Branch Specific Courses for Computer Engineering Department

Electrical Networks		L	T	P	Credit
CSEE 102 S1	**Scheme**	**3**	**0**	**2**	**04**

- **AC FUNDAMENTALS AND CIRCUITS**   (07 Hours)
  Alternating voltages and currents through purely resistive inductive and capacitive circuits, R-L, R-C, R-L-C series circuits, impedance and admittance, circuits in parallel, series and parallel resonance, Complex algebra and its application to circuit analysis, Circuit Transient, Initial and Final Value Theorem, DC and Induction Machines, Electrical Measurements, Power System

- **POLYPHASE CIRCUITS AND TRANSFORMES**   (04 Hours)
  Balanced three phase systems, Star and Mesh connections, Relation between Line and Phase quantities, Measurement of power, Principle of transformer, construction, transformer on no-load, with load, phasor diagram for transformer under no-load and loaded condition (with unity, lagging power factor load) equivalent circuit, open circuit and short circuit test, efficiency, voltage regulation.

- **NETWORK CONCEPTS**   (04 Hours)
  Network element symbols and conventions, Active element conventions, current and voltage conventions, loops and meshes, Nodes, coupled circuits and Dot conventions.

- **MESH CURRENT AND NODE VOLTAGE NETWORK ANALYSIS**   (07 Hours)
  Kirchhoff's Voltage Law, Kirchhoff's Current Law, Definitions of mesh current and nodal voltage, Choice of mesh currents or nodal voltages for network analysis, Self and mutual inductances, Mesh Equation in the Impedance Matrix Form by inspection, Solution of Linear Mesh Equations, Nodal Voltage Analysis Nodal Equations in the Form of Admittance Matrices by inspection, Solution of Linear Nodal Equations.

- **NETWORK THEOREMS AND GRAPH**   (07 Hours)
  Linearity and Superposition, Independent and Dependent Source and their Transformations, Thevenin, Norton, Reciprocity and Maximum Power Transfer Theorems, Use of these theorems in Circuit Analysis, Duality and Dual of a Planner Network, Fundamental Concepts, Definition of Graph and Various Related Terms, Paths and Circuits Connections, Tree Of a Graph, Cut Sets and Tie Sets, Non-separable Planner and Dual Graphs, Matrices of Oriented Graphs, Properties and Inter-Relationship of Incidence, Tie Set and Cut Set Matrices, Complete Analysis Using Tie Set and Cut Set Matrices.

- **WAVE FORM ANALYSIS BY FOURIER SERIES**   (06 Hours)
  Trigonometric and complex exponential forms, the frequency spectra of periodic wave forms, the Fourier Integral and continuous frequency spectra, Fourier transform and their relationship with Laplace transform.

- **NETWORK FUNCTIONS AND TWO PORT PARAMETERS**   (07 Hours)
  Poles and zeros of a function, physical and analytical concepts, Terminal and terminal pairs, Driving point immitances, Transfer functions, Definitions, calculations and interrelationship of impedance, admittance, hybrid and transmission line parameters for four terminal networks. Image impedance and its calculations for symmetrical and unsymmetrical π, T and Ladder Networks.

(Total Lecture Hours: 42)

PRACTICALS

1. To study Ammeter and Voltmeter for current and voltage measurement in circuit
2. To study Energy meter
3. To study Power measurement method for three phase circuits using watt meter method
4. Verification of superposition theorem for electric circuit
5. Verification of Thevenin's theorem of electric circuit
6. Calculation and verification Norton's theorem
7. Open circuit and short circuit test for the transformers for efficiency calculation
8. Verification of Kirchhoff's current law and Kirchhoff's voltage law for electric circuit
9. Capacitance measurement of parallel plates
10. Calculation of efficiency of auto transformer

BOOKS RECOMMENDED
1. "Engineering Circuit Analysis", W.H.Hyat, J.E.Kemmerly, S.M.Durbin, 6thEdition, TMH, 2006.
2. "Network Analysis", Van Valkenburg M E, 3rd Edition, PHI, 2002.
3. "Network Theory, Analysis & Synthesis", Samarjit Ghosh, PHI, 2005.
4. "Network Analysis & Synthesis", C.L.Wadhwa, Revised 3rdEdition, New Age International Publishers, 2007.
5. "Basic Electrical Engineering", Kothari and Nagrath, 2nd edition, 2007, Tata McGraw-Hill Education.
6. "Basic Electrical Engineering", V. N. Mittle & Arvind Mittal, 2nd edition, 2005, Tata McGraw-Hill Education.

