**ELEN-01207 ELECTRICAL NETWORK ANALYSIS (3+1)**

Current and voltage transients, RLC circuits with DC and AC excitation, resonant circuit: series and parallel resonance in AC circuit, Q-Factor, mutual inductance and transformers, introduction to phasor representation of alternating voltage and current, single-phase circuit analysis, star-delta transformation for DC and AC circuits, poly-phase generators, phase sequence, vector diagrams for balance and unbalanced three phase networks, power in three phase circuits and different methods of its measurements. Two-port networks and their interconnections. Application of Laplace transform in circuit analysis.

**Prescribed Books:**

1. S. Franco, (1995), "Electric Circuits Fundamentals", Oxford University Press, (2nd edition).
2. R E Thomas, A. J. Rosa and G. J. Toussaint, (2011), "The Analysis and Design of Linear Circuits" John Wiley, 8th Edition.
3. C. Alexander and M. Sadiku, (2016), "Fundamentals of Electric Circuits", McGraw-Hill, 6th Edition.
4. J. D. Irwin and R. M. Nelms, (2015), "Basic Engineering Circuit Analysis", Wiley, 11th Edition.
5. W. Hayt, J. Kemmerly and S. Durbin, (2007), “Engineering Circuit Analysis", McGraw-Hill, 7th Edition.