

Short Course Overview

The Short Course has both a Basic (Core) curriculum and tracks of Electives, which provides something of interest to all beekeepers, from the new-to-beekeeping to bee instructors, and everything in between. Green-minded beekeepers, top-bar hive aficionados, queen-rearers, and anyone who yearns for bee knowledge will find something for them.

New this year: the Core Level has an optional examination for Certification. Students wishing to receive the Core Beekeeping Certification must pass both the written and field tests.

There are no tests for the electives. Anyone who enrolls in the Short Course will receive a Letter of Completion at the end of the course.

Core Classes

Core classes are intended for new beekeepers, those who have just started beekeeping in the past three or four years, or others who would just like to review some topics. Core classes have information that may be covered on the certificate test. Certificate classes include biology of the individuals in the hive, biology of the colony, diseases I & II, noninfectious disorders in the hive, good neighbor policies and BMP, honey bee nutrition, basics of processing honey, fall and winter management, swarming and spring management, and products of the hive.

Classes in the Apiary

A series of basic classes in the apiary, such as reading a frame, finding a queen, great patterns, poor patterns, common hive problems (drone-laying workers, drone-laying queens, wax moths, hive beetles, Varroa mites, mice, etc.), combining hives, splitting hives, how to replace queens, supersedure and swarm cells, feeding hives, etc.

One-on-One in the Apiary Field Certificate Test (Monday and Tuesday til 3:15PM)

Completely optional and at no extra cost—sign up for schedules to meet one-on-one (up to four-on-one) with a beekeeper in the beeyard. Students must be able to demonstrate that they can light their smokers; open a hive; remove a frame; and identify workers, drones, eggs, larva, pupa, pollen, and honey/nectar. If queen is on the frame, student must be able to identify it. Students must be able to pick up a drone. The Field Test is a requirement for Core Beekeeping Certificate.

Core Beekeeping Certificate Test (Tuesday 3:45PM)

Completely optional and at no extra cost—exam with about 25 questions—based on the core classes. Students need an 80% to pass.

Reception and Certificate Ceremony (Tuesday 7:00PM)

Join all of us for a honey ice cream social followed by a graduation address by Dewey Caron and presentation of certificates.

Electives

Electives are for those who have been keeping bees for several years or are looking for more specialized or advanced topics. Classes are offered on top-bar hives, value-added products, sideliners interest, queen rearing, growing green bees, microscopes and bee biology and behaviour.

Top-Bar Hives

The beeyard part of Top-Bar Hive instruction is limited to 25 people. Please reserve your spot at registration. Once the first session is full, we will offer afternoon sessions run by other beekeepers.

Train the Trainer

The Train the Trainer day-long session is designed for instructors and leaders of local, regional, and state-wide beekeeper organizations. You must reserve your spot on the registration form. Attendees are expected to stay in the session. Please bring a sample syllabus to critique.

Microscope

Microscope sessions are planned for every day throughout the Short Course and Conference. From microscope basics to dissections to Nosema counts, you are invited to expand your knowledge and shrink your vision to focus on the smaller parts of beekeeping.

Core Class Descriptions

SC101 Siting Hives, Good Neighbors, & BMP

Honey bees can be kept almost anywhere there are nectar and pollen producing flowering plants, but what are the ideal spots? How should the hives be positioned? Sun or shade? And, more importantly, what can you do to get along with your neighbors? Are there any special considerations for urban beekeepers? What are Best Management Practices (BMPs)? Are there local ordinances regarding beekeeping?

SC102 Equipment & Construction

After a quick review of standard bee equipment, discover what other equipment is available to manage hives. Explore queen excluders, frame spacers, and different types of veils and hive feeders. Wax foundation or plastic? What are some tips on assembling and painting equipment?

SC111 Biology of Individuals in the Hive

Learn about the development and anatomy of the three castes of bees: workers, drones, and queens. What colors do bees see? How are queens produced and mated? How do the bees sting? This session covers the individuals in the hive.

SC112 Biology of the Colony

Honey bees are social insects; collectively they regulate temperature, rear brood, and reproduce (swarm). As a worker bee ages, she takes on different tasks, such as cell cleaning, nursing young, queen tending, comb building, food processing, undertaking, ventilation, guarding, and foraging. Special scout bees will recruit others to forage with a waggle dance. Discover how 60,000 females can work together with no leader.

