ACADEMIC PLANNER

DEPARTMENT OF ELECTRONICS

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR II STAGE, BENGALURU-55.

NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(I, III & V Semesters for the Academic Year 2020-21) Reopen – 01/09/2020

Class	September	October	November	December
I Sem B.Sc.	**UNIT-1:** DC and AC response of RC &RL Circuits, Transformer, switches.(10H) UNIT-2: Networks Theorems (DC analysis) KCL, KVL, open and short circuits, Voltage and current divider theorems. Star- Delta Conversion. Thevenin's & Superposition theorems. **(6H)**	**UNIT-2:**.Maximum power transfer & Reciprocity theorems. (2H) **UNIT-3:** Semiconductor Diode and its applications. HWR & FWR.Filter.Zener diode Regulator. IC Regulators. **(12H)** Internal Test.	**UNIT-4:** BJT-Construction, working,biasing and characteristics. BJT Biasing and circuits. FET- Construction, characteristics and parameters. (14H)	**UNIT-5:** Number systems and Interconversions. Codes- BCD, Gray, and excess-3 codes. ASCII and EBCDIC codes. Numerical problems. **(8H)** Test and Assignments.
III Sem B.Sc.	**UNIT-3:** C Programming- Introduction, structure, operators, evaluation of expressions, Arrays, Programs. **(8H)**	**UNIT-3:** Input and Output statements, library functions, programs. **(4H)** UNIT-4: Decision making, branching and looping- **(4H)** Internal test.	**UNIT-4:** for loop, do loop, while loop, function arguments and passing, programs. **(4H)** UNIT-5: Defining, declaring and initializing structure, arrays of structure. **(4H)**	**UNIT-5:** structure and functions, unions. Examples **(4H)** Test and Assignments.
V Sem B.Sc.	**UNIT-1:** Introduction to Microprocessor- Features, different buses, addressing modes, Instruction set, T states, Delay oops, Numerical examples. **(12H)**	**UNIT-2:** Stack operations, subroutine calls and returns, Assembly level Programs of various operations. Interrupts, and basic interfacing concepts. Internal test. **(12H)**	**UNIT-3**: I/O instructions and Interfacing- Memory interfacing, i/o interfacing concepts, key board and LED interfacing. **(2H)** Antennas: Full unit **(8H)**	**Unit-5:** Television- Introduction, Scanning, TV standards, monochrome TV transmitter and receiver, Color TV concepts and numerical problems. **(8H)** Internal test.

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K.M. Thipperudra Swamy
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ACADEMIC PLANNER

DEPARTMENT OF ELECTRONICS

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR II STAGE, BENGALURU-55.

NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(VI Semesters for the Academic Year 2020-21) Reopen - 03.05.2021 (Online classes only)

Class	May	Junej	July
VI Sem B.Sc.	**UNIT-1:** Introduction to Microcontroller-Types, Architecture, Registers, Counters and timers, TCON, SCON, PCON, **(10H)** Interrupts-IE, IP. **(2H)**	**UNIT-2**: Addressing modes, Instruction set, Assembly level Programs of various operations. **(8H)** Jump & Call instructions, simple programs. **(3H)** Internal Test.	**UNIT-3:** 8051 programming using C, Timer/Counter programming, Example programs. **(6H)** **UNIT-4:**Interfacing with 8051-Keyboard , seven segment display. **(6H**

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ACADEMIC PLANNER

DEPARTMENT OF ELECTRONICS

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR II STAGE, BENGALURU-55.

NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(II, IV & VI Semesters for the Academic Year 2020-21) Reopen – 26/07/2021

Class	July	August	September	October
II Sem B.Sc.	**UNIT-1:** Small Signal Amplifier-CE Amplifier, derivation for Av, Swamped Amplifier. **(4H)**	Multistage Amplifier, Darlington Amplifier and JFET Amplifier. **(8H)** **UNIT-2:** Power and Tuned Amplifier-Classification, class A power amplifier, Class B push pull power Amplifier, tuned amplifiers. Internal test. **(8H)**	**UNIT-3:** Differential Amplifier- derivation for q point, Current mirror. **(8H)** **UNIT- 4:** Concept, effect of negative FB. Oscillators-Types, circuits, working and expressions . **(8H)**	Multivibrators, numerical problems. **(2H)** **UNIT-5:** MOSFET- Working & characteristics. UJT, SCR, LED and LCD – Construction, working and characteristics. **(14H)**
IV Sem B.Sc.	**UNIT-1:** Boolean algebra, SOP & POS. Basic logic gates. **(2H)**	Universal property of NAND &NOR Gates, K map, TTL NAND gate, CMOS inverter. **(8H)** Internal test.	**UNIT-2: Combinational logic circuits-**HA, FA, HS, FS, encoder, decoder, multiplexer, demultiplexer, A-D & D-A Conversion. Successive approximation ADC. **(10H)**	**UNIT-3**: Flip flops, Registers and counters. Design of synchronous counter using K Map. **(8H)**
VI Sem B.Sc.	**Revision** **UNIT-1:** Introduction to Microcontroller-Types, Architecture, Registers. Memory organization of 8051. counters & timers, TCON, TMOD, SCON & PCON. **(3H)**	**Revision** UNIT-2: Interrupts, addressing modes, Data transfer instuctions, Examples. Logical & arithmetic instructions, ALP. UNIT-3: Jump & Call instructions, **(12H)**	**Revision** simple programs. 8051 programming using C.(8H) Internal test. **Unit-4:** Basic interfacing concepts, interfacing of 8051 to keyboard, stepper motor, DAC, ADC & Traffic light controller. **(12H)**	

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DEPARTMENT OF ELECTRONICS

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR II STAGE, BENGALURU-55.

NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(I, III & V Semesters for the Academic Year 2019-20) Reopen - 8.7.2019

Class	July	August	September	October
I Sem B.Sc.	**UNIT-1:** DC and AC response of Electronic passive components. **(10H)** UNIT-2: Networks Theorems (DC analysis) KCL, KVL, (2H)	**UNIT-2:** open and short circuits, Voltage and current divider theorems. Networks Theorems- Thevenin's, Norton's, and Superposition Theorems. **(7H)** **UNIT-3:** RPS, HWR, FWR, Filters (9H) Internal Test.	Zener diode & Transistor series. regulator. (4H) UNIT-4: BJT and FET- Working, biasing, Characteristics, Types of biasing circuits, Transistor as a switch. (12H)	JFET-Working, parameters, comparision with BJT. **UNIT-5:** Number systems and codes- Number systems and inter conversion. BCD, Gray, and excess-3 codes. ASCII and EBCDIC codes. **(13H)** Test and Assignments.
III Sem B.Sc.	**UNIT-3:** C Programming- Introduction, structure, operators, evaluation of expressions, Arrays, **(6H)**	**UNIT-3:** Input and Output statements, library functions, programs. **(4H)** UNIT-4: Decision making, branching and looping- **(4H)** Internal test.	**UNIT-4:** for loop, do loop, while loop, function arguments and passing, programs. **(4H)** UNIT-5: Structures and unions- **(4H)**	Structures and unions: Arrays of structure, structure and functions, examples. **(6H)** Test and Assignments.
V Sem B.Sc.	**UNIT-1:** Introduction to Microprocessor- Features, different buses, addressing modes, Instruction set, T states, Delay oops, **(9H)**	**UNIT-2:** Examples on delay loops Stack operations, subroutine calls and returns, Assembly level Programs of various operations. Interrupts, and basic interfacing concepts. Internal test. **(12H)**	**UNIT-3**: I/O instructions and Interfacing- Memory interfacing, i/o interfacing concepts, key board and LED interfacing. **(4H)** Antennas: Full unit **(8H)**	**Unit-5:** Television- Introduction, Scanning, TV standards, monochrome TV transmitter and receiver, Color TV concepts and numerical problems. **(8H)** Internal test.

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ACADEMIC PLANNER

DEPARTMENT OF ELECTRONICS

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR II STAGE, BENGALURU-55.

NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(II, IV & VI Semesters for the Academic Year 2019-20) Reopen - 09.01.2020

Class	January	February	March	April
II Sem B.Sc.	**UNIT-1:** Small Signal Amplifier-CE Amplifier, Swamped Amplifier, Multistage Amplifier, Darlington Amplifier and JFET Amplifier. **(12H)** -	**UNIT-2:** Classification, class A ,Class B power amplifier and tuned amplifiers- **(9H)** **UNIT-3:** Differential Amplifier-derivation for q point, **(7H)** Internal test.	**Current mirror-** Circuit and working **UNIT-4:** Effect of –ve FB, Expressions and numerical problems. Oscillators-circuits, Multivibrators,numerical problems. **(14H)**	**UNIT-5:**MOSFET, UJT, SCR, LED and LCD – Construction, working and characteristics. Triac and Diac- Symbol, features, operation and applications. **(14H)** Internal test and assignments.
IV Sem B.Sc.	**UNIT-1:** Boolean algebra, SOP & POS. Basic logic gates. Universal property of NAND &NOR Gates, K map, TTL NAND gate. (6H)	CMOS inverter. **UNIT-2: Combinational logic circuits**-HA, FA, HS, FS, Encoder, Decoder, Multiplexer, Demultiplexer. (8H)	A-D & D-A Conversion. Successive approximation ADC. **UNIT-3**: Flip flops, Registers and counters. Design of synchronous counter using K Map. (8H)	Programmable Logic Devices-SPLDs, ROM, PLA and GAL. CPLD and FPGA. (6H)
VI Sem B.Sc.	**UNIT-1:** Introduction to Microcontroller-Types, Architecture, Registers, Counters and timers, TCON,SCON, PCON, **(10H)** Interrupts-IE, IP. **(2H)**	**UNIT-2**:Addressing modes, Instruction set, Assembly level Programs of various operations. **(8H)** Jump & Call instructions, simple programs. **(3H)** Internal Test.	**UNIT-3:** 8051 programming using C, Timer/Counter programming, Example programs. **(6H)** **UNIT-4:**Interfacing with 8051-Keyboard , seven segment display. **(6H)**	**Unit-5:** DAC, ADC and Traffic light controller interfacing. PIC Micro controller- PIC 16F877,Features, pin diagram, Interfacing with LCD. **(7H)** Internal test.

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DEPARTMENT OF ELECTRONICS

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR II STAGE, BENGALURU-55.

NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(I, III & V Semesters for the Academic Year 2018-19) Reopen – 02/07/2018

Class	July	August	September	October
I Sem B.Sc.	**UNIT-1:** DC and AC response of Electronic passive components. **(10H)** UNIT-2: Networks Theorems (DC analysis) KCL, KVL, open and short circuits, Voltage and current divider theorems. **(6H)**	**UNIT-2:** Networks Theorems-Thevenin's, Norton's, and Superposition Theorems. **(3H)** **UNIT-3:** Semiconductor Diode and its applications-Zener diode Regulator, Transistor series regulator. **(13H)** Internal Test.	**UNIT-4:** BJT and FET-Working, biasing, Characteristics, and amplifiers. **(13H)** UNIT-5: Number systems and Codes-Types of number systems and interconversion. **(3H)**	**UNIT-5:** Number systems and codes- BCD, Gray, and excess-3 codes. ASCII and EBCDIC codes. Numerical problems. **(9H)** Test and Assignments.
III Sem B.Sc.	**UNIT-3:** C Programming-Introduction, structure, operators, evaluation of expressions, Arrays, Programs. **(8H)**	**UNIT-3:** Input and Output statements, library functions, programs. **(4H)** UNIT-4: Decision making, branching and looping- **(4H)** Internal test.	**UNIT-4:** for loop, do loop, while loop, function arguments and passing, programs. **(4H)** UNIT-5: Defining, declaring and initializing structure, arrays of structure. **(4H)**	**UNIT-5:** structure and functions, unions. Examples **(4H)** Test and Assignments.
V Sem B.Sc.	**UNIT-1:** Introduction to Microprocessor- Features, different buses, addressing modes, Instruction set, T states, Delay oops, Numerical examples. **(12H)**	**UNIT-2:** Stack operations, subroutine calls and returns, Assembly level Programs of various operations. Interrupts, and basic interfacing concepts. Internal test. **(12H)**	**UNIT-3**: I/O instructions and Interfacing- Memory interfacing, i/o interfacing concepts, key board and LED interfacing. **(2H)** Antennas: Full unit **(8H)**	**Unit-5:** Television-Introduction, Scanning, TV standards, monochrome TV transmitter and receiver, Color TV concepts and numerical problems. **(8H)** Internal test.

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NAME: Prof. Thipperudra Swamy K.M. HOD of Electronics.

(II, IV & VI Semesters for the Academic Year 2018-19) Reopen – 24/01/2019

Class	January	February	March	April
II Sem B.Sc.	**UNIT-1:** Small Signal Amplifier-CE Amplifier, derivation for Av, Swamped Amplifier. **(4H)**	Multistage Amplifier, Darlington Amplifier and JFET Amplifier.**(8H)** UNIT-2: Power and Tuned Amplifier-Classification, class A power amplifier, Class B push pull power Amplifier, tuned amplifiers. Internal test. **(8H)**	**UNIT-3:** Differential Amplifier- derivation for q point, Current mirror. **(9H)** **UNIT- 4:** Concept, effect of -ve FB. Oscillators- Types, circuits, working and expressions . **(9H)**	Multivibrators, numerical problems. **(3H)** **UNIT-5:** MOSFET- Working & characteristics. UJT, SCR, LED and LCD – Construction, working and characteristics. **(14H)**
IV Sem B.Sc.	**UNIT-1:** Boolean algebra, SOP & POS. Basic logic gates. (2H)	Universal property of NAND &NOR Gates, K map, TTL NAND gate, CMOS inverter. (8H) Internal test.	**UNIT-2: Combinational logic circuits-**HA, FA, HS, FS, encoder, decoder, multiplexer, demultiplexer, A-D & D-A Conversion. Successive approximation ADC. (10H)	**UNIT-3**: Flip flops, Registers and counters. Design of synchronous counter using K Map. (8H)
VI Sem B.Sc.	**UNIT-1:** Introduction to Microcontroller-Types, Architecture, Registers. (3H)	Memory organization of 8051, counters & timers, TCON, TMOD, SCON & PCON. (7H) UNIT-2: Interrupts, addressing modes, Data transfer instuctions, Examples, (5H)	Logical & arithmetic instructions, ALP. (5H) UNIT-3: Jump & Call instructions, simple programs. 8051 programming using C.(8H) Internal test.	**Unit-4:** Basic interfacing concepts, interfacing of 8051 to keyboard, stepper motor, DAC, ADC & Traffic light controller. PIC Microcontroller-features & interfacing. **(13H)**

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20-21

ACADEMIC PLANNER

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Revanasiddappa. S. Masali. Department: Electronics.

(I, III & V Semesters, for the academic year- 2020-21.

on-line classes: 01.09.2020
on-line & OFFline: 17.11.20 to 15.02.21

Class	September	October	November	December & Jan 2021
I Sem B.Sc.	← Practical	Classes - - -	- - -	- - - →
III Sem B.Sc.	OP. Amp: Parameters. Characteristics of Ideal OP Amp. -ve f.b in OP. Amp. Applns. Adder, Subtractor, Differentiator & Integrator. Derivation for AV.	Small - Signal amplifiers. O/p wave forms: Problems. Active Filters: Low-pass High-pass. Band pass and Band Reject filters: Derivation for O/p Voltage of L.P & H.P.	Fixed & Variable Voltage regulators: IC 555 multivibrators. Ckt expln. Eqn for frequency of oscillations.	Astable & Mono-Stable Multivibrators. Revision of Unit 1&2 with previous papers.
V Sem B.Sc.	Unit 1: Noise & Tr line. Defn: Internal & External noise Equivalent ckt: Primary & Secondary constants. VSWR. Losses in Tr line. Wave propagation Unit 2: Analog Modulations. Am, FM & Pm Derivation of Am wave frequency spectrum.	Am & FM Modulators: Block diagram of Am & Fm Transmitters. Unit 3: Radio-Receivers. Am & Fm Detectors. Block diagram of Superheterodyne Am & Fm Receivers.	Unit 4: Instrumentation. Transducers: Tempr Transducers. Photo-electric Transducers: MIC LVDT. Chopper, Carrier & Lock in amplrs.	Unit 5: Bio-Medical Instruments: Electrodes. Block diagram & expln of ECG & EEG. Unit 4: Antenna's. Power radiated. Radiation Pattern. Numerical Problems.

