Journeyman Level Beekeeping

Available for 3 undergraduate credits through the University Of Montana Division Of Biological Sciences as BIOB 225 Journeyman Level Beekeeping.

Instructors

Dr. Jerry Bromenshenk
Dr. Scott Debnam
Phillip Welch
Guest experts on specific topics

Location

The course is taught online through Moodle, the University of Montana's online learning system.

Prerequisite

Registration for the Journeyman-Level course is open to those who have successfully completed UM's Apprentice-Level Beekeeping Course or received instructor consent to skip the Apprentice course.

Course Description

The Journeyman level beekeeping course is the next step in the Master Beekeeper curriculum. This course delves a bit deeper into the life and ecology of the honeybee. It will cover topics such as the honeybees' interaction and relation to other native pollinators and the plants they work with, as well as a look into pesticide uses and truths. The student will be given detailed instruction on the honey bees' internal anatomy, and structures and uses of their external anatomy. The course will also provide a detailed knowledge of honey bee diseases and pests. Students will gain instruction in the use of the tools and equipment used in the diagnoses of those diseases and pests. Alternative methods for the treatment of these ailments will also be taught at this level of the curriculum. By the end of the course students will understand the honey bees' place in the ecosystem, and how their unique anatomy contributes to their interactions with the world both inside and outside the hive. They will also be equipped with the knowledge to both diagnose and treat honeybee ailments and pests.

The course is equivalent to 45 hours of instruction. Participants should allow 5-7 hours per week for participation in the course, study time, and reading. The course will start with a more traditional approach with weekly exams, but will develop into a more interactive form of assessment as the students become part of the exercise in the Discussion Forums, much like a graduate seminar is conducted.

Required Textbooks & Equipment

Beekeeping in Western Canada (1998 edition or newer)
T.I. Szabo, D.L. Nelson. Information Services, Agriculture Canada in Ottawa, Ont.
ISBN 0773261397 (pbl.: alk.Paper).
The textbook is available through Alberta Agriculture and Rural Development.

Pollinator Protection: A Bee & Pesticide Handbook
C.A. Johansen, D.F. Mayer. Wicwas Press. ISBN 978-1-878075-31-4
The textbook is available through Wicwas Press.

Students need access to a 400X microscope.

Grading Method

All participants must earn 70% or higher overall to receive a certificate of completion for the course and 4.5 CEUs.

Early in the course, each week will end with an exam covering the material from the previous week. Later in the course, Forums and Writing Assignments will replace exams. Students are also graded on overall participation in forums.

Activity	**Points**
Overall Forum Participation	300
4 Weekly Exams (75 pts each)	300
Pollination & Honey Production Assignment	100
Colony Diagnosis Assignment	100
Honey Marketing & Labeling Assignment	100
Scientific Literature Assignment	225
Pesticides Assignment	225
	1350

Academic credit students will be assigned traditional letter grades using the following scale:

>93%	A
92-90%	A-
89-87%	B+
86-83%	B
82-80%	B-
79-77%	C+
76-73%	C
72-70%	C-
69-67%	D+
66-60%	D
<60%	F

Intellectual Property and Copyright

This course is protected by copyright and is the intellectual property of the University of Montana and the beekeeping faculty. These materials are not to be distributed or disseminated without their express written permission.

Academic Honesty

Plagiarism is defined as misrepresenting another's work, words, or ideas as one's own. Be aware that submitting plagiarized work is subject to an academic penalty by the course instructor as described in the UM Student Conduct Code.

Accessibility

This course was designed to be fully accessible and meets the requirements of the University of Montana Electronic and Information Technology Accessibility Policy. The University of Montana assures equal access to instruction. Students with disabilities may request reasonable modifications by contacting an instructor or by calling Student Support Services at 406.243.6495. By "reasonable," the University means that no fundamental alterations of academic standards or retroactive modifications will take place.

Course Schedule

Course schedule is subject to change. Due dates for assignments and exams will be announced in class.

Week 1

Honey Bee Anatomy

- Anatomical structures used for pollination
- Anatomical structures used for nectar gathering
- Anatomical structures used for location of resources

Honey Bee Anatomy Exam

Week 2

Nosema

- Nosema life cycle with overview of the honey bee digestive system
- Honey bee Maceration
- Microscope overview and operation
- Nosema diagnosis (scientific and field test)

Queen Production

- Overview of the honey bee reproductive system
- Queen grafting

Digestion, Nosema, and Queen Production Exam

Week 3

Mites

- Varroa Mite life cycle

- Varroa Mite roll with alcohol
- Tracheal mite life cycle with an overview of the honey bee respiratory system
- Tracheal mite dissection

Making Splits
- Demonstration

Mite and Splits Exam

Week 4

Anatomical Structures of Flowers
- Angiosperms
- Co-evolution
- Flower anatomy

Anatomical Structures of Flowers Exam

Pollination & Honey Production
- Pollination overview
- Honey bee/plant interaction

Pollination & Honey Production Assignment

Week 5

Honey Marketing & Labeling
- Federal rules regarding honey labeling and marketing
- Reading honey labels and honey grading

Honey Marketing and Labeling Assignment

Week 6 and 7

Review of Scientific Literature
- Scientific paper review
- Access to Information Sources

Ranking of Scientific Literature Assignment

Weeks 8 and 9

Pesticides
- Diffusing current issues
- Truths about pesticide use
- Label reading for safe pesticide use

Pesticides Assignment