SC121 Reading Hives & Frames

Beekeepers must know what is going on in their hives. What can you discover by just watching the hive? When you open a hive, what do you look for? What does a good frame look like, and what is bad? What can the frame tell you about the state of the hive? Let's open the hive and see. *Meet in Apiary.*

SC122 Hive that Swarm

Learn the basics of swarming and observe ways to hive a swarm of bees that miraculously appears in the backyard. *Meet in Apiary.*

SC123 Nucs, Splitting Hives, & Combining Hives

Nucs are just small hives, but they are extremely useful to start a new hive, control swarming, hive a swarm, and raise a new queen. You can also control swarming and create a new hive by splitting a hive. But, what can you do if you have a weak hive or too many hives? All of these techniques will be demonstrated in this session. *Meet in Apiary.*

SC124 Management through the Seasons

What are your beekeeping tasks through the year? When should you feed the bees or stop feeding them? How do you winterize your bees? When should you put on honey supers? Or, take them off? When do I need to be concerned about pests? Put together a timeline and checklist for your hive. *Meet in Apiary.*

SC131 Feeding Bees

Honey bees require food to survive and thrive. Vincent Aloyo, EAS Master Beekeeper, will discuss if and when you should feed your bees. Aloyo will describe different scenarios under which you may choose to feed your bees, various food stuffs (sugar syrup, high fructose corn syrup, fondant, pollen substitute) that should or should not be fed to your bees and a variety of types of feeders.

SC132 Products of the Hive

The bee hive is often thought of as only a source of honey, but the bees also collect pollen and produce propolis, wax, and royal jelly. Find how the bees make these products and what are their uses.

SC133 Honey Processing

Discover several ways to harvest honey with minimal equipment, with and without an extractor. Join in the live extraction demonstration.

Core Class Descriptions *continued*

SC141 Noninfectious Disorders in the Hive

Unfortunately, things can happen to a hive. Discover the hive pests (larger than mites) and noninfectious disorders in the hive. Queenlessness, laying workers, starvation, overheated bees, chilled brood, spotty brood, wax moths, mice, bears, fire ants, and pesticide kills are all covered in this session.

SC142 Diseases Part 1—Infectious Brood Diseases

Honey bees, similar to other animals, do get sick. As a beekeeper, you must care for your bees. Vincent Aloyo, EAS Master Beekeeper, shows the differences between healthy and sick bees. In the first session of this two session sequence, you will learn to distinguish among several infectious diseases of developing honey bee brood, including American and European foulbrood, sac brood, and chalkbrood. Management and treatment options will be discussed.

SC143 Diseases Part 2—Parasites and Adult Bee Diseases

In this second of a two session series, Vincent Aloyo, EAS Master Beekeeper, will discuss parasites, including tracheal and Varroa mites, and adult bee disorders, such as viruses, Nosema, and Colony Collapse Disorder (CCD). Management and treatment options, where available, will be discussed.

SC151 Take the Core Field Exam

Meet one-on-one (up to four-on-one) with a beekeeper in the beeyard. Be able to demonstrate that you can light a smoker; open a hive; remove a frame; and identify workers, drones, eggs, larva, pupa, pollen, and honey/nectar. You must be able to pick up a drone. A requirement for Core Beekeeping Certificate. *Meet in Apiary.*

SC152 Take the Core Written Exam

Take an exam to evaluate what you know or what you have learned from the Core Classes. A great way to confirm what you know and discover areas that you may want to pursue.

It's Quite
Simple, Really
In Black & White
Bee Culture

1 Year

\$15

2 Years

\$30

3 Years

\$45

CASH ONLY
At This Meeting

HONEY EXCHANGE

WANT TO TRY OUT SOME DIFFERENT HONEYS? EXCHANGE UP TO THREE JARS OF HONEY WITH ANOTHER BEEKEEPER!

DROP OFF UP TO THREE JARS OF HONEY, CLEARLY LABELED, WHEN YOU ARRIVE AT THE REGISTRATION DESK. YOU WILL RECEIVE A TICKET FOR EACH JAR. AFTER NOON ON FRIDAY, BRING YOUR TICKETS AND EXCHANGE THE TICKETS FOR JARS OF HONEY.