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(Revanasiddappa. S. Masali)

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VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Revanasiddappa. S. Masali. Department: Electronics.

ONline classes: 03.05.2021 - 14.7.2
OFFline: 26.7.21 to 14.08.2021.

(II, IV & VI Semesters, for the academic year- 2020 - 21.

Class	~~April~~ May	~~May~~ June	~~June~~ July	~~July~~ Aug.
II Sem B.Sc.	← Practicals - - -	- - -	- - -	→
IV Sem B.Sc.	Unit 1: Boolean Algebra and Logic gates: De-morgans Theorem SOP & POS. TTL Nand gates. TTL-IC Terminology. Half adder & Full Adder.	Unit 4: Introduction to Verilog: History. Verilog module, Delays Data flow, Behavioral, Structural & mixed design styles.	Language Elements: Data types, Parameters Expressions: operators and operands: Gate level modeling MOS switches. Example.	Unit 5: Data-flow & Behavioral Modeling Contineous assignment. Procedural. Constructs. Procedural Assignment. Illustrative Examples.
VI Sem B.Sc.	Digital Communication: PAM, PWM, PPM & PCM. Digital Modulation. ASK, FSK, PSK. Modem modes of operation. Data Transmission Capacity of a Channel.	Unit 2: Radar Range Eqn Pulse, MTI, CW & FM CW Radars. Block & expln. Unit 3: Satellite Commn. Need, orbits, UP-Link & downlink systems Ground Station: TDMA & FDMA	Unit 4: Optical Fibers Block diagram, light propagation. Numerical aperture. Light sources. LED, Laser diodes epln. Losses in OFC. Photo detectors.	Unit 5: Cellular Communication & wireless LAN. Roaming frequency re-use, data encryption 2G, 3G, 4G. Concepts. OSI-Model

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VIVEKANANDA DEGREE COLLEGE, BANGALORE -55

MONTHLY REPORT OF ONLINE CLASSES FOR THE MONTH OF ...September 2020...

Name of the Faculty: ...Thippeswamy K.M... **Department:** ...Electronics...

Date: **From:** ...01.09.2020... **To:** ...30.09.2020...

Sl.No.	Date	Time	Class	Section	Subject	Topic/Basics discussed	Remarks
1	2/9/20	5 to 6 PM	III Sem	B	Electronics	Introduction about online classes, Zoom app	
2	3/9/20	6 to 7 PM	V Sem	B	——— " ———	Introduction about syllabus contents	
3	4/9/20	5 to 6 PM	III Sem	B	——— " ———	Discussion of Syllabus contents	
4	5/9/20	5 to 6 PM	V Sem	B	——— " ———	Video clipping of µp basics	
5	7/9/20	5 to 6 PM	III Sem	B	——— " ———	Introduction to computers	
6	10/9/20	5 to 6 PM	V Sem	B	——— " ———	Comparision and applications of µP & µC	
7	11/9/20	5 to 6 PM	V Sem	B	——— " ———	Types of microprocessors	
8	16/9/20	5 to 6 PM	III Sem	B	——— " ———	Introduction to computers continued	
9	18/9/20	5 to 6 PM	III Sem	B	——— " ———	Introduction to computers Languages	
10	19/9/20	5 to 6 PM	V Sem	B	——— " ———	Architecture of µP 8085	
11	21/9/20	5 to 6 PM	V Sem	B	——— " ———	Architecture of µP continued	

Signature of the Faculty

Signature of the HoD

Principal

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VIVEKANANDA DEGREE COLLEGE, BANGALORE -55

MONTHLY REPORT OF ONLINE CLASSES FOR THE MONTH OF September 2020

Name of the Faculty: Thipperudra Swamy K.M **Department:** Electronics

Date: **From:** 01: 09: 2020 **To:** 30: 09: 2020

Sl.No.	Date	Time	Class	Section	Subject	Topic/Basics discussed	Remarks
12	23/9/20	5 to 6 PM	III Sem	B	Electronics	Introduction of C program	
13	24/9/20	5 to 6 PM	V Sem	B	"	μp 8085 register arrays	
14.	28/9/20	5 to 6 PM	V Sem	B	"	ALU, Special purpose registers. Timing & control unit	
15	30/9/20	5 to 6 PM	III Sem	B	"	C tokens	

Signature of the Faculty

Signature of the HoD

Principal

19-20

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Plan of Syllabus of Prof. Revanasiddappa. S. Masali. Department: ELECTRONICS.

(I, III & V Semesters, for the academic year- 2019 - 20.) Re-open: 08-07-2019.

Class	July	August	September	October
I Sem B.Sc.	← Practicals			
III Sem B.Sc.	Operational amplifiers: Block diagram, Parameters, Characteristics. 3 different IC's. Limitations of OP amp. OP Amp with -ve feed back, Inverting & Non Inverting Derivation for Av.	Applns of OP Amp: Adder, Subtractor, Diffe & Integrator. Derivation for O/P Voltage. Scale Changer & Examples. Wave form representation for Sine & Square waves. Numerical Problems.	Active Filters: Low pass, High pass, Band pass & Band reject Ckts: Derivation for O/P Voltage of L.P & H.P Filters. Instrumentation amplr. OSCillators using OP-Amp Ckt & expln of Wien-Bridge.	Fixed & Variable regulators Ckt expln. O/P Voltage equation. 555 Timer as Astable, Monostable multivibrator Ckt expln. Eqn for frequency.
V Sem B.Sc.	Unit 1: Noise & Tr. lines: Types, S/N & Noise figure Numerical problems. Tr. lines: Primary & Secondary Constants. VSWR. CSWR defn. Unit 2: Analog Modulation. AM, FM, PM. Derivation for Am. wave Freq. Spectrum.	AM & FM Modulators. Block diagram of AM & F.M. transmitters with AFC. Pre-emphasis, Comparision. Unit 3. Radio Receivers: Diode & Tr. detectors: FM detectors. Balanced Slope detector Characteristics of Radio receiver.	Super-heterodyne Receivers. Unit 4: Electronics Instrumentation: Characteristics. Transducers: Active & Passive. Temp. Transducers, Strain gauge, Photo electric transducers Pressure Transducers Introduction to Bio-Medical Instruments	Electrodes for ECG, EEG & EMG. Block diagram of ECG & EEG expln. Unit 4: Antenna Parameters: Derivation for power radiated & Radiation resistance.

