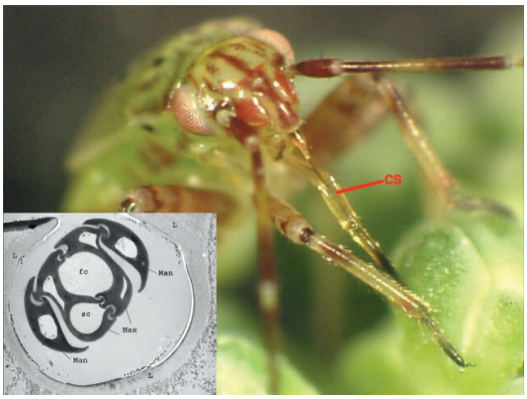
NC STATE UNIVERSITY Department of Entomology and Plant Pathology presents....



3 Synchronous Online Insect-Rearing Courses

1. **Insect Diet Science and Technology**
Offered October 2020, January 2021, April 2021, July 2021

2. **Insect Rearing Systems Operations**
Offered November 2020, February 2021, May 2021, August 2021

3. **Design and Control of Insect Rearing Systems**
Offered December 2020, March 2021, June 2021, September 2021

Classes meet **Tuesdays and Thursdays from 3-5:30 p.m. (Eastern)** for four (4) weeks, for a total of 20 hours of instruction per course.

Content for all three courses is based on Allen Carson Cohen's books, *Insect Diets: Science and Technology and Design, Operation,* and *Control of Insect Rearing Systems* (both from CRC Press) plus recent and current research in the Insect Rearing Education and Research Program at North Carolina State University.

Each course is limited to 15 participants per class (to permit maximum interactions).

Registration Fee

$250 per participant for each course.
(includes PDFs of course materials, including lecture notes)

Recommended Supplementary Reading

Cohen, A. C. 2015 *Insect Diets: Science and Technology*. 2nd Edition. CRC Press. Boca Raton, FL.

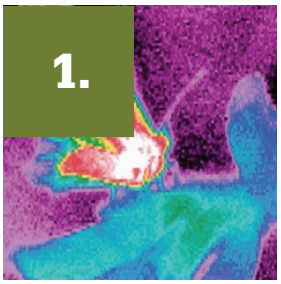
Cohen, A. C. 2020. *Design, Operations, and Control of Insect Rearing Systems*. CRC Press. Boca Raton, FL.

Your Instructor

Professor Allen Carson Cohen, Department of Entomology and Plant Pathology, NC State University

Dr. Allen Carson Cohen is currently a research professor in the Department of Entomology and Plant Pathology at North Carolina State University where he coordinates the Insect Rearing Education and Research Program. He has nearly 200 publications, including two editions of *Insect Diets: Science and Technology and Design, Operation, and Control of Insect Rearing Systems* (CRC Press). He also has numerous peer-reviewed publications and book chapters discussing insect biochemistry and physiology, nutrition, ecology, and insect rearing. He has served as section editor for *Journal of Insect Science, Journal of Entomological Science*, and is currently serving as subject editor (Insect Rearing and Feeding Biology) for the journal *Insects*. His current research interests are optimization of insect rearing systems and metabolic and fitness responses to stress.

Course Content



Insect Diet Science and Technology

- Types of insect diets
- Feeding biology: mouthparts, digestive systems and metabolism, nutrition and diet presentation
- Characteristics of successful diets
- Diet-making equipment and procedures
- Diet and diet component preservation
- Development and improvement of diets

Insect Rearing Systems Operations

- Historical basis of modern/current rearing systems
- Equipment in rearing system: physical principles
- Equipment in rearing systems: kinds of equipment
- Rearing systems as artificial ecological niches
- Interactions of rearing system components
- Issues of management, containment and safety in rearing systems
- Survey and summary of rearing systems:
- Lepidoptera, Diptera, Coleoptera, Hemiptera, “minor systems”

Design and Control of Insect Rearing Systems

- Reducing error, variability and uncertainty in your rearing system
- Optimizing rearing system components
- Process control in your rearing system
- Design of experiments: practical applications in rearing systems
- Developing and using control charts
- Quality control, stress and fitness

To register or for more information, go to **ncsu.edu/opd**