5CE143 Water and Land Management

L-T-P-Cr: 3-0-0-3

Theory: 1. Problem of irrigation system in India, Soil and Land Irrigation classification, Basic concept of diagnostic analysis. 3 Lectures

2. Soil water plant relationship, Evapotranspiration, crop coefficient, effective rainfall, crop water requirements, and irrigation efficiencies. 8 Lectures

3. Irrigation scheduling, Stressed irrigation, drought and water management policy during drought. 4 Lectures

4. Micro level planning for any canal/tube well system, Evaluation of check planning and design. 3 Lectures 5. Water application methods: Border irrigation, basin irrigation, furrow irrigation sprinkler and drip irrigation. 3 Lectures

6. Operation and maintenance of irrigation system: rotational water distribution systemarabandi, Evaluation of irrigation project’s performance and improvement. 5 Lectures

7. Design of an on farm drainage system; surface drains, sub-surface drains, mole drain and biodrains; outfall condition, salinity and alkalinity control, operation and maintenance of a drainage system. 6 Lectures

8. Evaluation and status of land development in irrigation commands, Norms of land levelling, methods of land levelling, plane method or centroid method, contour adjustment method. 5 Lectures

9. Irrigation behavior and decision making, Attitudes and their influence on irrigation management, night irrigation, participatory irrigation management, irrigation organizations. 5 Lectures

Text Books: 1. Irrigation Theory and Practical – A. M. Michael, Vikas, Pub., New Delhi. 2. FAO Irrigation and Drainage Paper no. 24 & 58, Rome, Italy. 3. Irrigation Engineering- G. L. Aswa, Wiley Eastern, New Delhi. 4. Irrigation Engineering – S. K. Mazumdar, Tata McGraw Hill Pub., New Delhi. Reference Books: 1. Diagnostic Analysis of Minor irrigation scheme, Publication no. 11 W ALMI, Aurangabad (Maharashtra), 1885. 2. Application of soil survey in irrigation Water Management, Publication no 21, W ALMI, Aurangabad (Maharashtra), 1885. 3. Irrigation – Gravity Method and Efficiencies, Publication no 15, W ALMI, Aurangabad (Maharashtra), 1885.