(Revanasiddappa. S. Masali)

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19-20

ACADEMIC PLANNER

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Revanasiddappa. S. Masali. Department: Electronics.

(II, IV & VI Semesters, for the academic year- 2019 - 20.) Re-open: 09.01.2020,

Class	January	February	March	April / May.
II Sem B.Sc.	← - - - - - - - -	Practicals - - - -	- - - - - - - - - -	- - - - - - - →
IV Sem B.Sc.	Unit 1: Boolean Algebra and logic gates: Boolean Laws, Demorgans Theorem, 3 & 4-Variable K-map. Numerical problems. Classification of digital ICs. Characteristics.	Unit 4: Verilog: History, Structure of HDL Comparision of HDL & VHDL, Verilog module Data flow, Behavioral & Sequential logic ckts. design exp in with examples. Language Elements.	Key words, Identifiers, Gate level modeling MOS. switches, Bidirectional switches problems on Expressions, Operands & Operators. Built in primitive gates. Illustrative ex.	Unit 5: Data flow modeling & Behavioural Modeling: procedural Constructs, loop statements delays, net delays with examples.
VI Sem B.Sc.	Unit 1: Digital Comm n: PAM, PWM, PPM & PCM. Digital Modulation: ASK, FSK, PSK, Digital Transmission Characteristics Modem - Modes of Modem operation.	Unit 2: RADAR System: Principle, Freq, Pulse Radar System, Range Eqn. MTI, & FMCW Radar Block diagram. Numerical problem. Unit 3: Satellite- Comm n, orbits, Satellite Sub systems Up link & Down link.	C-Band Transponder. Path loss Problem. TDMA, FDMA, Comparision GPS services: Unit 4: Optical - Fibers: Block diagram of OFC. light propagation. Derivation of Numerical aperture	Light sources of OFC, LED, Photodiode. Losses in Fibers. Unit 5: Cellular Communication & wire less LAN.

(Revanasiddappa. S. Masali)

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18-19

ACADEMIC PLANNER

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Revanasiddappa.S.Masali. Department: Electronics.

(I, III & V Semesters, for the academic year- 2018-19) Re-open of I/III/V Sem. 02.07.2018.

Class	July	August	September	October
I Sem B.Sc.	← Practicals ----	----	---- →	
III Sem B.Sc.	Unit 1: Linear Integrated Ckts. Classification, Adv & dis. adv. Fabrication of Monolithic IC's Operational amplifiers: Parameters, Characteristics, OP Amp with Negative feedback, Derivation for Av, Inverting & non-Inverting amplr.	OP. Amp: Adder, Subtractor, differentiator, integrator explⁿ. output waveform for sine & sq. wave. small signal H.w. Rectifier. Open-loop applicatⁿs: Comparator Characteristics, Schmitt trigger. Numerical Problems on OP. Amp.	Unit 2: Active Filters: Low pass & High pass filters. Derivation for output voltage Problems on L.P & H.P. Filters. Oscillators: Phase-shift & wien-bridge. Ckt, & working.	Fixed & Variable IC regulators: o/p voltage. Multivibrators: Astable & Monostable ckt diagram & explⁿ. 555 IC-Timer Ckt & working. Problems.
V Sem B.Sc.	I) Noise & Transmission lines Reflection Coefficient Voltage standing wave ratio. Prop. of wave II) Analog Modulation Techniques. AM, FM, PM, Derivation of AM. AM & FM Modulator. Comparision. AM and FM generators: Varactor diode modulator.	Block of AM & FM Transmitters Pre-emphasis. Numerical problem III). Radio Receivers: Diode & Transistor detectors. Ckt, working. Superheterodyne AM & FM. Receivers: De-emphasis. Characteristics of Radio Receivers Solving the previous Q.P.	Unit 4: Paper-VI. Electronic Instrumentation: Transducers: Active & passive, LVDT. MIC. Temp Transducers Instrumentation Amplifiers Chopper, Carrier & Lock in amp. U-5: Biomedical Instruments Electrodes for ECG, EEG & EMG.	Block diagram of ECG & EMG Explⁿ. Unit 4: Antennas: Radiation, Types. Gain, Bandwidth. Derivation of Radiation resistance, Grounded & un-Grounded antenna. Problems on Pt & Pr.

(Revanasiddappa.S.Masali)

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VIVEKANANDA DEGREE COLLEGE

18-19

ACADEMIC PLANNER

VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Revanasiddappa. S. Masali. Department: Electronics.

(II, IV & VI Semesters, for the academic year- 2018-19.) Re-open: 24.01.2019.

