Hydroponic and Aeroponic Farming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Hydroponic and Aeroponic Farming	**2**	**0**		**2**	Nil	Nil

Learning objectives:

- The objective of the course is to provide hands-on experience to students on various aspects of hydroponics and aeroponics.
- To make students self-reliant and employable by providing the necessary knowledge and experience to establish hydroponic and aeroponic systems.

Learning Outcomes:

After completing the course, learners will be able to:

- develop basic hydroponics and aeroponics facilities at any given location (pilot scale and/or industrial scale).
- devise and implement a strategy for marketing of the product.
- apply the knowledge to fulfill certification rules and various government policies.
- establish themselves as entrepreneurs (Hydroponic cultivator).

Practicals:

1. Study of techniques used in hydroponics (Circulating methods such as Nutrient Film Technique (NFT), Deep Flow Technique (DFT), Dutch bucket; Non circulating methods such as Root dipping, Floating, Capillary action; Aeroponics such as root mist and fog feed techniques). 02 Weeks
2. Study of various instruments used in hydroponics (Pressure gauge, Filters, PVC Tanks, Venturi/Reciprocating Pump/Mixing tank, EC meter, pH meter, TDS meter, water pump, net cups, air pump, thermometer, lux meter, drip irrigation system. 02 Weeks
3. Construction of sustainable hydroponic and aeroponic units (including greenhouse facilities) 02 Weeks
4. Preparation of growth media for Hydroponics. 01 Week
5. Estimation of NPK, DO, TDS, pH of growth media. 01 Weeks

6. Study of suitable conditions for Hydroponics-quality, light intensity, photoperiod and temperature. 01 Week
7. Growing a leafy vegetable/fruity vegetable/medicinal herb /aromatic plant in Hydroponics /Aeroponic solution. 04 Weeks
8. Study of safety measures, certification standards and government policies. 01 Week
9. Visit to Hydroponic/Aquaculture/Aeroponic farm/Institute. 01 Week

Suggested Readings:

1. Meier Schwarz. (1995). Soilless Culture Management. Advanced Series in Agricultural Sciences, vol 24.Springer, Berlin.

2. Hasan, M.; Sabir, N.; Singh, A.K.; Singh, M.C.; Patel, N.; Khanna, M.; Rai, T.; and Pragnya, P. (2018). Hydroponics Technology for Horticultural Crops, Tech. Bull. TB-ICN 188/2018.Publ. by I.A.R.I., New Delhi.

3. Misra, R.L., Misra S. (2017). Soilless Crop production. Daya Publishing House, Astral

Additional Resources:

1. Goddek, S., Joyce, A., Kotzen, B., Burnell, G.M. (2019). Aquaponics Food Production Systems.Springer, Cham.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.