IT'S AS SIMPLE AS THAT.

Elective Class Descriptions

Top-Bar Hives

SC171 Top-Bar Hands-On Management

In the apiary. See first-hand how to build top-bar hives, syrup feeders, queen cages, pollen traps, and queen excluders. View the correct way to install bee packages, use syrup feeders, get straight comb, handle comb, avoid comb meltdowns, get the new colony established, pick the correct hive site, avoid blown-over hives, robbing, and get the colony ready for winter. This session is 1 hour 45 minutes.

SC172 Top-Bar Seasonal Management and Other Topics

Wyatt Mangum, author of *Top-Bar Hive Beekeeping: Wisdom and Pleasure Combined*, has built an operation with 200 top-bar hives and managed them for over ten years. Learn colony management: honey production; swarm control; requeening; IPM for varroa, small hive beetle, and wax moths; selecting hygienic bee stock; and comb storage without fumigants. How can you process and package honey from a top-bar hive? This session is 1 hour 45 minutes.

Green Bees, Healthy Bees

SC181 Overview and History of Organic, Natural, & Biodynamic Beekeeping

Biodynamics is a method of organic farming that emphasizes the holistic development and the interrelationships of soil, fauna, and flora as a self-sustaining system. Ben Bowers clarifies the organic, natural, and biodynamic concepts and the history of these approaches.

SC182 Natural Beekeeping and Certified Naturally Grown Requirements

Certified Naturally Grown (CNG) is a nonprofit organization offering certification tailored for small-scale, direct-market farmers and beekeepers using natural methods. Buddy Marterre, EAS Master Beekeeper from North Carolina, expounds the reason that he drafted the standards for the CNG apiary certification program and how it works. Learn about the program's guidance on best practices, the supportive community, and financial advantage. The CNG apiary standard emphasizes management without exposure to synthetic chemical treatments.

SC183 Easy Queen Rearing Techniques, Without Grafting

Warren Graham, second generation beekeeper from the local Chester County Beekeepers Association, has been running a small-scale queen operation for decades. Warren will define a step-by-step and easy way to produce local queens without grafting.

SC184 Local, Russian, Italian, Carniolan, Hygienic...Which Queen Should I Choose?

There are several choices available when it comes to queens. Which race is best? What are the hygienic queen options available now?

Green Solutions for Varroa Control

SC191 Why Treat for Varroa—Pros & Cons

Buddy Marterre, EAS Master Beekeeper from North Carolina, does not treat his hives for Varroa. Explore the pros and cons of treating (or not treating) for Varroa control.

SC192 Three Steps to Healthier Bees: Natural Size Cells, Proper Nutrition, and Local Genetics

Adam Schreiber, Past President of the Philadelphia Bee Guild, has an integrated plan to control Varroa mites that includes natural cell size, proper nutrition, and local genetics—and does use not any chemical treatments. Adam will demonstrate how to establish or regress honey bees to their natural cell size.

SC193 Varroa Control by Breaking the Brood Cycle

For the majority of their lives, Varroa mites are buried under the pupal cappings, making many treatments, such as powdered sugar and oxalic acid only partially effective, unless they are applied repeatedly. Some beekeepers have found that by simply providing a break in the brood cycle, the Varroa mites will be forced into the open and population growth will be curtailed. Steve Repasky, EAS Master Beekeeper and second generation beekeeper from Pittsburgh, shows how making splits, nucs, and simply caging the queen can be a nonchemical tool to control Varroa mites.

Elective Class Descriptions *continued*

Queen Rearing

SC201 Bee Biology for Queen Rearing

In the classroom, study the queen and drone biology, timelines, and background information needed to raise queens.

SC202 Equipment and Setup for Queen Rearing

In the apiary. Set up cell-starters, finishers, and mating nucs. See cloak boards and other queen-rearing devices in operation.

SC203 Grafting

Practice grafting from frames of several races or bees with hygienic traits. The cells will be placed in a starter colony—come back in a few days to check on them or attend **SC204 Check the Queen Cells** to see how many of your grafts took.