Class	January	February	March	April & May.
II Sem B.Sc.	← Practicals			→
IV Sem B.Sc.	Unit 1: Boolean Algebra & Logic gate: Boolean Laws. Demorgans Theorem. SOP & POS. K-map,	3 & 4 Variable K-map. Numerical Problems. Logic families. Classification of digital IC's. Characteristics. Unit 4: Verilog: History, Structure of HDL Module. Comparison. Dataflow Style, Behavioral Style	Structural & mixed design style explained with examples. Language Elements: Key words, Identifiers, Real & strings. Gate level modeling. MOS switches. Bi-directional Switches. Problems on Combinational ckts.	Unit 5: Dataflow modeling and Behavioral modeling. Continuous assignment. Timing & Control. Illustrative Examples.
VI Sem B.Sc.	Unit 1: Digital Comm n. PAM, PWM, PPM & PCM. Digital Modulation. ASK, FSK, PSK Characteristics.	Data Transmission: Capacity of a Channel. Modem: Classification. Unit 2: RADAR: Range Eqn. Pulse, MTI & CW, FMCW Radar Block diagram & explan. Unit 3: Satellite Comm n: orbits, need, Space segment Uplink & Down link, C-Band.	Path loss, effect of ground. TDMA, FDMA CDMA Concepts. GPS-Services. Unit 4: Optical Fibers: Need, light propagation. Numerical-aperture (NA). Light Sources, LED, Laser diode. Photo detectors.	Losses in Fibers. Unit 5: Cellular Communication. Concept, Freq reuse, Cell Spitting. Roaming. CDMA Technology. 2G, 3G, 4G Concepts. LAN. OSI model.

(Revanasiddappa. S. Masali) (HOD)

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VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Thipperudra Swamy. K.M **Department:** Electronics

(II, IV & VI Semesters, for the academic year- 2017-18) Reopen - 22/01/2018

Class	January	February	March	April
II Sem B.Sc.	Unit 1 classification of amplifiers CE amplifier. Derivation for Av. Expressions for Zi & Zo	Unit 1 - Multistage amplifiers JFET amplifiers. Unit 2: Power and tuned amplifier	Unit 3: Differential amplifier Unit 4: Feedback, Voltage Series feedback. Sinusoidal oscillators.	Unit 4: Multivibrators Unit 5: Special purpose devices.
IV Sem B.Sc.	Unit 1: Introduction about digital Signal and circuits	Unit 2: Combinational logic circuits upto Demultiplexer using gates	D/A & A/D Conversion Unit 3: Sequential logic circuits - upto flip flops	Unit 3: Registers and counters PLDs.
VI Sem B.Sc.	Unit 1: Introduction to Microcontroller	Unit 1: Microcontroller 8051 - Architecture Registers Unit 2: - Interrupts addressing modes	Unit 2: Data transfer and arithmetic instructions Unit 3: 8051 programming in C. Timer & counter Programming.	Unit 4: Interfacing with 8051 and Unit 5: - PIC Microcontrollers

HOD

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T.M. Thipperudra Swamy
HOD of Electronics,
Vivekananda Degree College
Rajajinagar, Bangalore-560 055

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VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. Revanasiddappa. S. Masali Department: ELECTRONICS.

(II, IV & VI Semesters, for the academic year- 2017-18) Reopen ; 22.01.2018.

Class	January	February	March	April
II Sem B.Sc.	← Practicals	— — —	— — —	→
IV Sem B.Sc.	Unit 1: Boolean Algebra Boolean Laws Demorgans theorem. SOP, POS. K-map. 3 & 4 Variables. numerical example.	Unit1: Continued: Logic families, classification of Digital IC's, Characteristic. Unit 4: Verilog: Brief History, Structure of HDL module. Comparision of Verilog & VHDL.	Verilog: Delay, Data flow Style, Behavior Style, Structural & Mixed Design Style. Simulating Design. Language elements: Keywords, Identifiers, format, real & string.	Expressions, Operand & operator. Gate level modeling. Built in primitive gate. Unit 5. Dataflow & Behavior modeling Examples.
VI Sem B.Sc.	Unit 1: Digital Commn. PAM, PWM, PPM, PCM. Digital modulation ASK FSK PSK, Characteristic of Data transmission. Capacity of Channel, noise, cross talks, echo supressors. Modems: Classification.	Unit 2: RADAR: Frequencies Derivation of Range eqn. Pulse Radar, MTI, CW and FM CW Radar Block & expln. Unit 3: Satellite Commn, orbits, Adv. of Geo-stationary orbit Block diagram of Satellite Sub-systems, Up-link, down link	C-band Satellite Transponder. TDMA, FDMA, CDMA. expln. GPS. services, SPS & PPS. Unit 4: Optical fiber Commn need, OFC cable, light propagation through OFC, light Sources. LED & Laser diode Construction & working	PIN-photo diode & Avalanch photo diode Losses. Advantages Unit 5. Cellular Communication: SIM Card - IMEI No. Block of cellular Hand Set GSM CDMA, 2G, 3G 4G. Concept LAN, Wi-Fi & Wi-max.

(Revanasiddappa. S. Masali)

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Plan of Syllabus of Prof. Revanasiddappa. S. Masali **Department:** ELECTRONICS.

(II, IV & VI Semesters, for the academic year- 2017-18) Reopen ; 22.01.2018 .

