

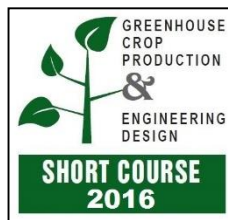


THE UNIVERSITY OF ARIZONA

College of Agriculture
& Life Sciences

Controlled Environment Agriculture Center

Department of Agricultural &
Biosystems Engineering
School of Plant Sciences



Controlled Environment Agriculture Center

1951 East Roger Road

Tucson, Arizona 85719-1178

Ph: 520-626-9566 Fx: 520-626-1700

email: ceac@ag.arizona.edu

<http://ag.arizona.edu/ceac/>

2016 Short Course Program
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2016 Greenhouse Crop Production & Engineering Design Short Course March 20 - 25, 2016

Located at the Westward Look Wyndham Grand Resort and Spa
245 East Ina Road, Tucson, Arizona 85704

<http://ceac.arizona.edu/greenhouse-crop-production-engineering-design-short-course>

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Sunday, March 20, 2016, Afternoon

Arrival, Set-Up, Registration, Welcome Reception and 'Get Acquainted' Day

2:00 – 5:30 pm	Exhibitor Set-Up
3:30 – 6:00 pm	Registration Table Open
3:30 pm	Exhibitor Gallery Open until 7:30 pm
5:30 pm	Cash Bar Opens
5:30 – 7:30 pm	Welcome Reception
7:30 pm	Invited Speakers Meeting

Monday, March 21, 2016, Morning

Moderator: Merle Jensen

“Plant Production I within Hydroponics & Controlled Environments”

7:00 – 8:00 am	Breakfast
8:00 – 8:15 am	Welcome and Introductions: Gene Giacomelli
8:15 – 9:00 am	11 Critical Factors to Consider When Producing Under Cover Dr. Merle Jensen, Greenhouse Vegetable Consultants
9:00 – 9:45 am	Tomato Varieties for Greenhouse Dr. Pat Rorabaugh, University of Arizona
9:45 – 10:30 am	Leafy Crop Varieties for Greenhouse Dr. Mike Evans, University of Arkansas
10:30 – 10:45 am	Break - Visit your Exhibitors
10:45 – 11:15 am	Discussion of Previous Lectures - Question & Answers
11:15 – 11:45 am	6, 5-minute Exhibitor presentations
11:45 – 12:00	Announcements
12:00 – 1:00 pm	Lunch

Monday, March 21, 2016, Afternoon

Moderator: Pat Rorabaugh

“Plant Production II within Hydroponics & Controlled Environments”

1:00 – 1:45 pm	Integrated Pest Management Karin Tifft, Greenhouse Vegetable Consultants, LLC
1:45 – 2:00 pm	Disinfectants Karin Tifft, Greenhouse Vegetable Consultants, LLC
2:00 – 2:45 pm	Greenhouse Pest Problems: Common insects, mites & diseases Dr. Stacy Tollefson
2:45 – 3:15 pm	Discussion of Previous Lectures - Question & Answers
3:15 – 3:30 pm	Break, Visit your Exhibitors
3:30 – 3:45 pm	3, 5-minute Exhibitor presentations
3:45 – 4:30 pm	Plant Nutrition Basics Dr. Pat Rorabaugh
4:30 – 5:15 pm	Working with Substrates – chemical and physical properties Dr. Mike Evans, The University of Arkansas
5:15 – 5:45 pm	Discussion of Previous Lectures - Question & Answers

Dinner – on your own

Tuesday, March 22, 2016, Morning

Moderator: Murat Kacira

“Lighting for Growing Crops in Controlled Environments”

7:00 – 8:00 am	Breakfast
7:55 – 8:00 am	Welcome & Announcements
8:00 – 8:45 am	Greenhouse Structures & Glazing Dr. Murat Kacira, University of Arizona
8:45 – 9:30 am	Plant Lighting Basics and Applications Dr. Ricardo Hernandez, North Carolina State University
9:30 – 9:45 am	Discussion of Previous Lectures - Question & Answers
9:45 – 10:00 am	3, 5-minute Exhibitor presentations
10:00 – 10:15 am	Break, Visit your Exhibitors
10:15 – 11:00 am	LED Lighting for Controlled Environment Agriculture Dr. Rebecca Knight, Illumitex, Inc.
11:00 – 11:45 am	Business Lighting Talk Chris Higgins, Hort Americas
11:45 – 12:00 pm	Discussion - Question & Answers
12:00 – 1:00 pm	Lunch

