InHydro

ADVANCE HYDROPONICS TECHNOLOGY

www.inhydro.in

Excels in Hydroponics Technology and Agribusiness

A Robust Course on Advance Hydroponics Technology is an Industrial greenhouse and hydroponics training program that incorporates teaching and demonstration to provide participants with a clear understanding of controlled environment farming & hydroponics systems and business from industry leaders.

About the Program

The objective of this course is to provide the candidate the detail knowledge & skills in Hydroponics farming to facilitate faster learning curves as a hydroponic grower or Commercial hydroponic farm.

This course aims to provide theoretical & Practical knowledge and skills in the discipline of Hydroponics Farming. This course will cover detailed knowledge about hydroponics farming, Seed selection, Nutrient management Pest and Diseases Control in hydroponics, and retails & Commercial business planning.

Key Learning Goals

In-Hydro Course on Advance Hydroponics Technology provides in-depth knowledge of all aspects of hydroponics.

- Plant Science Plant Growth Requirements
- Cultivation (Greenhouse) Farming
- Introduction To hydroponics, Hydroponics Systems crops
- Hydroponics Nutrient Management
- Hydroponics Automation Control
- Agronomy, Pest diseases Management
- Hydroponics Business planning
- Question Answers Session

Who Can Join this Course?

Beginners, Hobbyists, progressive growers, Agripreneurs and hydroponics consultants of any age with a keen interest in New-Age Farming are most welcome in the Advance Hydroponic Technology Course.

- Ideal for **Beginners** who want to learn about hydroponics/soilless farming & understand its business prospects in India.
- **Agri-Entrepreneurs** who want to start an agribusiness.
- **Hydroponics Growers** looking for expert advice on business expansion
- **Home Gardeners** Anyone with a balcony or terrace & who wants to grow quality vegetables

Methodology

The program is a global standard offering that uses mixes of hydroponics farming technologies aligned to unique pedagogy which is goal -centric & action-oriented. Demonstrate Case Studies with hands-on experience and farm visits, exercise & brainstorming using adaptive probing methodology along with classroom theories and live exposure.

About the course

Mode/Duration

6 Weeks
Classroom/Farm
Fee : ₹ 25000/-

Learning Based outcomes:

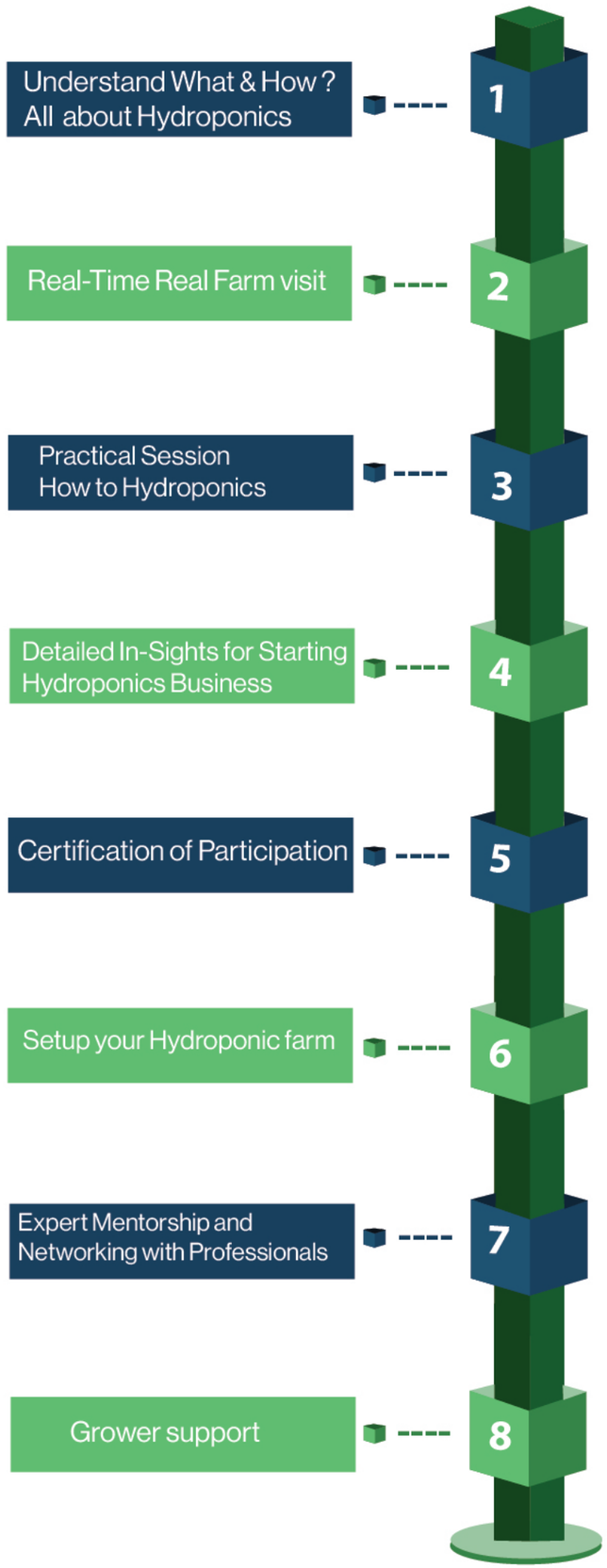
Get hands-on experience in hydroponics farming with an understanding of the system, nutrient management, pest & disease in hydroponics, Cultivation farming & understand it's business prospects in India.