Class	January	February	March	April
II Sem B.Sc.	← — Practicals — — —			- - - - - - - - - - - - →
IV Sem B.Sc.	Unit 1: Boolean Algebra Boolean Laws Demorgans theorem. SOP, POS. K-map 3 & 4 Variables. numerical example.	Unit1: Continued: Logic families, classification of Digital IC's, Characteristics. Unit4: Verilog: Brief History Structure of HDL module. Comparision of Verilog & VHDL.	Verilog: Delay, Data flow style, Behavior Style, Structural & Mixed Design Style. Simulating Design. Language elements: Key words, Identifiers, format, real & string.	Expressions. Operand & operators. Gate level modeling. Built in primitive gate. Unit 5: Data flow & Behavior modeling Examples.
VI Sem B.Sc.	Unit 1: Digital Comm. PAM, PWM, PPM, PCM. Digital modulation ASK, FSK, PSK, Characteristics of Data transmission, Capacity of Channel, noise, Cross talks, echo suppressors. Modems: Classification.	Unit 2: RADAR: Frequency Derivation of Rangeeqn. Pulse Radar, MTI, CW and FM CW Radar Block & explain. Unit 3: Satellite Comm. Orbits. Adv. of Geo-stationary orbit Block diagram of Satellite Sub-systems, Up-link, down link	C-band Satellite Transponder. TDMA, FDMA, CDMA. explain GPS - services, SPS, & PPS. Unit 4: Optical fiber Comm need, OFC cable, Light Propagation through OFC, Light sources. LED & Laser diode Construction & working	PIN - photo diode & Avalanch photo diode Losses. Advantage. Unit 5: Cellular Communication: SIM Card - IMEI No. Block of Cellular Hand Set GSM EDM, 2G, 3G 4G. Circuit LAN, Wi-Fi & Wi-max.

(Revanasiddappa. S. Masali)

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VIVEKANANDA DEGREE COLLEGE, RAJAJINAGAR-II STAGE, BENGALURU-55

Plan of Syllabus of Prof. K.M. Thipperudra Swamy. **Department:** ELECTRONICS.

(II, IV & VI Semesters, for the academic year- 2016-17)

Re-opening: 02.01.2017.

Class	January	February	March	April
II Sem B.Sc. Electronic Circuits & Special Purpose devices. EL-201T	Unit 1: Small signal amplrs: Classification CE amplr. derivation of Av. Zin & Zout - Multistage amplr. RC-Coupled, direct Coupled - JFET- Amplr ckt operation Expression for Voltage gain Numerical problems 12Hrs	Unit 2: Power and Tuned amplifiers. Class A, B, C. Push pull, class B push pull. Tuned amplr - Single & double 9Hrs Unit 3: Differential amplrs. Re-model, diff gain. CMRR. inputs & o/p impedance 5Hrs	3) Current mirror: differential amplr with current mirror. 4Hrs Unit 4): Feed back & oscillators. +ve & -ve f.b. block diagram. effect of -ve f.b. Zi, Zo & B.W. Sinusoidal oscillators. Hartley & Colpitts Oscillators. Multivibrators: Monostable, Astable working. 12Hrs	Unit 5: Special purpose devices. MOSFET. UJT, SCR, LED, LCD. Tunnel diode, Veractor diode. 7-segment display. 14Hrs
IV Sem B.Sc. Digital Electronics & Verilog. EL-401T	Unit 1: Boolean Algebra and logic gates. K-map - 3 & 4- Variables. TTL Ic's terminology. CMOS inverter, Comparision. 10Hrs	Unit 2: Combinational logic circuits: half & full adder subtractor, BCD to decimal de coder. BCD to 7-segment decoder: MUX: 4:1 & Demux. D-A Converter R-2R ladder A-D Conversion 10Hrs	Unit 3: Sequential logic Circuits; RS-Latch. D-FF JK FF, Registers & Counters. Asynchronous Counter. 4bit Serial & parallel Counter. 3 bit up-down counter. 8Hrs	Synchronous counter design using K-map. programmable logic devices. Types of PLDs mention. 4Hrs
VI Sem B.Sc. Micro-Controllers EL-602T	Unit 1: Introduction to micro-Controller. MC-8051, Architecture, Key features of 8051. 10Hrs Unit 2: 8051- Interrupts, Addressing mode & Instruction set 4Hrs	2) Data transfer instructions: Logical instructions. Arithmatic instructions. 6Hrs Unit 3: 8051 programming in C. Jump & Call instructions. 8051 programming: I/O programs. Timer/Counter programming. 9Hrs	Unit 4 Interfacing with 8051: Basic Concepts. Interfacing of 8051 to Key board, Seven Segment display, Stepper motor DAC, ADC & traffic light Controller Ckts. 9Hrs	Unit 5: PIC - Micro Controllers: Core features, over-views of PIC Mc. PIC-16F877A-features Pin diagram. interfacing with LCD 4Hrs

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Plan of Syllabus of Prof. Revanasiddappa. S. Masali. **Department:** ELECTRONICS.

(II, IV & VI Semesters, for the academic year- 2016-17.)

Class	January	February	March	April
II Sem B.Sc.	—	—	—	—
IV Sem B.Sc. Digital Electronics & Verilog	Unit 4: Introduction to Verilog: History of HDL. module, Simulation, Verilog module, Delays, data flow style, Behavioral structural mixed design. Language elements 7Hrs.	4) Expressions: operand & operators, types of expressions. Gate level modeling: Built-in Premitive gates: Examples. Combinational & sequential Logic Ckts. (5Hrs)	Unit 5: Data flow modeling and Behavioral " . Continuous assignment, net declaration assignment, delay net delay & examples. (6Hrs)	5) Behavioral modeling: Procedural Constructs timing Controlls. Block Statements. illustrative examples. (5Hrs)
VI Sem B.Sc. Communi-nication II.	Unit 1: Digital Comm n: PAM, PWM, PPM, ASK FSK, PSK, Digital transmission modems - classification (8 Hrs) Unit 2: Radar- Systems: Freq & Power used, Radar range equation derivation (5+1Hrs)	2) MTI Radar, CW Radar & FM CW Radar Blocks & explⁿ. numerical example (5+1Hrs) Unit 3) Satellite Comm n: Orbits, Block diagram of Satellite Sub system, C-band, TDMA, FDMA & CDMA. GPS - service. (8 Hrs)	Unit 4: Optical Fiber Communication: Block diagram, Light propagation derivation for NA & θ. Losses. Adv & dis advantage. light sources. (9+1Hrs) Unit 5: Cellular Comm n & Wireless LAN: (04 Hrs)	5) Local Area Network OSI-model, Concept of Blue-tooth, Wi-fi & wi max. CDMA, Comparitive study of GSM & CDMA (05 Hrs)

(R. S. Masali)
Sign. of the Teacher.

