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

https://ag.arizona.edu/ceac/Spring-Short-Course

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

7:00 – 8:00 am  Breakfast,
8:00 – 8:15 am  Welcome and Introductions: Gene Giacomelli

“Plant Production I within Hydroponics & Controlled Environments”
Moderator: Gene Giacomelli

8:15 – 9:00 am  Growing systems and the crops they support
Dr. Merle Jensen

9:00 – 9:45 am  Plant Factory & Urban Agriculture– Challenges & Opportunities
Dr. Chieri Kubota

9:45 – 10:30 am  Seeds & crop varieties – importance of a good start
Dr. Merle Jensen, Greenhouse Vegetable Consultants, LLC

10:30 – 10:45 am  Break - Visit your Exhibitors
10:45 – 11:15 am  Discussion - Question & Answers
Jensen, Kubota, and Giacomelli

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  Greenhouse Pest Problems: Common insects, mites & diseases
Dr. Stacy Tollefson

1:45 – 2:30 pm  Integrated Pest Management
Karin Tifft, Greenhouse Vegetable Consultants, LLC

2:30 – 2:45 pm  Disinfectants
Karin Tifft, Greenhouse Vegetable Consultants, LLC

2:45 – 3:15 pm  Discussion - Question & Answers
Rorabaugh, Tifft, Tollefson

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  Pollination & Bee Management
TBA

5:15 – 5:45 pm  Discussion - Question & Answers
Rorabaugh

Dinner – on your own
Tuesday, March 22, 2016, Morning

7:00 – 8:00 am  Breakfast
7:55 – 8:00 am  Welcome & Announcements

“Systems & Components I Controlled Environments”

Moderator: Murat Kacira

8:00 – 8:45 am  Greenhouse Structures & Design

Dr. Murat Kacira

8:45 – 9:30 am  Greenhouse Site Selection

Dr. Pat Rorabaugh

9:30 – 9:45 am  Discussion - Question & Answers

Kacira, Rorabaugh

9:45 – 10:00 am  3, 5-minute Exhibitor presentations

10:00 – 10:15 am  Break, Visit your Exhibitors

10:15 – 11:00 am  Plant Lighting Basics and Applications

TBA

11:00 – 11:45 am  Environmental Control

Dr. Gene Giacomelli

11:45 – 12:00 pm  Discussion - Question & Answers

Hernandez, Giacomelli

12:00 – 1:00 pm  Lunch
Tuesday, March 22, 2016, Afternoon
Moderator: Gene Giacomelli

1:00 – 1:45 pm  Tunnels: From Hoop Houses to High Technology
John Hoogeboom, Rough Greenhouses

1:45 – 2:30 pm  Energy Conservation & Strategies
Dr. Gene Giacomelli

2:30 – 3:00 pm  Discussion - Question & Answers
Giacomelli and Hoogeboom

3:00 – 3:15 pm  Break Visit your Exhibitors

3:15 – 4:00 pm  Greenhouse Controls & Fertigation
TBA

4:00 – 4:45 pm  Alternative Energy Integrated CEA Systems
Dr. Murat Kacira

4:45 – 5:15 pm  Discussion - Question & Answers
Giacomelli, Kacira
Wednesday, March 23, 2016, Morning

7:00 – 8:00 am  Breakfast
7:55 – 8:00 am  Welcome & Announcements

“Alternative Systems and Crops for Controlled Environments”
Moderator: Kevin Fitzsimmons

8:00 – 8:45am  Intro to Aquaponics in Arizona
   Dr. Kevin Fitzsimmons
8:45 – 9:30am  An Engineers View of Recirculating Aquaculture and Aquaponic Systems
   Dr. James Ebeling
9:30 – 9:45am  Discussion - Question & Answers
   Fitzsimmons, Ebeling
9:45 – 10:00am  Coffee Break
10:00 – 10:45am  TBA
   TBA
10:45 – 11:30am  Greenhouse Food Safety
   TBA
11:30 – 12:00pm  Discussion - Question & Answers
   Kubota, Kroggel, Nolte
12:00 – 1:00 pm  Lunch
Wednesday, March 23, 2016, Afternoon

“Experiences in Production, Marketing and Business Establishment”

**Moderator: Merle Jensen**

1:00 – 1:45 pm  Business Basics
  
  **TBA**

1:45 – 2:30 pm  Day In The Life Of A Grower
  
  **TBA**

2:30 – 3:00 pm  Discussion - Question & Answers
  
  **TBA**

3:00 – 3:15 pm  Break, Visit your Exhibitors

3:15 – 4:00 pm  Succeeding as a Small Greenhouse Grower
  
  **TBA**

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 - Question & Answers
  
  **Jensen, TBA**

Dinner – On Your Own
Thursday, March 24, 2016

Hands-on Workshops at CEAC

7:00 – 8:00 am  Breakfast
8:00 am  Bus Leaves hotel for CEAC Workshops

8:30 – 10:15 am  ROUND ONE WORKSHOPS  [select one]
- Basics of Fertigation: Steve Poe, Neal Barto
- Tomato Crop Maintenance Using High Wire Systems: Pat Rorabaugh
- Growing Lettuce and Herbs in Floating System: TBA
- Sensors and Controls Basics: Murat Kacira,
- My First Greenhouse: Gene Giacomelli

10:15 – 12:00 pm  ROUND TWO WORKSHOPS  [select one]
- Basics of Fertigation: Steve Poe, Neal Barto
- Tomato Crop Maintenance Using High Wire Systems: Pat Rorabaugh
- Growing Lettuce and Herbs in Floating System: TBA
- Sensors and Controls Basics: Murat Kacira
- My First Greenhouse: Gene Giacomelli

12:00 – 1:00 pm  Lunch at CEAC

1:00 – 2:45 pm  ROUND THREE WORKSHOPS  [select one]
- Basics of Fertigation: Steve Poe, Neal Barto
- Tomato Crop Maintenance Using High Wire Systems: Pat Rorabaugh
- Growing Lettuce and Herbs in Floating System: TA
- My First Greenhouse: Gene Giacomelli
2:45 – 4:45 pm  **Extra Round – [select any/all]**

- Applications of LED Lighting: **TBA**
- Grafting Demonstration: **Chieri Kubota**
- Informal Meetings/Discussions for previous Workshops [attend any/all]
  - Tomato Crop Production: **Pat Rorabaugh**
  - Lettuce/Herb Production: **TBA**

4:45 pm  Visit to Aquaponics Greenhouse

  **Dr. Kevin Fitzsimmons**

6:30 pm  Return to Westward Look

Dinner – On Own

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**Friday, March 27, 2015**

7:00 – 8:00 am  Breakfast

**OPTIONAL COMMERCIAL GREENHOUSE TOUR (Fee Required)**

**TBA**

8:00 am  Leave Hotel for Commercial Greenhouse Tour

Lunch  Box lunch provided on return route

2:30 pm  Estimated return to Hotel

Dinner – on own