Trainer:

They are delivered by a senior hydroponics professional having extensive experience of hydroponics and greenhouse farming. These practitioners are also impanelled as subject matter experts with InHydro.

Content:

Great Content on Hydroponics farming including courseware (PPT/PDF), data, case studies articles books videos, resource library & related more.



Course structure

Introduction to Hydroponics & Plant Growth Requirements

- Introduction to Hydroponics
- History of Hydroponics
- Global industry
- Comparison to growing in soil
- Resources and contacts
- Plant structure
- How Plants Grow
- Photosynthesis
- Light, Water and nutrients Requirements
- CO2, O2, Temperature, Humidity and other requirements

Hydroponics Growing Media

- Growing Media
- The Perfect Grow Medium
- Type of Media
- Coco peat. Vermiculite, Perlite, rook wool, Leca etc.
- Advantages & Disadvantages of various grow mediums
- How to choose perfect medium for various system

Light Requirements, artificial light

- Plant structure
- How Plants Grow
- Photosynthesis
- Light requirements
- Natural Lights
- Artificial Lighting

Hydroponics Nutrition- nutrient requirements, deficiencies, toxicities, pH, conductivity, salinity, growth regulators

- Significance of understanding chemistry for hydroponics
- Understanding Basic Chemistry
  Water Quality: Hard water, Water pH, Water EC, Sodium Chloride, Turbidity, Smell and colour, Iron content, dissolved oxygen etc
- Obtaining a Water Analysis for Hydroponics
- Water Treatments
- The important Plant Nutrients
- Plant Nutrition – The Nutrient Elements
- Mechanisms of Nutrient Uptake
- Hydroponic Nutrient
- Preparing Nutrient Solutions
- Fertiliser Salts for Formulations
- Nutrient Formulations
- Nutrient Formulation Stock Solutions
  Nutrient Formulation: Formulas for different systems,
- Stage of growth – grow vs bloom formulas
- Making up Hydroponic Stock Solutions Fertiliser Salts
- Mixing Nutrients
- Choosing the Right Fertiliser
- Understanding PH in Hydroponics
- Adjusting the pH
- Conductivity in hydroponics, TDS/EC

Hydroponics Growing Systems

- Various Hydroponics Systems
- Hydroponics System classification criteria
- Closed and Open System Techniques.
- NFT, DWC, Dutch buckets, ebb and flow, Aeroponics
- Commercial Hydroponic Systems
- Hydroponic growing system design & Layouts
- Strengths & Weaknesses of Various Systems

Hydroponics Materials Selection & Sizing

- Food Safe Material Hydroponics
- Selection & Sizing of NFT Channels
- Selection & Sizing of reservoir tanks
- Selection & Sizing of Pumps & Motors for various Systems
- Selections of Various Tools used in Hydroponics
- Selection of Air pumps for Aeration
- Selection of Grow Lights

Automation in Hydroponics: Componentry, nutrient delivery, pumping, testing

- Automation in Hydroponics
- Timer Switches
- pH Measurement
- pH Controllers
- EC/TDS Measurement
- EC/TDS Controller
- DO Measurement
- ORP Measurement
- Nutrient Temperature Measurement
- Nutrient Auto Dosing systems

