Karnatak Law Society's

VISHWANATHRAO DESHPANDE
INSTITUTE OF TECHNOLOGY, HALIYAL

(Recognized Under Section 2(f) of UGC Act, 1956)

Approved by AICTE, New Delhi, Affiliated to V. T. U., Belagavi

Udyog Vidyanagar, Dandeli Road, Haliyal - 581 329, Dist: Uttara Kannada, Karnataka

Ph: 08284 - 220861, 221409 Mob: 944945452 Fax: 08284 - 220813 www.klsvdit.edu.in | pricipal@klsvdit.edu.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ADD-ON COURSE SYLLABUS

TITLE: OP-AMP PRACTICAL APPLICATIONS: DESIGN SIMULATION AND IMPLEMENTATION

Sem: 3rd

Total Hours:30

MODULES
MODULE1:
Introduction to Op-amp: Understanding the Datasheet of Op-Amps, effect of loading and input impedance, Getting Started with NI Circuit Design Simulation Tool   10 Hours
MODULE2:
Op-amp Practical Application-1: Op-amp Circuits using diodes: Half Wave Rectifier, Full Wave Rectifier, Clipper and Clamper. Understanding the range of feedback amplifier, Op-amps as Phase Shift Oscillator, Op-amps as   Wien Bridge Oscillator.   10 Hours
MODULE3:
Op-amp Practical Application-2(Positive feedback): Op-amp as Comparator, Inverting Schmitt Trigger, Non Inverting Schmitt Trigger, Op-amp based voltage controlled current source   **Mini Projects:** Measure of unknown resistance using by constant current drive circuit using op-amp, Design and development of temperature controlled circuit using op-amp as ON-OFF , Proportion Controller   10 Hours

Text Book:

T1: Johan H. Huijsing, Operational Amplifiers – Theory and Design, 3rd edition, Springer
T2: Willy M.C. Sansen, Analog Design Essentials, Springer, 2007

HoD
Head of the Department
Dept. of Electronic & Communication Engg,
KLS V.D.I.T., HALIYAL (U.K.)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ADD-ON COURSE SYLLABUS

TITLE: IMPLEMENTATION OF LINEAR ALGEBRA CONCEPTS USING OCTAVE

Sem: 5th   Total Hours:30

MODULES
MODULE1:
Getting Started: Introduction, What is Octave, What Octave is not, Who uses Octave, Octave over 'normal' high-level language, Navigating the GUI, Matrices and vectors, Plotting, Linear systems, Polynomial curve fitting, Matrix transformations.   10 Hours
MODULE2:
Matrix Method Analysis: Complex variables, Special functions, Statistics, Eigenvalue, Eigenvectors, Markov chains, Diagonalization, Singular Value Decomposition, Comparison of SVD with PCA, Gram-Schmidt and the QR algorithm   10 Hours
MODULE3:
Case Studies: Digital Image Compression, The Gini Index, Designing a Helical Strake, Modelling the Spread of an Infectious Disease.   10 Hours

Text Book:

T1. Lachniet, Jason. "Introduction to GNU Octave - A brief tutorial for linear algebra and calculus students", 3rd Edition, Lulu. com, 2020.

HoD
Head of the Department
Dept. of Electronic & Communication Engg.
KLS V.D.I.T. HALIYAL (U.K.)

Karnatak Law Society's

VISHWANATHRAO DESHPANDE
INSTITUTE OF TECHNOLOGY, HALIYAL
(Recognized Under Section 2(f) of UGC Act, 1956)
Approved by AICTE, New Delhi, Affiliated to V. T. U., Belagavi
Udyog Vidyanagar, Dandeli Road, Haliyal - 581 329, Dist: Uttara Kannada, Karnataka
Ph: 08284 - 220861, 221409 Mob: 944945452 Fax: 08284 - 220813 www.klsvdit.edu.in | pricipal@klsvdit.edu.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ADD-ON COURSE SYLLABUS

TITLE: DESIGN OF VLSI SYSTEMS AND VERIFICATION OF DIGITAL CIRCUITS USING SIMULATION TOOL

Sem: 7th   Total Hours:30

MODULES
MODULE1:
Introduction to VLSI System: History and evolution of VLSI technology and system VLSI Design flow VLSI design style-FPGA CMOS fabrication and Design rules: Layout design Rules, Fabrication Process Flow   **10 Hours**
MODULE2:
Layout Design: CMOS Inverter layout design Introduction to Proteus Design suite Modelling combinational circuits Implementation and Verification of Basic Gates and Registers   **10 Hours**
MODULE3:
Sequential Circuit Design: Modelling Sequential Circuits Implementation and verification of sequential circuits and Real time Circuits   **10 Hours**

Head of the Department
Dept. of Electronic & Communication Engg,
KLS V.D.I.T., HALIYAL (U.K.)

