

GARDEN DESIGN



ACADEMY

## Botany I (Plant Physiology And Taxonomy)

**Duration (approx)** 100 hours

**Qualification** Statement of Attainment

Discover the world of Botany; under the guidance of an international team of outstanding tutors.

This is very much an "applied" course, with relevance to the real world.

### Lesson Structure

There are 10 lessons in this course:

1. Taxonomic Classification of Plants
2. Cells and Tissues
3. Specific Vegetative Parts of a Plant
4. Flowers and Fruit
5. Seed and the Developing Embryo
6. Photosynthesis and Growing Plants
7. Respiration
8. The Role of Water
9. Movement of Water and Assimilates through a Plant
10. The Effects of Tropisms and Other Growth Movements

Each lesson culminates in an assignment which is submitted to the school, marked by the school's tutors and returned to you with any relevant suggestions, comments, and if necessary, extra reading.



## Aims

- Understand the relationship between the scientific principles of this unit and horticultural practices
- Demonstrate a knowledge of the Plant Kingdom and understanding of the taxonomic hierarchy
- Identify and describe the different types of plant cells and tissues, their structure and function
- Determine the role and function of specific vegetative parts of the plant
- Determine the role and function of the reproductive parts of the plant
- Demonstrate an understanding of the role and function of the seed in the life cycle of the plant
- Explain the mechanism and the role of photosynthesis in the metabolism of plants and relate to plant growth in controlled environments
- Explain the mechanism and the role of respiration in the metabolism of plants
- Demonstrate an understanding of the role of water in the plant
- Review the movement of water, solutes and assimilates through the plant
- Understand the effects of tropisms and other plant movements on growth and development
- Undertake risk assessments relevant to the learning outcomes in this course

## What You Will Do

- Prepare a collection of forty pressed, dried, labelled plants
- Learn how to key out plants using a Botanical Key
- Identify the phyla, family, genus and species of ten unknown plants
- Identify modified plant parts on live plants
- Describe in botanical terms leaf shapes from a range of different plants
- Dissect and draw labelled diagrams of several flowers
- Collect fruits and categorise them by type (pome, drupe, etc)
- Germinate seeds and describe changes that occur to the seeds over time
- Observe changes in potted plants under varying levels of sunlight and relate this to photosynthesis
- Observe transpiration in live plants and relate this to theoretical knowledge
- Observe and record osmosis in an experimental situation
- Observe and record phototropism in plants