce.
Victor H. Escalona (Universidad de Chile, **Chile**)

24. Refrigerated maritime transportation of horticultural produce.
Leo Lukase (Wageningen University, **The Netherlands**)

25. Sensors for postharvest quality assessment.
Belén Diezma (Universidad Politécnica de Madrid, **Spain**)

UNIT 3 multichoice questions Test

UNIT 4. POSTHARVEST HANDLING SYSTEMS (7 h)

26. Postharvest handling systems: Citrus fruit.
Mark Ritenour (University of Florida, **USA**)

27. Postharvest handling systems: Table grapes.
Luis Luchsinger (Universidad de Chile, **Chile**)

28. Postharvest handling systems: Berries.
Victor H. Escalona (Universidad de Chile, **Chile**)

29. Postharvest handling systems: Pome fruits.
Domingos Almeida (University of Lisbon, **Portugal**)

30. Postharvest handling systems: Stone fruits.
Peter Toivonen (Agriculture and Agri-Food Canada, **Canada**)

31. Postharvest handling systems: Pomegranates.
Linus Opara (Stellenbosch University, **South Africa**)

32. Postharvest handling systems. Fruit vegetables: tomato, pepper, eggplant. Mostafa Zaki Sultan (Al-Azhar University, **Egypt**)

33. Postharvest handling systems. Fruit vegetables: melon, watermelon, cucumber. Victor Rodov (ARO The Volcani Center, **Israel**

34. Postharvest handling systems: Leafy and stem vegetables.
Perla Gómez (Institute of Plant Biotechnology -UPCT, **Spain**)

35. Postharvest handling systems: Bulb and inflorescence vegetables.
María del Carmen Alamar (Cranfield University, **United Kingdom**)

36. Postharvest handling systems: Pineapple and exotic fruits.
Quingguo Wang (Shangdong Agricultural University, **China**)

37. Postharvest handling systems: Banana.
Edmundo Mercado (Universidad de Querétaro, **Mexico**)

38. Postharvest handling systems: Mango and papaya.
Sarana Sommano (Chiang Mai University, **Thailand**)

39. Postharvest handling systems: Kiwifruit and avocado.
Allan Woolf (Plant Food Research, **New Zealand**)

UNIT 4 multichoice questions Test

UNIT 5. FRESH-CUT FRUIT AND VEGETABLES (5.5 h)

40. Fresh-cut fruit and vegetables. Definition, physiology and biochemistry.
Jeffrey K. Brecht (University of Florida, **USA**)

41. Fresh-cut. Unit operations & equipment: vegetables.
Francisco Artés (UPCT, **Spain**)

42. Fresh-cut. Unit operations & equipment: fruits.
Giancarlo Colelli (Università degli Studi di Foggia, **Italy**)

43. Fresh-cut. Safety issues.
Hidemi Izumi (Kindai University, **Japan**)

44. Fresh-cut. Genomics - volatiles emission.
Antonio Ferrante (Università degli Studi di Milano, **Italy**)

45. Fresh-cut. Water sanitation: Chlorine and alternatives.
Francisco Artés-Hernández (UPCT, **Spain**)

46. Fresh-cut. Alternative treatments: UV-C & gases.
Perla Gómez (Institute of Plant Biotechnology -UPCT, **Spain**)

47. Fresh-cut plant processing design.
Francisco Artés-Hernández (UPCT, **Spain**)

48. Byproduct revalorization in the postharvest & fresh-cut industry.
Encarna Aguayo (UPCT, **Spain**)

49. Minimal processing of plant products: smoothies, purees, etc
Ginés B. Martínez-Hernández (UPCT, **Spain**)

50. Future research needs in Postharvest and Fresh-cut Technologies. In Memoriam of Adel Kader. **Francisco Artés-Hernández, Giancarlo Colelli & Luis Cisneros-Zevallos**

UNIT 5 multichoice questions Test

*Subjected to small changes if considered