Karnatak Law Society's

VISHWANATHRAO DESHPANDE
INSTITUTE OF TECHNOLOGY, HALIYAL
(Recognized Under Section 2(f) of UGC Act, 1956)
Approved by AICTE, New Delhi, Affiliated to V. T. U., Belagavi
Udyog Vidyanagar, Dandeli Road, Haliyal - 581 329, Dist: Uttara Kannada, Karnataka
Ph: 08284 - 220861, 221409 Mob: 944945452 Fax: 08284 - 220813 www.klsvdit.edu.in | pricipal@klsvdit.edu.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ADD-ON COURSE SYLLABUS

TITLE: TIPS & TRICKS TO SOLVE GATE QUESTIONS OF E&CE

Sem: 4th   Total Hours:30

MODULES
MODULE1: **Digital Circuits:** Number representations: binary, integer and floating-point- numbers. Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map, logic gates and their static CMOS implementations, arithmetic circuits, code converters, multiplexers, decoders. **Sequential circuits:** latches and flip-flops, counters, shift-registers, finite state machines 10 Hours
MODULE2: **Networks:** Node and mesh analysis, superposition, Thevenin's theorem, Norton's theorem, reciprocity. Sinusoidal steady state analysis: phasors, complex power, maximum power transfer. Time and frequency domain analysis of linear circuits: RL, RC and RLC circuits, solution of network equations using Laplace transform. Linear 2-port network parameters, wye-delta transformation.   10 Hours
MODULE3: **Analog Circuits:** Diode circuits: clipping, clamping and rectifiers. BJT and MOSFET amplifiers: biasing, ac coupling, small signal analysis, frequency response. Current mirrors and differential amplifiers. Op-amp circuits: Amplifiers, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators.   10 Hours

Text Book:

T1. Digital System: M. Morris Mano

T2. Network Analysis: Hayt & Kimmerly

T3. Control Systems: Norman Nise

Head of the Department
Dept. of Electronic & Communication Engg.
KLS V.D.I.T., HALIYAL (U.K.)

Karnatak Law Society's
VISHWANATHRAO DESHPANDE
INSTITUTE OF TECHNOLOGY, HALIYAL
(Recognized Under Section 2(f) of UGC Act, 1956)
Approved by AICTE, New Delhi, Affiliated to V. T. U., Belagavi
Udyog Vidyanagar, Dandeli Road, Haliyal - 581 329, Dist: Uttara Kannada, Karnataka
Ph: 08284 - 220861, 221409 Mob: 944945452 Fax: 08284 - 220813 www.klsvdit.edu.in | pricipal@klsvdit.edu.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ADD-ON COURSE SYLLABUS

TITLE: ALGORITHMIC APPROACH TO SOLVE COMPLEX PROBLEMS

Sem: 6th   Total Hours:30

MODULES
MODULE1:
Problem solving aspect, Top-down approach, Implementation of Algorithms, Implementation of Algorithms, Implementation of Algorithms, Program Verification 8 Hours
MODULE2:
Examples on Program Verification, Examples on Program Verification, Efficiency of Algorithms, Efficiency. of Algorithms, Analysis of Algorithms, Analysis of Algorithms, Enhancing the values of two variables 8 Hours
MODULE3:
Counting. Examples on Counting. Summation of a set of numbers, Factorial Computation, Factorial Computation, Sorting Techniques (selection), Sorting 8 Techniques(exchange) 8 Hours
MODULE4:
Sorting Techniques (insertion), Exchange the values, Counting. Summation of a set of numbers, Factorial Computation, Programs to sort by selection and insertion, Programs to sort by selection and insertion 6 Hours

Text Book:

T1. How to solve it by Computer by, R G Droomy

Head of the Department
HoD
Dept. of Electronic & Communication Engg.
KLS V.D.I.T., HALIYAL (U.K.)

Karnatak Law Society's

VISHWANATHRAO DESHPANDE
INSTITUTE OF TECHNOLOGY, HALIYAL

(Recognized Under Section 2(f) of UGC Act, 1956)
Approved by AICTE, New Delhi, Affiliated to V. T. U., Belagavi
Udyog Vidyanagar, Dandeli Road, Haliyal - 581 329, Dist: Uttara Kannada, Karnataka
Ph: 08284 - 220861, 221409 Mob: 944945452 Fax: 08284 - 220813 www.klsvdit.edu.in | pricipal@klsvdit.edu.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ADD-ON COURSE SYLLABUS

TITLE: INTRODUCTION TO CLOUD COMPUTING

Sem: 8th

Total Hours:30

MODULES
MODULE1:
Cloud Computing Overview: Definition and essential characteristics, History and Evolution. types of cloud, Benefits of cloud, Deployment models, Centralized versus Distributed Systems, Accessing and Managing Cloud Services.   10 Hours
MODULE2:
Cloud Infrastructure: Virtualization's, Components of Cloud Infrastructure, Cloud OS image management, Cloud Computing Architectures, Spine and leaf architecture, HA and redundancy. Cloud Virtualization: Benefits, Models of compute virtualization. NFV and VNF'S, Virtual Machines, Hypervisors. Containers and Microservices   10 Hours
MODULE3:
Cloud Networking: Networking Devices, Overlay Network, Cloud traffic flow, SDN, NFV components, Types of cloud storage, Storage Area Networks. Cloud Security: Cloud risks and threats, Cloud security features, Cloud Security Components, Cloud Automation Concepts: Benefits Device operations and Network Operations   10 Hours

Text Book:

T1. John W, Rittinghous & James F. Ransome, cloud Computing-implementation and Management and Security, CRC Press, Taylor and Francis Group

Head of the Department
Dept. of Electronic & Communication Engg.
KLS V.D.I.T., HALIYAL (U.K.)