SRI RAMAKRISHNA
COLLEGE OF ARTS & SCIENCE (Autonomous)
Formerly SNR Sons College
S.N.R.CollegeRoad, Coimbatore-641006, TamilNadu, India.
"Scheme of Examination along with Distribution of Marks and Credits"
CBCSPATTERN
UNDERGRADUATEPROGRAMMES

B.Sc. Electronics and Communication System Degree Course

(Forthestudentsadmittedduringtheacademicyear2018-2019andonwards)

Part	Study Components: Course Title with Course code	CIA	Comprehensive Exam Online	Comprehensive Exam Descriptive Theory	Comprehensive Exam Total	Total	Credits
	SEMESTER I						
I	**Language:18T01**Tamil–I/**18H01**Hindi–I/**18F01**French–I/**18M01**Malayalam–I/**18A01** Arabic - I	30	-	70	70	100	3
II	**18E01:** English for Communication–I	30	-	70	70	100	3
III	**18EC101**: Basic Electronics	30	20	50	70	100	4
III	**18EC102**: Electric Circuits and Network Analysis	30	20	50	70	100	4
III	**18EC103: Practical I:** Components and Network Analysis	30	-	-	70	100	3
III	**18EC104: Allied I:** Mathematics–I	30	20	50	70	100	3
IV	**18VE01**: Value Education	100	-	-	-	100**	1
IV	**18CPE01:** PACE -I	-	-	-	100	100**	1
IV	**18ECJC1:** JOC - I	-	-	-	-	-	1$
	SEMESTER II						
I	**Language:18T02**Tamil–II/**18H02**Hindi–II/**18F02**French–II/**18M02**Malayalam–II/**18A02** Arabic – II	30	-	70	70	100	3
II	**18E02**:English for Communication–II	30	-	70	70	100	3
III	**18EC201**:Electronic Devices	30	20	50	70	100	4
III	**18ECP01:**Digital Electronics and Lab	50	-	50	100	100	5
III	**18EC202**: **Practical II:** Electronic Devices	30	-	-	70	100	3
III	**18EC203**: **Allied II:** Mathematics–II	30	20	50	70	100	3
IV	**18ES01:** Environmental Studies	100	-	-	-	100**	1
IV	**18CPE02:** PACE - II	-	-	-	100	100**	1
IV	**18ECJC2:** JOC - II	-	-	-	-	-	1$

			SEMESTER III					
III	**18EC301:**Electronic Principles and Circuits	30	20	50	70	100	4
III	**18EC302: Practical III:** Electronic Principles and Circuits	15	-	-	35	50	2
III	**18EC303: Practical IV:** Principles of Electronic Communication	15	-	-	35	50	2
III	**OPENELECTIVEI**	30	20	50	70	100	3
III	**18EC304**: **Allied III:** Computer Programming [C &C++Programming]	15	-	-	35	50	2
III	**18EC305: Allied Practical I:** Computer Lab-I	15	-	-	35	50	2
III	**18EC306:Skill Based Course–1:** Principles of Electronic Communication	30	20	50	70	100	3
IV	**18BT01:**BasicTamilI **18AT01 :** Advanced Tamil I	100	-	-	-	100**	1$
IV	**18CPE03:** PACE - III	-	-	-	100	100**	1
IV	**18ECJC3:** JOC - III	-	-	-	-	-	1$
			SEMESTER IV					
III	**18EC401:** Instruments and Measurements	30	20	50	70	100	3
III	**18ECP02:** Electronic Design Automation and Lab	50	-	50	70	100	5
III	**18EC402: Practical V:** Integrated Circuits	30	-	-	70	100	3
III	**ELECTIVE I**	30	20	50	70	100	4
III	**18EC403: Allied IV:** Computer Programming II Visual Basic	15	-	-	35	50	2
III	**18EC404: Allied Practical II :** Computer Lab II Visual Basic Programming	15	-	-	35	50	2
III	**18EC405: Skill Based Course – 2:** ICs and their Applications	30	20	50	70	100	3
IV	**18BT02:** Basic Tamil II **18AT02:** Advanced Tamil II	100	-	-	-	100**	1$
IV	**18CPE04:** PACE - IV	-	-	-	100	100**	2
IV	**18ECJC4:** JOC - IV	-	-	-	-	-	1$