Tuesday, March 22, 2016, Afternoon

Moderator: Kevin Fitzsimmons

“Alternative Systems and Crops for Controlled Environments”

1:00 – 1:45 pm	Intro to Aquaponics Dr. Kevin Fitzsimmons, University of Arizona
1:45 – 2:30 pm	An Engineers View of Recirculating Aquaculture and Aquaponic Systems Dr. James Ebeling
2:30 – 3:00 pm	Discussion of Previous Lectures - Question & Answers
3:00 – 3:15 pm	Coffee Break
3:15 – 4:00 pm	Greenhouse Strawberry Production Mark Kroggel, University of Arizona
4:00 – 4:45 pm	Growing Crops in High Tunnels Ursula Schuch, University of Arizona
4:45 – 5:15 pm	Discussion of Previous Lectures - Question & Answers

Dinner – On Your Own

Wednesday, March 23, 2016, Morning

Moderator: Gene Giacomelli

“Indoor Growing Session”

7:00 – 8:00 am	Breakfast
7:55 – 8:00 am	Welcome & Announcements
8:00 – 8:45 am	Introduction to Growing Plants Indoors Dr. Ricardo Hernandez, North Carolina State University
8:45 – 9:30 am	Getting Started on Urban Farming Paul Hardej, Illumitex, Inc.
9:30 – 10:00 am	Discussion of Previous Lectures - Question & Answers
10:00 – 10:15 am	Break Visit your Exhibitors
10:15 – 11:00 am	Building an AgTech Startup Company Jamie Byron, Grove Labs
11:00 – 11:45 am	Ecological Controlled Environment Farming Jamie Byron, Grove Labs
11:45 – 12:00 pm	Discussion of Previous Lectures - Question & Answers
12:00 – 1:00 pm	Lunch

Wednesday, March 23, 2016, Afternoon

Moderator: Merle Jensen

“Experiences in Production, Marketing and Business Establishment”

1:00 – 1:45 pm	Greenhouse Food Safety Kurt Nolte, University of Arizona
1:45 – 2:30 pm	Organic Seedling Production Jose Chen Lopez, Premier Tech Horticulture
2:30 – 3:00 pm	Discussion of Previous Lectures - Question & Answers
3:00 – 3:15 pm	Break, Visit your Exhibitors
3:15 – 4:00 pm	Succeeding as a Small Greenhouse Grower Todd & Tricia McPhail, Lynden, WA, McPhails Greenhouses
4:00 – 4:45 pm	Hi Tech- Hi Touch: From Farm Markets to Supermarkets Merle Jensen, Greenhouse Vegetable Consultants, LLC
4:45 – 5:15 pm	Discussion of Previous Lectures - Question & Answers

Dinner – On Your Own

Thursday, March 24, 2016**Hands-on Workshops at CEAC**

7:00 – 8:00 am Breakfast
 8:00 am Bus Leaves to CEAC for Workshops (Same Workshops Repeated 3 Times)

8:30 – 10:15 am **ROUND ONE WORKSHOPS [select one to attend in each of 3 rounds]**

- Basics of Fertigation : **Steve Poe, Neal Barto**
- Tomato Crop Maintenance Using High Wire Systems : **Pat Rorabaugh**
- Growing Lettuce and Herbs in Floating System: **Will Kacheris**
- Sensors and Controls Basics : **Murat Kacira**
- Strawberry Greenhouse: **Mark Kroggel**

10:15 – 12:00 pm **ROUND TWO WORKSHOPS [select one workshop from list above]**

12:00 – 1:00 pm Lunch at CEAC

1:00 – 2:45 pm **ROUND THREE WORKSHOPS [select one workshop from list above]**

2:45 – 3:45 pm **Extra Round – [select any/all]**

- Mobile Mushroom Unit : **Barry Pryor**
- Informal Meetings/Discussions for previous Workshops [attend any/all]
 - Tomato Crop Production- **Pat Rorabaugh**
 - Lettuce/Herb Production- **Will Kacheris**

3:45 pm Visit to Aquaponics Greenhouse
Dr. Kevin Fitzsimmons

5:30 pm Return to Westward Look

Dinner – On Own

Friday, March 25, 2016

7:15 – 8:15 am Breakfast

OPTIONAL COMMERCIAL GREENHOUSE TOUR (Fee Required)

Wholesum Family Farms
 2986 W Frontage Rd,
 Amado, AZ
<http://www.wholesumharvest.com/>

8:30 am Leave Hotel for Commercial Greenhouse Tour
 Lunch Box lunch provided on return route
 2:00 pm Estimated return to Hotel