SHREE DEVI INSTITUTE OF TECHNOLOGY

(Affiliated to Visvesvaraya Technological University & Recognized by AICTE)

AIRPORT ROAD, KENJAR, MANGALORE – 574 142

Phone: 0824 – 2254104 Website: www.sdc.ac.in, E-mail : sdit_kenjar@rediffmail.com

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGG

2021 Scheme

Course Name	Transform Calculus, Fourier Series and Numerical Techniques
Course Code	21MAT 31
Course Outcomes (COs): At the end of the course the student will be able to:	
C201.1	To solve ordinary differential equations using Laplace transform.
C201.2	Demonstrate the Fourier series to study the behavior of periodic functions and their applications in system communications, digital signal processing and field theory.
C201.3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z Transform techniques to solve difference equations
C201.4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations
C201.5	Determine the extremes of functional using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis..

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C201.1	3	2										
C201.2	3	2										
C201.3	3	2										
C201.4	3	2										
C201.5	3	2										
Max	3	2										

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Course Name	Digital System Design using Verilog
Course Code	21EC32
Course Outcomes (Cos): At the end of the course the student will be able to:	
C202.1	Simplify Boolean functions using K-map and Quine-McCluskey minimization technique.
C202.2	Analyze and design for combinational logic circuits.
C202.3	Analyze the concepts of Flip Flops (SR, D, T and JK) and to design the synchronous sequential circuits using Flip Flops.
C202.4	Analyse the structure of verilog module and understand verilog data flow description.
C202.5	Model Combinational circuits (adders, subtractors, multiplexers) and sequential circuits using Verilog descriptions.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C202.1	2	2	2		2							
C202.2	2	2	2		2							
C202.3	2	2	2		2							
C202.4	2	2	2		2							
C202.5	2	2	2		2							
Max	2	2	2		2							

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Course Name	Basic Signal Processing
Course Code	21EC33
Course Outcomes (COs): At the end of the course the student will be able to:	
C203.1	Analyze and model typical signal sets in terms of a basis function set of amplitude, phase and frequency.
C203.2	Demonstrate by way of simulation or emulation the ease of analysis employing basis function, statistical representation and Eigen Values
C203.3	Analyze the different types of signals and systems. Determine the linearity, causality, time- invariance and stability properties of discrete time systems.
C203.4	Evaluate the convolution sum and integral.
C203.5	Analyze discrete time signals and systems using Z transforms.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C203.1	2	2	2									
C203.2	2	2	2									
C203.3	2	2	2									
C203.4	2	2	2									
C203.5	2	2	2									
Max	2	2	2									

Course Name	Analog Electronic Circuits
Course Code	21EC34
Course Outcomes (COs): At the end of the course the student will be able to:	
C204.1	Understand the characteristics of BJTs and FETs.
C204.2	Design and analyze BJT and FET amplifier circuits.
C204.3	Design sinusoidal and non-sinusoidal oscillators.
C204.4	Understand the functioning of linear ICs.
C204.5	Design of linear IC based circuits, thyristors and gate trigger circuits.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C204.1	2	2	2									
C204.2	2	2	2									
C204.3	2	2	2									
C204.4	2	2	2									
C204.5	2	2	2									
Max	2	2	2									

Course Name	Analog and Digital Electronics Lab
Course Code	21ECL35
Course Outcomes (COs): At the end of the course the student will be able to:	
C205.1	Understand the electronic circuit schematic and its working.
C205.2	Realize and test amplifier and oscillator circuits for the given specifications.
C205.3	Realize the opamp circuits for the applications such as DAC, implement mathematical functions and precision rectifiers.
C205.4	Study the static characteristics of SCR and test the RC triggering circuits.
C205.5	Design and test the combinational and sequential circuits for their functionalities.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C205.1	2	2	3	3								
C205.2	2	2	3	3								
C205.3	2	2	3	3								
C205.4	2	2	3	3								
C205.5	2	2	3	3								
Max	2	2	3	3								

Course Name	LD (Logic Design) Lab using Pspics/ MultiSIM
Course Code	21EC381
Course Outcomes (COs): At the end of the course the student will be able to:	
C206.1	Design, realize and verify DeMorgans Theorem, SOP,POS forms.
C206.2	Demonstrate the truth table of various expression and combinational circuits using logic gates.
C206.3	Design various combinational circuits such as adders, subtractors, comparators, multiplexers .
C206.4	Analyse and design any given sequential logic circuits

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C206.1	3	3										
C206.2	3	3										
C206.3	3	3										
C206.4	3	3										
Max	3	3										

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Course Title :

Kannada KaliCourse

Code/Index :

21KBK37 Course Index

:

C209B

COURSE OUTCOMES (CO): On completion of this course, students are able to:

CO	Course Outcomes
C209.1	Read and understand the simple words in Kannada language
C209.2	Learn Vyavaharika Kannada (Kannada for Communication)
C209.3	Gain some interest on Kannada Language and Literature