	SEMESTER V						
III	**18EC501**: Wireless and Network Communication	15	-	-	35	50	2
III	**18EC502**: 8051Microcontroller	30	20	50	70	100	4
III	**18EC503: Practical VI:** Industrial and Power Electronics	30	-	-	70	100	4
III	**18EC504: PracticalVII:**8051Microcontroller	30	-	-	70	100	4
III	**18ECP03**: Bio Medical Instrumentation and Lab	50	-	50	50	100	5
III	**OPENELECTIVEII**	30	20	50	70	100	3
IV	**18EC505**: **Skill Based Course–3:** Industrial and Power Electronics	30	20	50	70	100	3
IV	**18CPE05:** PACE-V	-	-	-	100	100**	2
IV	**18ECJC5:** JOC - V	-	-	-	-	-	1$
	SEMESTER VI						
III	**18EC601:** Modern Communication System	15	-	-	35	50	2
III	**18ECP04:**VHDLProgramming and Lab	50	-	50	50	100	5
III	**18EC602: Practical VIII:** Arduino Programming	30	-	-	70	100	3
III	**18EC603: Practical IX:** Modern Communication system	30	-	-	70	100	3
III	**ELECTIVE II**	30	20	50	70	100	4
III	**18EC604: Skill Based Course–4:** Arduino Programming	30	20	50	70	100	3
III	**18EC605:Project and Viva Voce**	80	-	-	20	100	5
III	**Extension Activities:** 18NS01NSS/18NC01NCC/18SP01SPORTS/18YR01 YRC/18RR01 RRC/ 18SI01 SIS#	100	-	-	-	100**	1

$$ExtracreditcoursesforthecandidateswhooptedotherlanguagesinPart–I
 #N o Comprehensive Examinations. Only Continuous Internal Assessment (CIA)
@No Continuous Internal Assessment (CIA).Only Comprehensive Examinations.
 **Marks will not be included in CGPA calculations.
$ Extra credit courses

	18ECE01	Audio Video Communication	
Elective–I	**18ECE02**	Material Science	
	18ECE03	Mobile Communication	
	18ECE04	Fundamentals of Embedded Systems	
Elective–II	**18ECE05**	Robotics	
	18ECE06	Telecommunication Switching and Networks	

List of Open Elective papers offered by the dept.	
Open Elective–I	Mobile phone servicing
Open Elective–II	Advanced PC Hardware

Summary
Part	**Subject**	**Papers**	**Credit**	**Total credits**	**Papers**	**marks**	**Total marks**
Part I	**Languages**	2	3	6	2	100	200
Part II	**English**	2	3	6	2	100	200
Part III	**Core**	21	78	92	22	2000	2400
	Allied	6	14		6	400	
	OPEN ELECTIVES	2	3	6	2	100	200
	Electives	2	4	8	2	100	200
	Skill Based	4	3	12	4	100	400
							3600
Part IV	**Lang.**	2	1	2$	2	100	200**
	PACE	3	1	3	5	100	500**
		2	2	4			
	EVS&VE	2	1	2	2	100	200**
Part V	**@Extension**	1	1	1	1	100	100**
	Total			**140**			

$-Extra credit courses   ****-NOTINCLUDEDINTOTALMARKS**
CIA: Continuous Internal Assessment   **Total Marks for the Programme: 3600**
CE: Comprehensive Examination   **Total Credits for the Programme: 140**

Dr. G.SENTHILKUMAR Chairman,
Board of studies in Electronics
SRI RAMAKRISHNA
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Semester	I
Credit	4
Max. Marks	CIA -30
	CE -70
	TOT =100

18EC101 BASIC ELECTRONICS

COURSE OBJECTIVE
- ❖ To become familiar with fundamentals of electronic components.
- ❖ To learn to use common electronic components.
- ❖ To design electronic circuits to perform realistic tasks.

