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

Sponsored By:

Meister Media Worldwide

Hort Americas, LLC

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

“Plant Production I within Hydroponics & Controlled Environments”

Moderator: Merle Jensen

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

“Plant Production II within Hydroponics & Controlled Environments”

Moderator: Pat Rorabaugh

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
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 – 8:00 am</td>
<td>Breakfast</td>
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<td>7:55 – 8:00 am</td>
<td>Welcome &amp; Announcements</td>
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<td>8:00 – 8:45 am</td>
<td>Greenhouse Structures &amp; Glazing</td>
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<td>Dr. Murat Kacira, University of Arizona</td>
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<td>8:45 – 9:30 am</td>
<td>Plant Lighting Basics and Applications</td>
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<td>Dr. Ricardo Hernandez, North Carolina State University</td>
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<td>9:30 – 9:45 am</td>
<td>Discussion of Previous Lectures - Question &amp; Answers</td>
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<td>9:45 – 10:00 am</td>
<td>3, 5-minute Exhibitor presentations</td>
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<td>10:00 – 10:15 am</td>
<td>Break, Visit your Exhibitors</td>
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<td>10:15 – 11:00 am</td>
<td>LED Lighting for Controlled Environment Agriculture</td>
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<td>Dr. Rebecca Knight, Illumitex, Inc.</td>
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<td>11:00 – 11:45 am</td>
<td>Business Lighting Talk</td>
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<td>Chris Higgins, Hort Americas</td>
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<td>11:45 – 12:00 pm</td>
<td>Discussion - Question &amp; Answers</td>
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<td>12:00 – 1:00 pm</td>
<td>Lunch</td>
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**Tuesday, March 22, 2016, Afternoon**

**Moderator: Kevin Fitzsimmons**

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<th>Time</th>
<th>Event</th>
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<tr>
<td>1:00 – 1:45 pm</td>
<td>Intro to Aquaponics</td>
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<td>Dr. Kevin Fitzsimmons, University of Arizona</td>
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<td>1:45 – 2:30 pm</td>
<td>An Engineers View of Recirculating Aquaculture and Aquaponic Systems</td>
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<td>Dr. James Ebeling</td>
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<td>2:30 – 3:00 pm</td>
<td>Discussion of Previous Lectures - Question &amp; Answers</td>
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<td>3:00 – 3:15 pm</td>
<td>Coffee Break</td>
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<td>3:15 – 4:00 pm</td>
<td>Greenhouse Strawberry Production</td>
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<td>Mark Kroggel, University of Arizona</td>
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<td>4:00 – 4:45 pm</td>
<td>Growing Crops in High Tunnels</td>
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<td>Ursula Schuch, University of Arizona</td>
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<td>4:45 – 5:15 pm</td>
<td>Discussion of Previous Lectures - Question &amp; Answers</td>
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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](http://www.wholesumharvest.com/)

Wholesum Family Farms
2986 W Frontage Rd,
Amado, AZ

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

**End of Official Short Course Schedule**