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C209.1										3		
C209.2										3		
C209.3										3		
Max										3		

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Course Name	Maths for Communication Engineers
Course Code	21EC41
Course Outcomes (COs): At the end of the course the student will be able to:	
C207.1	Use the concepts of analytic function and complex potentials to solve the problem arising in electromagnetic field theory.
C207.2	Utilize conformal transformation and complex integral arising in steady magnetic field, electric potential.
C207.3	Apply maxwell's equation in analyzing time varying field.
C207.4	To provide a foundation in Random variables which find application in Communication.
C207.5	To provide a foundation in Random Processes and correlation functions which find application in Communication

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C207.1	3	3										
C207.2	3	3										
C207.3	3	3										
C207.4	3	3										
C207.5	3	3										
Max	3	3										

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Course Name	Digital Signal Processing
Course Code	21EC42
Course Outcomes (COs): At the end of the course the student will be able to:	
C208.1	Compute Discrete Fourier Transform (DFT)/Inverse DFT of discrete sequence using thedefinition and properties of DFT along with its real and complex discrete time signals.
C208.2	Evaluate the DFT using linear filtering approach and develop Fast Fourier Transform(FFT) algorithms to reduce the computation time of DFT.
C208.3	Design Finite Impulse Response (FIR) filters using Rectangular, Hamming, Hanning and Bartlett windows and realize FIR filters using Direct form, Linear phase, Frequencysampling and Lattice structures.
C208.4	Design and analyze analog/digital Infinite Impulse Response (IIR) filters usingButterworth and to realize IIR filters using Direct form I, II structures.
C208.5	Understand basics of digital signal processors such as processor architectures and hardware units, investigates fixed-point and floating-point formats and illustrates the implementation of digital filters.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C208.1	2	1	1									
C208.2	2	1	1									
C208.3	2	1	1									
C208.4	2	1	1									
C208.5	2	1	1									
Max	2	1	1									

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Course Name	Circuits and Controls
Course Code	21EC43
Course Outcomes (COs): At the end of the course the student will be able to:	
C209.1	Solve electrical circuit by applying Superposition/ Reciprocity/ Thevenin 's/ Norton 's/ Maximum Power Transfer/ Millman 's theorems.
C209.2	Determine the Impedance (Z), Admittance(Y), Transmission (T) and Hybrid (h) parameters, their inter relationships for a two-port network.
C209.3	Define and explain different types of control system and its application. Formulate the mathematical model of a system using block diagram reduction techniques and signal flow graph method.
C209.4	Determine the time domain specifications for first order and second order systems.
C209.5	Determine the stability of a system in the frequency domain using Nyquist and bode plots.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C209.1	1	2	1									
C209.2	1	2	1									
C209.3	1	2	1									
C209.4	1	2	1									
C209.5	1	2	1									
Max	1	2	1									

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Course Name	Communication Theory
Course Code	21EC44
Course Outcomes (COs): At the end of the course the student will be able to:	
C210.1	Understand and analyze the concepts of analog modulation schemes such as : DSBSC, SSB and VSB.
C210.2	Understand and analyze the concepts of AM, FM, PLL and Superheterodyne receiver.
C210.3	Evolve the concept of SNR in the presence of channel induced noise and study Demodulation of analog modulated signals.
C210.4	Evolve the concept of quantization noise for sampled and encoded signals and study the concepts of reconstruction from these samples at a receiver.
C210.5	Understand and analyse concepts digitization of signals; sampling, quantizing and encoding.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C210.1	2	2										
C210.2	2	2										
C210.3	2	2										
C210.4	2	2										
C210.5	2	2										
Max	2	2										

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Course Name	Communication Lab I
Course Code	21ECL46
Course Outcomes (COs): At the end of the course the student will be able to:	
C211.1	Model an analog communication system signal transmission and reception.
C211.2	Realize the electronic circuits to perform analog and pulse modulations and demodulations.
C211.3	Verify the sampling theorem and relate the signal and its spectrum before and after sampling.
C211.4	Understand the process of PCM and Delta modulations.
C211.5	Understand the PLL operation.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C211.1	2	2	2						2			
C211.2	2	2	2						2			
C211.3	2	2	2						2			
C211.4	2	2	2						2			
C211.5	2	2	2						2			
Max	2	2	2						2			

Course Name	C++ Basics
Course Code	21EC482
Course Outcomes (COs): At the end of the course the student will be able to:	
C212.1	Understand object-oriented programming concepts, and apply them in solving problems.
C212.2	To create, debug and run simple C++ programs.
C212.3	Introduce the concepts of functions, friend functions, inheritance, polymorphism and function overloading.
C212.4	Introduce the concepts of exception handling and multithreading.

COs	**CO-PO Mapping**											
	POs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C212.1	3	2										
C212.2	3	2										
C212.3	3	2										

C212.4	3	2										
Max	3	2										

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