	L	**T**	**P**	**Credit**
Web Programming				
CSCS 113 S2 **Scheme**	3	0	2	04

- **INTRODUCTION** (04 Hours)
  Basics of Internet, World Wide Web, HTTP protocol, Universal resource locator, Web Server, Different types of Web Servers, Domain Name Server, Web Server Configuration, Internet Browser, Web document and Mark-up language, Hypertext mark-up language, Hyper media, Web site organization, Content organization, Web server on different operating system platforms, Web Applications, Web interface, Web Standards & Accessible Design.

- **WEB DESIGNING: STATIC WEB PAGES** (08 Hours)
  Web page, Static web page, Hypertext mark-up tags, Handling font style, types, size, colour etc., Handling table, list, images, graphics, menu etc.,

- **WEB DESIGING: DYNAMIC WEB PAGES** (08 Hours)
  Forms, Input Text box, Drop down menu, Name variable, Cookie management, Session management, Animation, Structure web pages, Image mapping, Link setup in image, Frames, Structuring web pages using Frames, Multimedia handling, Linking to Pages.

- **DYNAMIC WEB PAGES AND SCRIPTING** (08 Hours)
  Scripting language, Dynamic pages and Forms validation, Validation of Input Text box, Dynamic Drop down menu, Validation and accessing Name variable-value pair, Cookie management through scripting, Session management through scripting, Animation through scripting, Dynamic Image mapping through scripting, Link handling through scripting, Multimedia handling through scripting.

- **WEB PAGE STYLE SHEET** (04 Hours)
  Web page designing using Style Sheet, Different types of style sheet, Defining different styles, Export and Importing Style Sheet, Cascade style sheet.

- **PYTHON PROGRAMMING** (08 Hours)
  Basics of Python programming: variables, controlling statements, functions, Introduction to Module packages, Web designing with Python.

- **WEB HOSTING AND PUBLISHING** (02 Hours)
  Different steps of Web hosting and publishing, Documents Interchange Standards, Website Evaluation, Components of Web Publishing, Document Management, Search Engines, Registration of a Web Site on search Engines, Publishing Tools.

  (Total Contact Time: 42 Hours)

Practicals will be based on the coverage of the above topics. (28 Hours)

PRACTICALS
1. To study web server setup.
2. To study web server configuration.
3. Static web page designing using hypertext mark-up tags.
4. Dynamic web page designing.
5. Dynamic web page designing using script langue.
6. Web page designing using different style sheets.
7. Basic Python programming exercise to familiar with variables and control statements, functions and packages.
8. Web page designing using Python.

BOOKS RECOMMENDED
1. B. Underdahle and K. Underdahle, "Internet and Web Page/ Website design", 2/E, IDG Books India (P) Ltd., 2001.
2. D. Comer, "The Internet Books," 2/E, Prentice Hall of India, 2001.
3. J. Sklar, "Principles of Web Design", 7/E, Cengage Learning; 2017.
4. H. Deitel, A. Deitel, "Internet and World Wide Web How To Program", 5/E, Pearson, 2012.
5. M.L. Young," The Complete reference of Internet", Tata Mc Graw Hill, 2002.
6. W.G. Lehnert, "Internet 101, 1/E, Person Education, 2001.
7. Jon Duckett, "HTML & CSS Design and Build Websites", John Wiley & Sons, Inc., 2011.
8. Thomas Powell and fritz Schneider, "JavaScript: The Complete Reference, McGraw-Hill, 2017.
9. Martin C. Brown, "Python: The Complete Reference, Osborne / McGraw-Hill, 2018.