SC204 Check the Queen Cells

Pull the bars from the hives to see which grafts took. If you are staying in the area for a while, arrange with Elina L. Niño to pick up your successful queen pupae before they hatch.

Value-Added Products (and Bears)

SC221 Making Creams and Lip Balms with Beeswax

This two session interactive workshop will cover general information and basic steps for making products using beeswax, such as hand creams, foot creams, lotion bars, and lip balms. A live demonstration, making a couple of products, will be part of the workshop which will help attendees see the process first hand so that they are armed with the information needed to experiment on their own after the conference.

SC222 Making Creamed Honey

Tired of your honey dripping off toast and making a mess? Learn how to make creamed or whipped honey that has the consistency of smooth peanut butter. Although liquid honey (also known as 'runny' honey in the UK) is the most frequently offered form of honey in the USA, crystalized honey (creamed or whipped honey)

is the most common form of honey used in Canada, New Zealand, and much of Europe. Made from pure honey, creamed honey contains no cream or other milk products. Learn how to turn your liquid honey into creamed honey from Vincent Aloyo, EAS Master Beekeeper. Then, enjoy creamed honey yourself and have a new product to offer your customers.

SC223 Mead Making 101

Who does not want to know how to make mead? Bob Talkiewicz is an award-winning mead-maker who will share his secrets, not only on how to make mead, but how to make GREAT mead!

SC231 Handmade Soaps Using Honey & Bees Wax Part I

Hand-crafted soaps made using beeswax and honey are a great addition to the beekeepers line of products. Learn the basics of making soap from scratch using lye, fats, water, and your own honey and beeswax.

SC232 Handmade Soaps Using Honey & Bees Wax Part II; Plus Collecting and Using Propolis

Landi Simone will wrapup her hand-made soap discussion. But, don't throw away all that propolis you scrape from your frames! She'll show you how to clean it and use it in your products and as a medicinal extract.

SC235 Building a Bear-Proof Fence

Many areas of North America are plagued by bear damage to hives. Landi Simone will demonstrate her Ft. Knox approach to repelling these honey-loving pests.

Sideliner Topics

SC301 Hobbyist/Sideliner Marketing Techniques

Interested in setting up a road-side stand, selling products at local markets, or finding ways to get your name out to the community? Learn techniques to price your products and display them for optimal sales. Charlie Vorisek, Pennsylvania State Beekeepers Association President, has left his job and gone into beekeeping fulltime. He and his wife, Cathy, make their living from beekeeping at the other end of the state of Pennsylvania, in the Erie area. Find out how they do it.

Elective Class Descriptions *continued*

SC302 Maximizing Honey Production

Michael Palmer manages 600+ colonies for honey. What system does Mike use to manage these hives and maximize the honey production in his Vermont apiaries?

SC303 Considerations for Honey Houses and Extraction Rooms

Dennis Keeney has a two story, gravity fed, extraction facility with heating room located just 60 miles from West Chester. What are some of the things to consider when creating your own area for extraction? Many concepts are the same for small and big alike. Where are the bottlenecks and what can be done? What worked for Dennis—and what didn't?

SC304 Building a Profitable Bee Business

Dan Conlon, and his wife Bonita, run Warm Colors Apiary in western Massachusetts. In addition to regional honey, the Conlons make beeswax candles, offer educational classes, and sell beekeeping supplies. How did Dan grow the business and what were the growing pains? What are the pros and cons and difficulties that he deals with in each of these business sectors?

SC305 Nucs Are My Business

Nucs are not just for increases anymore. Michael Palmer has developed a system for overwintering nucs that works for him in Vermont. One of the ways to wean yourself from the need for outside bees in the early spring is to overwinter nucs using local queens.

SC306 Considerations when Expanding the Number of Hives

Zac Browning is a 4th generation commercial beekeeper with 20,000 hives in Idaho, North Dakota, and California. Although Zac is usually discussing issues with the EPA on pesticides or shepherding funds for research, he has agreed to put himself in the position of a small-scale beekeeper and offer advice on how to expand and grow a bee business.