UNIT I: RESISTORS [12 Hrs]
Resistors Specifications - Classifications of Resistors, Linear Resistors: Fixed Resistors (Carbon Composition, Thin Film, Thick Film, Wire Wound) - Variable Resistors (Wire Wound, Potentiometer, Trimmers), Non Linear Resistors: Thermistors, Photo Resistors, Varistors , Resistance designation- Colour Coding of Resistors- Detects in Resistors - Resistors in Series and parallel Combinations

UNIT II: INDUCTORS [12 Hrs]
Inductance – Inductors- Types of Inductors: Fixed Inductors: - Air Core Inductors Variable Inductors:- Variable Ferrite Core Inductor – Self Inductance of a coil – Mutual Inductance of Coil – Inductors in Series and Parallel with Mutual Inductance – Inductive Reactance – Energy Stored by an Inductor – Coil and Core Losses – Q Factor of Inductor – Factors Affecting Inductance of a Coil – Troubles in Coil.

UNIT III: CAPACITORS [12 Hrs]
Capacitance – Capacitors – Capacitor Specifications – Capacitor Action – Types of Capacitor: Fixed Capacitors: Electrolytic, Ceramic, Mica, Paper Variable Capacitors:- Gang Capacitors, Trimmer & Padders, Capacitors in Series and Parallel – Factors affecting the Capacitor – Capacitive Reactance – Troubles in Capacitors

UNIT IV: VOLTAGE AND CURRENT SOURCES [12 Hrs]
Batteries – Internal Resistance of a Sources – Concept of Voltage Source – Ideal Voltage source - Practical Voltage Source – VI Characteristics of Practical Voltage Source - Procedure for Determining Internal Resistance – Ideal Current Source - Practical Current Source - Equivalent Between Voltage Source and Current Source – Conversion of Voltage, Current Source

UNIT V: CIRCUIT CONTROL AND PROTECTIVE DEVICE [12 Hrs]
Switches – Switching Action – Types of Switches (SPST, SPDT, DPST, DPDT, Toggle Switch, DIP, Rotary Switch) – Analog and Digital Switches - Fuses Rating, Connectors, Insulators, Circuit Breaker, Relays (Electromagnetic Relay)

COURSE OUTCOME

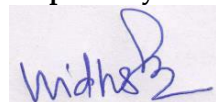**On completion of this course the students will be able to**   **Total Periods: 60 Hrs**
- ❖ Identify electronic components
- ❖ Differentiate and demonstrate the voltage and current source.
- ❖ Put into practice and use the electronic components

TEXT BOOKS:
1. R.S.Sedha, "A Text Book of Applied Electronics", S. Chand & Company Ltd, RevisedI Edition, 2008 (Unit I, II, III & V)
2. S.P.SHARMA, "Basic Radio and B/W, Colour Television", Tata Mcgraw Hill Publishing, 5th Edition2007 (Unit IV)

REFERENCE BOOKS:
1. Bernard Grob, "Basic Electronics" Mc Graw Hill, 10thEdition, 2008.
2. S.Salivahanan, N.Sureshkumar, A. Vallavaraj, "Electronic Devices and circuits", Tata Mc Graw Hill, 2nd Edition 2011.

Prepared by   **Approved by**

(Dr. V. Sidharthan)   (Dr. G. Senthilkumar)

Semester	I
Credit	4
Max. Marks	CIA -30
	CE -70
	TOT =100

18EC102 ELECTRIC CIRCUITS AND NETWORK ANALYSIS

COURSE OBJECTIVE
❖ To enable the students to learn the basic concept of various electric circuits and to analyze different network theorems.
❖ To grab the knowledge of transient response of series and parallel AC circuits.

