### Plant Protection 100 Hours Certificate Course

**Ex Tax: **£340.00

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Suitability for Self Employment and Small Businesses:

Our courses are ideal for sole traders and small business owners and their staff. Customer confidence in what you can do will determine how successful you are in getting clients. Completing one or more of our courses for the service you have to offer, will give you the tools to grow your business.

We aim to achieve the correct balance between your qualification being recognised and providing you with the in-depth learning, to empower you to succeed. Select study option A when enrolling, so an employer can check the status of the awarding organisation for your qualification on the Ofqual Register.

Recognition of Your Course By Employers:

Previous students have used their qualification to get into university. However each one will have its own entrance criteria and acceptance may also depend on your other qualifications and experience.

Designing Your Own Qualification:

Bundle up your choice of related courses to form your own qualification. Choose from a Diploma (6 courses), Advanced Diploma (8 courses) and Higher Advanced Diploma (12 courses).

Recognition of Your Course By Universities:

Previous students have used their qualification to get into university. However each one will have its own entrance criteria and acceptance may also depend on your other qualifications and experience.

How Can I Enrol?:

Online via eCommerce, by completing our Online Application Form, or by calling us on +44 (0) 1227 789 649. Lines open 9am till 5pm Monday to Friday, excluding Bank Holidays and between Christmas and New Year.
How Can I Get a Pro-forma Invoice for my Employer?:

Contact us with details and we will email your employer an invoice. We will need: employer's name, address, telephone number, email address and contact name. We will also require your name, telephone number, email address, date of birth and the course and code you wish to enrol for.

This course provides a unique and systematic approach to plant protection, drawing on input from our horticultural experts in the UK, Australia and New Zealand. It is unlike other plant protection courses in terms of its international approach.

This allows you to benefit from a more diverse range of experts (and their diverse experiences); something that is not often found in other schools.

Protect your plants using appropriate pest, disease and weed control techniques - a detailed course for horticulturists, technicians and also for enthusiastic gardeners.

Understanding the life cycles of insects and weeds and learning how to identify them is important in the protect of plants from disease and insect and the spread of weed species. This course shows you how to identify diseases, insects and weeds, understand their life-cycles and select and use appropriate treatments. Control techniques are covered in detail using chemical and biological solutions along with safety procedures and practices.

Learning Goals: Plant Protection BHT207
• Identify the broad category which a plant health problem belongs to. The first step in knowing how to control a pest, disease or weed is to be able to identify it and the plant which it is affecting accurately
• Explain a range of methods for controlling plant problems
• Select appropriate chemical pesticides for different problems
• Identify the symptoms of different plant diseases, including most common and some uncommon problems, in your locality
• Develop procedures to control specific plant diseases
• Identify different insects, including significant taxonomic orders, common pest species, and some less common pest species, found in your locality
• Determine appropriate methods to control different types of insects
• Identify different non-insect pests found in the learner’s locality. Determine appropriate control methods for different non-insect pests
• Identify a range of different weeds. Identify different non-insect pests found in the learner’s locality. Determine appropriate control methods for different non-insect pests
• Manage the control of different types of weed problems

Lesson Structure: Plant Protection BHT207

There are 10 lessons:

1 Introduction

• Naming of Weeds: Common Names, Scientific Names, Examples
• Pests
• Diseases
• What you Need to Know About Diseases
• Common Terms
• Diagnosis of Problems
• Symptoms of Disease
• Conducting an Inspection
• Shortcuts to Problem Identification - Insects Only: What Insect is it?, Difficult to Diagnose Problems

2 Control Techniques
• The Main Ways of Controlling Pests or Diseases: IPM (Integrated Pest Management),
  What Does IPM Involve?
• Non-Chemical Pest Control Methods: Cultural and managerial, Biological and
  microbial, Pheromones and attractants, Insect growth regulators, Repellents,
  Desiccating dusts, Pesticidal soaps and oil, Botanical pesticides
• Law
• Labels
• Biological Control (Biocontrol) of Pest & Diseases: Advantages of Biocontrol,
  Disadvantages of Biocontrol
• Soil Treatment to Control Plant Diseases: What is controlled?
• Sprayer Maintenance and Cleaning
• Mister/Duster Blowers
• What Damage is Being Done to the Environment?: Soil, Water, Air, Vegetation,
  Wildlife, Humans
• Your Spray Machine - Is it Good Enough? Selection of Pump and Tank, Calibration,
  Constant Tractor Speed
• Rules for Handling Pesticides: Safety Rules for Using Chemicals, Safely Storing
  Chemicals, Safely Mixing Chemicals, Using Chemicals, Agitation, Cleaning Up and
  Disposing of Chemicals
• Basic First-Aid in Relation to Chemicals: In the event of a liquid spill, In the event of a
  powder spill
• Natural Pest and Disease Control: Cultural Controls, Physical Controls, Organic Sprays
  and Dusts, Companion Planting, Do Not Plant the Following Combinations......
• Plant Protection Techniques: Staking, Frost Protection, Sun Protection, Cages and
  Netting, Props, Cabling, Bolting
• Government Quarantine Laws
• Insect Pest Management
• Elements of an Integrated Pest Management System (i.e. IPM): Natural Control,
  Sampling, Economic Levels, Insect Biology and Ecology, Cultural Control
• Safety Procedures When Using Agricultural Chemicals: Rules for Using Chemicals,
  Keeping Records