SC309 Top Five Things to Do to Be Successful in Beekeeping

Michael Palmer and Dennis Keeney offer their advice on building a small-scale bee business. Bring your questions for a panel discussion with these men who have become icons for every beekeeper who meets them.

A Detailed Look at Bees

SC320 Requeening Considerations

Wyatt Mangum, University of Mary Washington, maintains 30 observation hives and has been conducting experimental work with bee behavior and queen cells and swarming. Wyatt will share his observations and the results of some of his experiments. How does the number of attending workers in queen cages affect queen acceptance?

SC321 The Communication Signals in Honey Bee Swarms

Look at the form and function of the six known signals that the bees in a swarm use to coordinate their behavior: waggle dances, stop signals, worker piping signals, buzz runs, streaker flights, and puffs of the Nasonov pheromone.

SC322 How Bees Communicate

Bees communicate with dance languages and mixtures of chemical substances called pheromones. Maryann Frazier, Pennsylvania State University, will translate the languages, elucidate how pheromones are released into the hive or environment, and how they change the physiology and behavior of other bees.

SC323 A Unique Communication Study: House Hunting

Join Tom Seeley to look at how a swarm of bees chooses its new home through a process that includes collective fact-finding, vigorous debate, and consensus building by the scout bees.

Elective Class Descriptions *continued*

A Detailed Look at Pests

SC341 What Do We Know about Varroa Mites

Varroa mites are one of the most serious pests of honey bees and may be one of the main contributors to colony death. What has the latest research shown us about the biology of this mite?

SC342 Small Hive Beetle Biology and Control

The small hive beetle is a bee pest that has infested hives in many areas. How do the bees and beetles interact? When do they become strong enough to take over the hive and make the bees abscond? Debbie Delaney, University of Delaware, will demystify their biology and control methods.

SC343 Understanding Nosema

Nosema ceranae has displaced *Nosema apis* in many areas. How can you tell if bees have a Nosema infection and does Fumagilin-B control it? Also, what does infection with Nosema do to the physiology and behavior of individual bees and how can these changes impact colony health? Holly Holt will discuss these questions. If you want to learn more after this session, join Holly in the microscope room, for M222 Microscopic Insights to Nosema, where you can dissect bees and quantify Nosema infections.

Train the Trainer

SC401 Train the Trainer

In this full day workshop, explore how to conduct an efficient bee school: improve content delivery, maximize student learning, and promote beekeeping. Discuss the right mixture of theory and practice; what makes a bad presentation; teaching young beekeepers; using the BEES network in your bee school; crafting a test; and putting it all together. This workshop is not about what to teach, but how to teach it.

Preregistration is required for the limited number of seats. The workshop is comprehensive—so all participants are expected to remain through the entire day.

Worcester Honey Farms

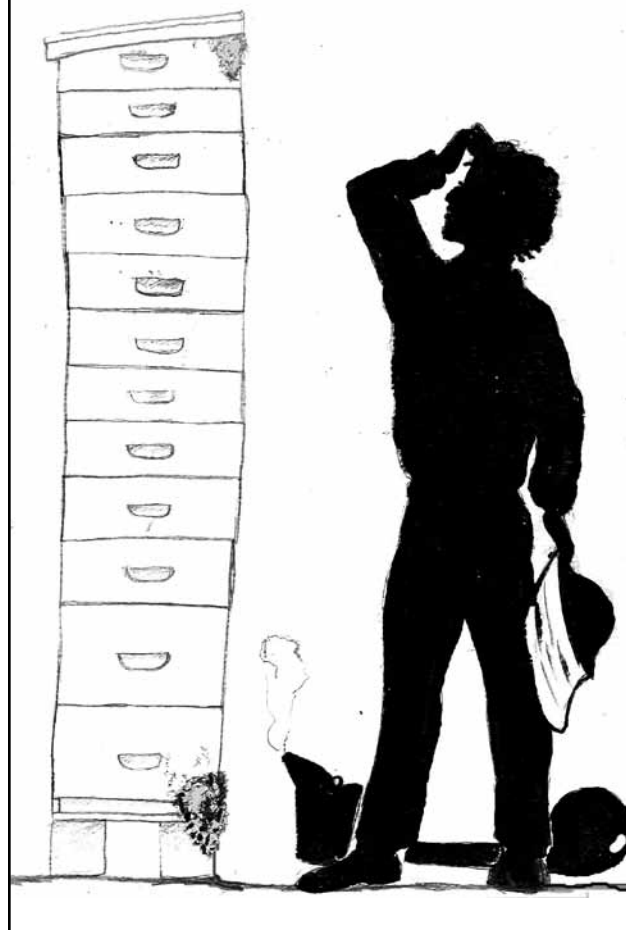
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Hands-on Training
Packages
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Microscope Class Descriptions

