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## Public Health Entomology Certificate Preparation Course for ESA

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**Masters Project Proposal**  
**Public Health Entomology Certificate Preparation Course for ESA**  
**By Sylvia Kenmuir**

My Master's Project was to develop a preparation course for the Entomological Society of America (ESA) Public Health Entomology (PHE) Certificate. This is a new program for ESA. Unlike the Board Certified Entomologist (BCE) or Associate Certified Entomologist (ACE) programs which are certifications, the PHE is a standalone certificate in the area of public health. This certificate seeks to identify people who want to further demonstrate public health as an area of expertise. This course will be available to any qualified and approved person seeking to offer preparation course to assist people in preparing for the exam. Currently there is not a complete study preparation course for the exam. ESA's suggested Study materials consist of using the ACE- *IPM for the Urban Professional*, *The Medical Entomology for Students* by Mike Service and *Mallis Handbook for Pest Management* by GIE media. This project will address the five knowledge areas outlined by ESA. I have created a 10-deck ppt training module set that has trainer notes and practice learning exams (knowledge checks) for the students for each module. Three of the decks will be major revamps from the current ESA ACE preparation decks created for that certification by other approved trainers. Seven new decks will be created that will focus on the key pests and new areas of study for this certificate.

Sections of the Training program project will be from the 5 knowledge areas (From ESA) will include:

1. **Intro Module to prepare students for the course**
2. **Modules 1-7 Inspection for evidence of pests (45% of the exam):** *Objective is to update 1 module and create 6 new modules with new materials, new pictures, script for instructors and practice exams for learning checks. There will be 7 decks from this area as it is 45% of the examination.*
  - a. **Module 1:** *Classification and Morphology of Insects*
  - b. **Modules 2-6:** *Identification, Biology and Behavior of Key Pests: Classification, Biology (New modules)*
    - Module 2 Stinging Pests:** Hymenoptera (bees, wasps, ants), Caterpillars, Dermestid Beetles, Centipedes/Millipedes and Blister Beetle
    - Module 3 Biting Pests:** Bed bugs, Kissing Bugs/Conenose bugs, Fleas and Psocids
    - Module 4 Dipteran Pests:** Mosquitoes, House Flies/Little House Flies, No See Ums and Midges
    - Module 5 Cockroaches**
    - Module 6 Related Arthropods:** Ticks, Mites, Spiders, and Centipedes/Millipedes / Nematodes

*\*Epidemiology of diseases/transmission method as appropriate for each listed pests*

**Module 7 Public Health Entomology**

- a. Review of disease and where to send customers for more information
- b. Delusory Parasitosis

**Module 8 Inspection & Monitoring (12% of exam)**

- a. Tools available, probable locations; types of evidence
- b. Conditions conducive to pests
- c. Communication of findings: who/how to communicate & document
- d. Selecting and implementing appropriate monitoring tools
- e. Communication of findings

**Module 9 Selection & Implementation of Control Methods (28% of the exam)**

*Update materials with new pictures, outline and script for instructors and practice exams for learning checks.*

- i. Appropriate type of control (cultural, mechanical, chemical)
- ii. Application technique
- iii. Tools available
- iv. Tools allowed vs. not allowed (legislation and regulation)

- v. Communication of control methods: who/how to communicate & document

### **Strategy**

To create the materials, I took the exam cold as a courtesy from ESA to understand the scope and style of questions asked. As a BCE and approved ACE instructor, I did this. I used the listed study materials and will outline each section in written form which will also help in writing the course. I surveyed the instructors and a script was not needed but notes for slides would be better.

The Preparation course modules must be no longer than one hour delivered. This will be approximately 40- 50 slides per course. Slides must follow the six by six rule of no more than six lines with no more than six words per line. I will compile a list of pictures needed for each section.

A practice exam for each module will be created as a learning check. This will consist of 10 True/False or multiple-choice questions. This will give a total of 100 practice questions for an exam that is 100 questions.

### **Background**

As a BCE and approved ACE preparation instructor, I have assisted over 50 people attain the ACE certification and 10 people for BCE. I am currently the Certification Chair for ESA and I have been able to increase certification awareness as I believe this program elevates our industry. The need for individuals who specialize in public health is more important now than ever.

I have a strong command of how the pest management industry learns and studies for certification exams. As the National Technical Director for Target Specialty Products for over 30 years, I have written and delivered many training programs including licensing preparation courses. That experience has given me a good foundation on how to help people need to study who may not have any education beyond high school. My UNL online program has helped me strategized how to study online when you work full time. Modules need to be engaging and to the point. Exams provide feedback to the individual on how well they grasped that information presented.

### **Outcomes and Future Directions**

In order to make it readily available to the ESA, I would suggest delivering it to ESA for approval and use no later than the end of Summer 2020 semester. My hope to help ESA deliver preparation course to help individuals' study and pass this exam by Fall 2020. The course will laydown a foundation for approved instructors to begin helping individuals prepare for the PHE exam. The course can be given live or easily adapted to Zoom/WebEx platforms.

Periodic surveys through ESA will allow for content to be updated and improved. This certification will allow the pest management and vector industries to show a certificate competence above standard licensing. Future disciplines such as landscape, arborist and Agriculture could be added later.