3 Chemicals

• Introduction
• Summary of Insecticides: Inorganic Insecticides, Botanical Insecticides,
  Organochlorine Insecticides, Organophosphate Insecticides, Carbamate Insecticides,
  Synthetic Pyrethroids
• Characteristics of Insecticides: Toxicity, Spectrum of Activity, LD50, Persistence,
Volutility, Repellency, Flushing Action, Knockdown Action, Phytotoxicity

- Chemical Pesticides - Fungicides/Nematicides
- Definition of Pesticide Terms
- Effects of Chemicals on Humans and Animals: Acute Poisoning, Chronic Poisoning
- Keeping Records: What Information Should Be Kept
- Spray Programs
- What Chemical Can be Mixed With What?: Incompatible chemicals, MSDS Relevance

4 Identifying Diseases

- Morphological Symptoms: Necrosis, Plesioneccrotic, Holonecrotic, Plesioneccrosis, Hydrosis, Holonecrosis, Hypoplasies, Hyperplases
- Types of Pathogens: Viruses, Bacteria, Fungi, Nematodes
- Disease Lifecycles
- A Key to Symptoms of Disease in Plants
- Techniques for Diagnosis of Plant Diseases: Hand Lenses, Monobjective Microscopes, Stereomicroscopes, Preparing Plant Pathogens for Microscopic Observation, Culturing Pathogens
- Plant Viruses - Their Detection and Diagnosis
- Virus Control
- Fungus Biology
- The Process of Tree Decay
- Common Diseases: A - Z
- Turf Diseases

5 Disease Control

- The Lifecycle of a Disease: Inoculation, Penetration, Infection, Growth and Reproductive, Decimation
- Systemic Fungicides
- Fongarid
- Sclerrotinia Rot on Vegetables
- Non-Parasitic Problems with Turf: Dry Patch, Heat Scald, Algae, Mosses, Chemicals
- The Plant & Water: Water excess, Water Deficiency
- Citrus Virus Diseases: Scaly Butt (Exocortis), Lemon Crinkle

6 Insect Classification and biology

- Insect Biology: Mouthparts, Legs, Lifecycle
- Insect Classification
- The Orders of Insects: Subclass APTERYGOTA, Subclass PTERYGOTA
• Feeding Habits: Insects (and other pests) which chew above ground, Insects (and other pests) which suck plant parts above ground, Insects (and other pests) which feed below grounds, Borers

7 **Insect Control**

• Introduction
• Insect Control
• Forms of Applied Insect Control: Mechanical Control, Cultural Control, Biological Control, Legislation
• Technical Information on Rogor: Properties of Pure Dimethoate
• Insect Pests on Fruit Trees: Time of Infestation, Nature of Damage
• Dutch Elm Beetle & Fungus

8 **Other Pests**

• Plant Nematodes: Plant parasitic Nematodes
• Nematodes & Citrus Production
• Millipedes
• Red Spider Mites
• Slaters or Wood Lice
• Snails & Slugs

9 **Weed Identification**

• Some Common Groups of Weeds: Grasses, Onion Family Weeds, Daisy Weeds, Thistles, Cabbage Family, Pea Family (Fabaceae)
• Encyclopedia of Common Weeds: A - Z
• Weeds: Identifying Weeds

10 **Weed Control**

• Introduction
• Weeds in Turf: Methods of Controlling Weed Problems
• Some Turf Weedicides (Herbicides)
• MCPA
• Law in Relation to Chemical Use
• Weeds in Nurseries: Control in Greenhouses, Recommended Weedicides for in Nursery
• Herbicide Classification: Groups 1 - 14
• Weed Control: Steps in Controlling Weeds, Ways to Control Weeds
• Identifying Weeds: Types of Weeds Problems, Fence lines and Borders, Weeds at the
base of trees, Weeds in Garden Beds, Weeds in Hard Surfaced Areas, Plants that go to Seed, Vigorous, Invasive Creepers that take root (periwinkle, ivy), Suckers, Underground Rhomes, Tubers, Bulbils and Corms, Weeds in Lawns, Poisonous Plants, Noxious Weeds
• Profiles of Some Common Weeds: Bamboo, Bindii, Blackberry, Bracken Fern, Capeweed, Clover, Dandelion, Dock, Gorse, Grasses, Lantana, Nettle, Oxalis, Singapore Daisy, Thistles

The quality of this course is second to none, from the in-depth learning you will get to the expert individual mentoring you will receive throughout your studies. The mentors for this course are:

Susan Stephenson


Susan Stephenson is a passionate and experienced horticulturist and garden designer. She has authored three books, lectures at 2 Further and Higher Education Colleges, teaching people of all ages and backgrounds about the wonders of plants and garden design, and tutors many students by correspondence from all over the world.