UNIT I: ELECTRICITY [12 Hrs]
Introduction – Electric field - potential and potential difference, Unit of potential difference – Electric current – Unit of Electric current – Difference between electric charge and current - Electron and conventional current flow - Electrical resistance - Temperature coefficient of electrical resistance

UNIT II: ELECTRICAL ELEMENTS [12 Hrs]
Introduction – ohms law – Kirchhoff's current law – Kirchhoff's Voltage law – Method of Branch current, Node voltage method, Method of Mesh current.

UNIT III: ELECTRICAL CIRCUITS [12Hrs]
Series circuit – resistance in series- series I.R voltage drops – series voltage divider – total power in a series circuit – opens in a series circuit – shorts in series circuit - Parallel circuit- resistance in parallel circuit – equivalent resistance of a two branched circuit – total power in a parallel circuit- – opens in a parallel circuit – shorts in parallel circuit – Series parallel circuit.

UNIT IV: NETWORK THEOREMS [12 Hrs]
Thevenin's theorem – Norton's theorem – Conversion of Thevenin and Norton – Super position theorem – Millman's theorem – Star to Delta and Delta to Star conversion – Maximum power transfer theorem.

UNIT V: AC CIRCUITS [12 Hrs]
AC Circuit with resistance alone – Circuit with XL alone – Circuit with XC alone – Series reactance and resistance – parallel reactance and resistance - Series parallel reactance and resistance – Real power – Series resonance circuit - parallel resonance circuit – Q-factor.

COURSE OUTCOME
On completion of this course the students will be able toTotalPeriods: 60

❖ Design simple electric circuits and to analyze the network theorems.

❖ Analyze various electric networks by using theorems.

❖ Develop the electric circuits applications by using the principles.

TEXT BOOKS:
1. R.S.Sedha, "A Text Book of Applied Electronics", S. Chand & Company Ltd, RevisedEdition, 2008 (Unit I-V)

REFERENCE BOOK:
1. Bernard Grob, "Basic Electronics" Mc Graw Hill, 10thEdition, 2008

Prepared by   **Approved by**

(Mr. K. Ashok Kumar)   (Dr. G. Senthilkumar)

18EC103 PRACTICAL – I: COMPONENTS AND NETWORK ANALYSIS

COURSE OBJECTIVE

Semester	I
Credit	3
Max. Marks	CIA -30
	CE -70
	TOT =100

- ❖ To understand the fundamental principles of circuit theory
- ❖ To make use of circuit laws and theorems and measuring the circuit parameters.

Any 10 Experiments:

1. Measurement of Amplitude, Frequency and phase difference using CRO

2. Resistor in Series, Parallel and Series-parallel

3. Voltage sources in series, parallel and series – parallel

4. Voltage and Current divider

5. Verification of Ohm's law

6. Verification of Kirchhoff's law

7. Verification of Thevenin's Theorem

8. Verification of Norton's Theorem

9. Superposition Theorem

10. Millman's Theorem

11. Verification of Star-Delta Conversion

12. Maximum power Transfer Theorems

13. Series resonance circuit

14. Parallel resonance circuit

15. Frequency response of R, L &C

COURSE OUTCOME
On completion of this course the students will be able to

- ❖ Apply the concept of basic circuit and theorems
- ❖ Simplify thecircuits using series and parallel equivalents and using Thevenin's and Norton's equivalent circuits.
- ❖ Design resonance circuits.
- ❖ Use the oscilloscope for the display and measurements of signals.

Prepared by   **Approved by**

(Mr. K. Ashok Kumar)   (Dr. G. Senthilkumar)

Semester	I
Credit	3
Paper Type	Allied
Max. Marks	CIA -30
	CE -70
	TOT =100

18EC104 – MATHEMATICS - I

COURSE OBJECTIVE
To train the students on Matrices, Calculus, Laplace transforms and Fourier series.