(For Both Short Course and Conference)

Seating is limited for these classes and are on a first come basis. You may choose to guarantee your spot by putting your name on the sign-up list at the Registration Desk. Students are invited to bring their own samples of bees, (preserved in Vodka or 70% isopropyl), healthy or suspect, and of pollen from any source that they would like to assess.

M101 Introduction to Microscopes

For students with little or no experience with microscopes, this class reviews basic parts and technique with the compound and stereoscope. With simple maintenance and respectable handling, an average microscope will perform well for 50 years or more. Focusing and protecting the slide are fundamental skills, but students are often unaware of options of illumination systems for different types/thicknesses of subjects.

M201 Microscopes and the Beekeeper

This class is a step up from Microscopy 101. Using pollen samples as the study subject, **Don Coats** will discuss magnification levels, light source effects, stains, mounting processes, and digital camera options that are available to the inquiring mind of the more advanced beekeeper.

M205 Worker Anatomy, Focus Tracheal Mites

Students will appreciate **Diana Sammataro's** strong background in honey bee anatomy with a specific focus on tracheal mites. In theory, as beekeepers strive to avoid pesticides, tracheal mites could become more common again. Tracheal tubes are easy to find with the dissecting scope and as no system is an island, other organs depend on their connections. So finding the tubes will direct the student to relationships between other anatomy and concepts of "breathing" without lungs or gills. We will also use archived microscope slides for this class.

M209 American Foulbrood Identification, in the Hive and under the Scope

Bart Smith, from the diagnostic lab at the USDA Bee Lab in Beltsville, MD, will discuss American foulbrood (AFB) and show how to identify the disease from gross symptoms in the comb. Additionally, students will learn how to prepare slides and identify *Paenibacillus larvae* spores, the causative organism of AFB, under the compound microscope.

M222 Detecting *Nosema* Infection in Honey Bees

Explore dissection of the honey bee digestive tract with Holly Holt and learn how to identify abnormalities that might relate to signs of *Nosema* infection. Learn about *Nosema* biology and pathology in the honey bee, how to identify *Nosema* spores with a compound microscope, and how to quantify infection levels. Samples will be provided, but attendees are encouraged to bring 20-50 foragers from their own hives to screen for *Nosema* infection (each hive sample should be stored separately). To collect foragers, block the entrance of your hive and place returning bees (with pollen pellets attached to their legs) in a jar of 70% isopropyl alcohol. Alternatively, older bees may be collected from the outer frames or inner cover lids of your hive.

M225 Sticky Board Assessment: Don Coats

There is much more than *Varroa* assessment that can be revealed in a three-day standard drop period. Wax moth frass and other pests can be diagnosed and assessed without opening the hive. Also read the bee activity signs, wax plates, wax discards from old comb, mold from excessive moisture, pollen ID and possible diarrhea. Simple methods of magnification tools will be discussed.

M230 Drone & Queen Reproduction Anatomy: Debbie Delaney

Drones and queens will be dissected with consideration of artificial insemination. Depending on your fine motor skills, you should find what avulses from the drone during that mid-air mating. Your teacher's monitor and other visual aids will show the subjects that we seek. You are promised to see stored sperm in seminal vesicle of a drone and spermatheca of the queen.

M240 Bee Plants & Their Pollen Identification: Diana Samatarro, Don Coats, Paul Arnold's Power Point

Finding pollen in bee feces, pollen baskets, honey, and the bloom is fascinating and easily done by the amateur at 40X to 1000X. A limited number of plant species or types can be readily distinguished from the masses; but many look like footballs or spheres with grooves and bumps on them. We will review a primer of terms, methods of collection (without processing), with and without staining, and options for light source.