Susan studied botany at Royal Holloway College (Univ of London) and worked in the trading industry before returning to her first love plants and garden design. She is therefore, well placed to combine business knowledge with horticulture and design skills. Her experience is wide and varied and she has designed gardens for families and individuals. Susan is a mentor for garden designers who are just starting out, offering her support and advice and she also writes, delivers and assesses courses for colleges, introducing and encouraging people into horticulture and garden design.
In 2010, Susan authored a complete module for a Foundation degree (FDSC) in Arboriculture.

Susan holds the RHS General with Distinction. She continues to actively learn about horticulture and plants and (as her students will tell you) remains passionate and interested in design and horticulture.

Steven Whitaker

Diploma in Garden Design (Distinction) – The Blackford Centre, Gold Certificate of Achievement in Horticulture, Level 2 NVQ in Amenity Horticulture, Level 1 NOCN Introduction to Gardening, - Joseph Priestly College, BTEC Diploma in Hotel, Catering and Institutional Operations (Merit), Trainer Skills 1, & 2, Group trainer, Interview and Selection Skills – Kirby College of Further Education

Steven has a wealth of Horticultural knowledge, having ran his own Design and Build service, Landscaping company, and been a Head Gardener. His awards include five Gold awards at Leeds in Bloom, two Gold awards at Yorkshire in Bloom and The Yorkshire Rose Award for Permanent Landscaping. Steven has worked with TV’s Phil Spencer as his garden advisor on the Channel 4 TV Programme, “Secret Agent”.

He is qualified to Level 2 NVQ in Amenity Horticulture and has a Diploma in Garden Design which he passed with Distinction. Steven’s Tutor and Mentor was the Chelsea Flower Show Gold Award-winning Garden Designer, Tracy Foster. He also works for a major Horticultural Commercial Grower in the field of Propagation and Craft Gardening. Steven lives in Leeds where he is a Freelance Garden Designer and Garden Advice Consultant.
Excerpt From The Course

INSECT BIOLOGY

An insect is an animal classified into the class "insecta". It has the following characteristics:

- An exoskeleton (i.e. a hard shell on the outside of the body - not hard bones within the body like in fish or higher animals).
- The body is segmented into three sections.
  - Head
  - Thorax
  - Abdomen

  - There are three pairs (6 in total) legs attached to the thorax.
  - There are normally one or two pairs of wings (occasionally no wings).
  - There is one pair of antennae attached to the head.

The HEAD contains a pair of eyes, antennae and mouthparts. Characteristics of the mouthparts and antennae are used in distinguishing one type of insect from another.

The THORAX consists of three ring-like segments joined together (i.e. the prothorax, the mesothorax and the metathorax). One pair of legs attaches to each of these three segments. In some species of insect, the prothorax covers the other two segments on the top of the insect's back. The characteristics of the legs, wings and the three thorax segments are used a lot in distinguishing between species.

The ABDOMEN is made up of up to 11 ring-like segments, each segment made up of an upper plate and a lower plate joined together. Membranes joining these segments allow the plates to move.

Mouthparts

Most fall into one of two different types of mouthparts:

**Chewing mouthparts** made up of an upper lip (called a labrum), a pair of mandibles to pinch or crush food, a lower lip (called a labium), a tongue like structure (called a hypopharynx) and a pair of jaw like structures called maxillae.

**Sucking mouthparts** are the same structures basically, but with modifications to some or all of those parts to allow the insect to secure liquid food. The modifications may be in the form of a structure which pierces and sucks liquid through the skin of another animal, or plant (e.g. mosquitoes or aphids). These mouthparts may be rasping
and sucking in action, or tube like.

**Legs**

The insect’s legs are divided into 4 main sections:

The coxa and trochanter are short stubby sections joining the leg to the body.

The femur is a long section attached to the trochanter.

The tibia is another long section below the femur.

The tarsi are a series of segments at the end of the leg (The equivalent of a foot).

**Lifecycle**

Most insects go through a metamorphosis stage in their lifecycle. This means that they change form at some stage between hatching from an egg, and reaching maturity as an adult. For example, a butterfly begins as a caterpillar. Its metamorphosis stage is when it forms a cocoon and changes from the form of a crawling grub into the form of a flying caterpillar.

The typical development is four stages:

1. Egg -laid by a mature adult
2. Larva -grub like crawler emerges from egg with no wings.
3. Pupa -may be exposed, or may be in a capsule such as a cocoon.
4. Adult -usually winged

There are exceptions, but this is normally the course followed by an insect.