UNIT I   MATRIX ALGEBRA

(8)

Basic concepts – Different types of matrices – Operation on matrices – Inverse of a matrix – Solving Simultaneous equations[Cramer's Rule] - Eigen values and Eigen vectors, Cayley Hamilton Theorem.

UNIT II DIFFERENTIAL CALCULUS   (10)
Basic Concepts – uv Method –u/v Method – Differentiation of implicit funtions – Successive differentiation- Increasing and Decreasing Functions – Maxima and Minima of Functions of two variables.

UNIT III INTEGRAL CALCULUS   (10)
Basics – Integration, Definite Integration – Integration by partial fraction and by parts, Reduction formula (simple problems).

UNIT IV LAPLACE TRANSFORMS   (9)
Definition of Laplace Transforms – Properties of Laplace transforms – Inverse of Laplace transforms – Application of Laplace Transforms to solve ordinary differential equations.

UNIT V FOURIER SERIES   (8)
Dirchlet's conditions – General Fourier series of the function in $(0,2\pi)$ and $(-\pi,\pi)$ – Odd function and Even function – Half range Fourier series .

COURSE OUTCOMES:
After the completion of the course, students are able to
- Formulate problems on Matrices
- Evaluate the problems on Differential Calculus
- Evaluate the problems on Integral Calculus
- Solve the ODE problems using Laplace transforms
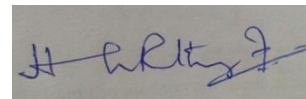- Explain the Fourier series and its applications.

Total Periods : 45

* Note : The Question paper consists 20% Theory and 80% Problems

TEXT BOOKS

1. Dr. S. Arumugam and A. Thangapandi Issac," Modern Algebra", Scitech Publication, 2007. – (**Unit I**)
2. S. Narayanan and T. K. M. Pillai **,** "Calculus Vol. I", Viswanathan Publishers,   Reprint 2012 . - (**Unit II**)
3. S.Narayanan and T.K.M. Pillai , "Calculus Vol. II", Viswanathan Publishers,   Reprint 2012. - (**Unit III**)
4. Kandasamy. P, Thilagavathi. K "Mathematics for B.Sc – Branch – I Volume III",   S. Chand and Company Ltd, New Delhi, 2004. - (**Unit IV**)
5. Dr.P. Kandasamy, K. Thilagavathy, "Mathematics for B.Sc. Branch – I , Volume IV, "   S.Chand & Co., Edition 2005. - (**Unit V**)

  Mr.E.VIVEK   Dr.HANNAH REVATHY F.
(Course coordinator)   (BOS Chairman)

Semester	II
Credit	4
Max. Marks	CIA -30
	CE -70
	TOT =100

18EC201 ELECTRONIC DEVICES

COURSE OBJECTIVE

❖ To enable the students to understand and gain the knowledge on semiconductor devices.

❖ To acquaint the students with construction, theory and characteristics of the electronic devices.

UNIT I: SEMICONDUCTOR [12 Hrs]

Energy band structure: Valance and Conduction Band – Conduction in solids – Hole formation and its movement - Conductors – Insulators and Semiconductors Types of Semiconductor: Intrinsic semiconductor – Extrinsic semiconductor – N type semiconductor – P type semiconductor – Majority and Minority charge carriers – Mobile charge carries and immobile Ions – Drift – Diffusion

UNIT II: PN JUNCTION CHARACTERISTICS [12 Hrs]

PN junction – Formation of depletion layer - Barrier voltage – Effect of temperature on barrier voltage – VI Characteristics of PN Junction Diode. Applications: Clippers, Clampers

UNIT III: SPECIAL DIODES [12 Hrs]

Zener Diode – Zener diode as a voltage regulator – Backward diode – Varactor diode - Step recovery diode - Schottky diode - Tunnel diode – Gunn diode – IMPATT diode - PIN diode – LASER diode

UNIT IV: BIPOLAR JUNCTION TRANSISTOR [12 Hrs]

Construction – Transistor biasing – Operation of NPN Transistor – Operation of PNP transistor, Types of configuration: CB configuration, CE configuration, CC configuration, Current amplification factor and characteristics of CB, CE &CC – Relation among α, β & γ Applications: Transistor as a switch.

