

**(AG508) Micro Irrigation System Design**

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**Unit 1**

Past, present and future need of micro-irrigation systems, Role of Govt. for the promotion of micro-irrigation in India, Merits and demerits of micro-irrigation system,

**Unit II**

Types and components of micro-irrigation system, Micro-irrigation system- design, installation, and maintenance. Sprinkler irrigation - types, planning factors, uniformity and efficiency, laying pipeline, hydraulic lateral, sub-mains and main line design, pump and power unit selection.

**Unit III**

Drip irrigation – potential, automation, crops suitability. Fertigation – Fertilizer application criteria, suitability of fertilizer compounds, fertilizer mixing, injection duration, rate and frequency, capacity of fertilizer tank.

**Unit IV**

Quality control in micro-irrigation components, design and maintenance of polyhouse, importance and application of polyhouse

**Unit V**

Prospects of waste land development –hills, semi-arid, coastal areas, water scarce areas, Benefit and Cost analysis.

**TEXT BOOKS:**

1. Cuenca, H.R. (1989). *Irrigation System Design-An Engineering Approach*. Prentice Hall, Engle wood, Cliffs, New Jersey.
2. Israelson and Hassan. (1981). *Irrigation Principles and Practices*. John Wiley and sons, New York.
3. Jack, K. and Rend, B. *Sprinkler and Trickle Irrigation*. Van Nostra Reinhold, New York.
4. Lal, R. (1983). *Irrigation Hydraulics*. Saroj Prakashan Publishers, Allahabad.

**REFERENCE BOOKS:**

5. Larry, G.J. (1982). *Principles of Farm Irrigation System Design*. John Wiley Sons, New York.
6. Michael, A.M. (1986). *Irrigation Theory and Practice*. Vikas Publishing House, New Delhi.
7. Sivanappan, R.K. (1987). *Sprinkler irrigation*. Oxford & IBH Publishing Company, New Delhi.