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Plan of Syllabus of Prof. K.M. Thipperudra Swamy **Department:** ELECTRONICS

(I, III & V Semesters, for the academic year- 2016-17 **)**

Class	July	August	September	October
I Sem B.Sc. Basic Electronics I	Unit 1: D.C & A.C. response of passive components: RC & RL ckts. AC applied to RC & RL ckts. Series & parallel RLC ckts. Transformer, principle, constn. Switches, fuse, Relay - (10 Hrs) Unit 2: Network theorems. KCL, Voltage & current divider 3 Hrs.	Network theorems: Thevenian, Norton, superposition, reciprocity steps involved. Max. power transfer theorem. problems (06 Hrs) Unit 3: Semiconductor diodes applications, PN-junction. Rectifiers, Filters types ckt. Zener diode regulators, Transistor series regulator 10 Hrs	Unit 4: BJT and FET Construction, CE, CB, CC, Defn of α, β & γ. Study of CE & CB characteristics. h-parameters. Tr Biasing types, expln. Tr as switch. JFET construction & working. FET parameters: (13 Hrs)	Unit 5: Number systems & codes. Binary, hexa, octal & vice-versa. Sub- using 2's compliment. BCD codes, Gray & excess-3 code. Self complimenting property (12 Hrs)
III Sem B.Sc. Linear IC's & C program	Unit 3: C-programming Key words, identifiers, constants datatype. Arithmatic operators, Array concepts I/n. O/P statements. Print(f) scan(f) & getch(f), & library functions (12 Hrs)	Unit 4: Decission making, Branching and looping. if-else if-else, switch statement, function arguments and passing, returning values (8 Hrs)	Unit 5: Structures and unions: defining & declaring a structure, copying & comparing structure variable array. Union size. example programs. (8 Hrs)	—
V Sem B.Sc. MP & Instrumentations.	Unit 1: Introduction to MP. Basic block diagram, speed wordsize, memory size. MP-8085: Architecture internal registers, flag. stack pointer, progr. counter. 8085-instructions operation code, incr & decr machine control. (9 Hrs)	Unit 2: Stack operations & MP-programming. program for data transfer addn & subtraction of 8 & 16 bits multiplication, storing, no. of 1's & 0's, testing for zero condn. N-byte nos. progr. to find GCD of two integers. (8 hrs)	Unit 3: I/O instruction and interfacing. Basic, compatible ICs. LED display interfacing PPI IC-8255 (8 hrs) Unit 4: Measurement systems, Transducers & Electronic Instrumentation (8 hrs)	Unit 5: Bio-medical instruments: origin ECG, EEG & EMG. Block diagrams & expln: electrode for the above. (8 hrs)

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Plan of Syllabus of Prof. Revanasiddappa. S. Masali, Asso. prof. **Department:** ELECTRONICS

(I, III & V Semesters, for the academic year- 2016-17.)

Class	July	August	September	October
I Sem B.Sc.	–	–	–	–
III Sem B.Sc. Linear Integrated circuits & C programming.	Unit 1) Integrated Circuits and - Operational Amplifrs. Classification, terminology. OP-Amplifrs: parameters. IC-741, types. LM308, OP07. Comparision. Open-loop mode. OP-Amp with -ve f.b. (10 Hrs)	1) Derivation for Av, Adder, Sub, Averagg amplr. Integrator & differentiator. Small signal half wave rectifier (4 Hrs) Unit 2: Application of operational amplr and IC 555. Open loop applications. (6 Hrs)	2) First order Active Filter. Lowpass high-pass, Derivation for cut off freq & problems. phase-shift & wien bridge Oscillator using OP Amp. Fixed & Variable IC-regu--lators. LM-317. (10 Hrs)	2) 555 - Timer: functional diagram, Astable multivibrator. 555 timer & working. Eqn for freq of oscillation Mono-stable M.V. (4 Hrs)
V Sem B.Sc. Communi-nication I.	Unit 1: Noise & Transmission lines: Internal, external, Noise figure, Tr line: Reflection coefficient, Sky wave (7 Hrs) Unit 2: Analog Modulation. Am, Fm, PM, derivation power relation Am collector modulator Limitation of Am & Fm (5 Hrs)	2) FM: Freq. Spectrum, B.W. freq deviation. Fm generator, Block diagram FM transmitter. Pre- & de- emphasis. (5 Hrs) Unit 3: Radio- Receivers; Linear & diode detector, Fm detector, Fm Super heterodyne, qualitative Study of sensitivity, selectivity (9 Hrs)	Unit 4) Antennas: Radiation mechanism. Directive gain, power gain B.W & Beam widths. Derivation for power radiated by antenna. Numerical problems. (8 Hrs)	Unit 5: Television: Scanning: blanking & Synchronizing pulses. TV Transmitter and Receiver. Colour TV. primary & secondary Colours. CCTV. (8 Hrs)

(R.S. Masali)

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