UNIT V: FET & UJT [12 Hrs]

Types of FET – Construction of JFET – Operation – Characteristics of JFET –, Drain & Transfer Characteristics of JFET –JFET parameters - Comparison of JFET with BJTMOSFET – Working and Characteristics of Depletion type & Enhancement type MOSFET Construction of UJT – Characteristics of UJT- Relaxation Oscillator

COURSE OUTCOME

On completion of this course, the students will be able to   Total Periods: 60 Hrs

❖ Explain the structure of the basic electronic devices

❖ Know the characteristics and operations of semiconductor devices.

❖ Use the special diodes for various applications.

TEXT BOOK:

1. R.S.Sedha, "A Text Book of Applied Electronics", S. Chand & Company Ltd, Revised I Edition, 2008.(Unit I-V)

REFERENCE BOOKS:

1. V. K. Metha, "Principles of Electronics", S. Chand and Company Ltd, 11thEdition, 2008.
2. Louis Nashelsky and Robert Boylestad, "Devices discrete and Integrated", PHI, I Edition, 2009.

Prepared by   **Approved by**

(Mr. K. Ashok Kumar)   (Dr. G. Senthilkumar)

Semester	II
Credit	3
Max. Marks	CIA -30
	CE -70
	TOT =100

18EC202 PRACTICAL – II: ELECTRONIC DEVICES

COURSE OBJECTIVE

❖ To understand and experiment the basic parameters of electronic devices.
❖ To construct few applications using semiconductor devices.
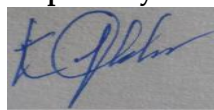
Any 10 Experiments:

1. Band gap energy of Germanium

2. Band gap energy of Silicon

3. Temperature coefficient of junction diode

4. Junction diode characteristics

5. Clipping and Clamping circuits

6. Zener diode characteristics

7. Zener Diode as a voltage regulator

8. Characteristics of Schokkty diode

9. CE characteristics

10. CB characteristics

11. Stability factor of a transistor

12. Emitter follower

13. Characteristics of UJT

14. Relaxation Oscillator

15. FET characteristics

COURSE OUTCOME
On completion of this course, the students will be able to

❖ Experiment the fundamental operations of the main semiconductor electronic devices.
❖ Design and construct electronic circuits using semiconductor devices.

Prepared by   **Approved by**

(Mr. K. Ashok Kumar)   (Dr. G. Senthilkumar)

Semester	II
Credit	5
Max. Marks	CIA -50
	CE -50
	TOT =100

18ECP01 DIGITAL ELECTRONICS AND LAB

COURSE OBJECTIVE

❖ To enable the students to know the number systems, codes, methods for simplifying Boolean expressions, logic gates and circuits.

❖ To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. It is also to encourage the students to learn the concepts of A/D, D/A conversions and memories.

UNIT – I: NUMBER SYSTEMS AND LOGIC GATES **[9Hrs]**

Digital Vs Analog Signals – Decimal, Binary, Octal, Hexa Decimal Number Systems – Conversions and Arithmetic operations – 1s and 2s Complements - BCD and Arithmetic Operations Logic Gates: AND, OR, NOT, EX-OR –IC Implementations – Universal gate (NAND, NOR) Graphical representation method: Karnaugh Map Method - Simplifications

PRACTICAL: 1. Logic gates **[6Hrs]**
2. Universal gates

UNIT – II: BOOLEAN ALGEBRA AND CODES **[9Hrs]**

Basic Operations with Boolean Variables – Boolean Function and Truth Table – Demorgan's Theorem – Simplifications. Codes: Weighted and Non Weighted Codes – Error Detection Code - Error Correction Code – EBCDIC Code – ASCII Code – Parity Advantages – Grey Code