Green House: Design and Construction

- Growing Plants in a Greenhouse
- The Greenhouse System
- Types of Greenhouses
- Commonly used Greenhouse Designs
- Shape of Structures to Maximise Light Transmission
- Problems with Greenhouses
- Horticultural Management in a Greenhouse
- Greenhouse Irrigation Methods
- Culture and Management of some Greenhouse Crops
- Optimum Growth Requirement for Certain Plants
- light factors in greenhouse
- Greenhouse Benches and Beds: Shelving or Staging, Ground Beds, Raised Beds, Pot Crops, Flooring, Guttering,
- Solar Energy Applications in Horticulture

Environmental Control A - Heating, Cooling & Environmental Control B - Lighting & Shading

- Environmental Control
- Environmental Factors that Influence Plant Growth
- Measurement of Environmental Factors
- Temperature Control
- Cooling Systems
- Ventilators
- Heating
- Localised Heaters
- Light Factors
- Artificial Light
- Lighting
- Shading
- Carbon Dioxide
- Effects of Carbon Dioxide
- Methods of CO_2 Injection
- Standard Night Temperatures at Greenhouse

Plant Propagation: Seed & cutting propagation & tissue culture

- Plant Propagation Techniques
- Temperatures required for seed germination
- Seed Germination of Vegetables and Herbs
- Seedling Development
- Types of Cuttings
- Stock Plants
- Hormone Treatment of Cuttings
- Other Chemical Treatments
- Other Treatments to Improve Cutting Success
- Using Artificial Light in Plant Propagation
- Growing Media, Propagating Media, Components
- Mixes/Substrates for Striking Cuttings/Starting Bed
- Using Fertilisers in Propagation Mixes
- Nutrition Management
- Factors Affecting Fertiliser Application
- Efficiencies in Cutting Production
- Example of Estimating Cost of Cutting Productions
- Tissue Culture
- Tissue Culture Procedures
- Environmental Conditions

Hydroponic Crop Production Leafy Greens

- Hydroponic Salad Greens: Lettuce, Celery, Spinach, Kale, Pokchoy, Swiss chard
- Hydroponic Herb Production: Basil, Mint, Sage, Thyme, parsley, Chives, Rosemary Fruits & Vegetables
- Strawberry, Broccoli, cauliflower, cabbage, Asparagus, Beans, Beetroot, Carrots, Okra

Pests and Diseases in Hydroponics

- Fungi
- Common Fungal Problems
- Pest & Disease Control Measures: Integrated pest management (IPM), Nutrient solution management
- Common Pests & Diseases
- Pests: Aphids, Thrips, Whitefly, Caterpillars, Leaf Miners, Mites, Mealy Bugs, Scale Insects, Leafhoppers, Slugs and Snails, Flies, Other pests
- Common Diseases: Botrytis – Grey mould, Mildew diseases, Rusts, Rots, Bacterial diseases, Viruses
- Problem solving and identification of illness
- leaf hoppers; thrip; virus; bacteria; caterpillars; harlequin bugs and more
- Plant Viruses – Their Detection and Diagnosis
- Virus Control
- Environmental Problems
- Common Environmental Problems

Course Certificates

Integrated Hydroponics India PVT. LTD. An initiative by SmartBrains Engineers & Technologist Pvt. Ltd. aims to create awareness about sustainable and safe practices in organic and hydroponic farming technology for commercial and Rooftop farming. SmartBrains is associated with the National Skill Development Corporation (NSDC) as the training & Certification Partner for various job training programs across various sectors Including Oil & Gas, Power, Renewable Energy, Hydrocarbon, IT, Electronics Agriculture, Hydroponics, etc. training & Certifications Programs.

About InHydro

Complete one stop solutions for the 21st Century Hydroponic farms greenhouses Projects.

InHydro is the nation's leading manufacturer of food grade hydroponics Products, offers a complete solution from Technology Innovation and R&D, feasibility studies, farm design & site Planning, Project Management, Training & Consulting, Farm operation & Maintenance to agronomy support in commercial Hydroponic Farms or small home/rooftop growing setups. InHydro's Hydroponic System Experts love helping our growers in their environmental controls and design custom solutions that optimize crop turns.

InHydro aim to provide best quality profitable and sustainable hydroponic solutions to customers world wide

Let's Grow Together!

Contact us today to know more about Profitable and Sustainable New Age of Farming Technologies

Integrated Hydroponics India Pvt. Ltd.

A Unit of Smartbrains Engineers & Technologist Pvt. Ltd.

P hone : 8505888800
8506818506

Email : info@inhydro.in
Web : www.inhydro.in

Address : A – 25, A Block, Sector 59, Noida, Uttar Pradesh 201301