PRACTICAL: 3.Demorgan's Theorem **[6Hrs]**
4. Code Converters

UNIT – III: COMBINATIONAL LOGIC CIRCUITS **[9Hrs]**

Arithmetic building block: Half adder – Full adder – Binary Parallel Adder - Half Subtractor - Full Subtractor –Binary Parallel Subtractor Multiplexer -Demultiplexer -Encoder - Decoder - Implementation through IC modules

PRACTICAL: 5. Half Adder & Full Adder **[12Hrs]**
6. Half Subtractor & Full Subtractor
7. Encoder & Decoder
8. Multiplexer & De-multiplexer

UNIT – IV: SEQUENTIAL LOGIC CIRCUITS **[9 Hrs]**

Flip Flops: RS, Clocked RS, JK, JK Master-Slave, D and T types. Shift Register: Serial – Parallel – Universal Shift registers Counters: Ring – Ripple – Synchronous – Up/Down –Mod 3 – Mod 5 – Decade counter

PRACTICAL: 9. Parity Generator & Checker **[6Hrs]**
10. Flip flop
11. Shift Register & Ring counter
12. Binary & Decade Counter
13. BCD to Seven Segment Display

UNIT – V: D/A, A/D CONVERTERS **[9Hrs]**

DA/Converters: Weighted Resister and Binary Ladder –D/A Converter specifications: definition of Resolution and Accuracy. A/D Converters: Counter Ramp – Comparator/Flash – Dual Slope – Successive Approximation –A/D converter specifications.

PRACTICAL: 14.Digital to Analog Converter
15. Analog to Digital Converter

TotalPeriods: 75 Hrs

COURSE OUTCOME

On completion of this course, the students will be able to

❖ Realize different logic gates and analyzing the outputs.
❖ Demonstrate the knowledge of Boolean algebra including algebraic manipulation/simplification, and application of DeMorgan's theorems and Karnaugh map reduction method.
❖ Analyze and design the combinational and sequential logic circuits

TEXT BOOKS:

1. Roger L. Tokheim "Digital Electronics Principles and applications", Tata Mc Graw-Hill Pub.Co.Ltd, 8thEdition 2013 (Unit I, II, V)

2. S. Salivahanan & S. Arivazhagan "Digital Circuits and Design", Vikas pub House, 4thEdition 2012 (Unit III, IV & V)
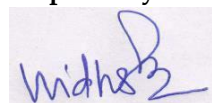
REFERENCE BOOKS:

1. Edition Albert P.Malvino, P. Leach, "Digital Principles and Applications", TMH,7th Ed 2010
2. Dr. B.R.Guptha &Vandana Singhal, "Digital Electronics", S.K.Kataria & Sons Millennium Ed, 2000
3. R.P.Jain "Modern Digital Electronics"Tata Mc Graw-Hill Pub.Co.Ltd, III Edition, 2012.

Prepared by   **Approved by**

(Dr. V. Sidharthan)   (Dr. G. Senthilkumar)

Sri Ramakrishna College of Arts and Science (Autonomous)
Coimbatore – 641006

VALUE EDUCATION

*[A one Credit Course offered during Even Semester
with effect from 2018-2019 Academic year and onwards]*

Syllabus :: Batch 2018-19

(Common to all UG courses)

COURSE OBJECTIVE:

Semester	
Credit	1
Max. Marks	CIA – 100
	TOT =100

- To orient about the society, social life, integrity in personal and public
- To learn the concepts of human values and respect for others
- To provide in-depth understanding about moral awareness
- To inculcate a sense of socially responsible citizens.

UNIT - I   VALUE EDUCATION & HUMAN EDUCATION   3
Value Education - Definition - relevance to present day - Concept of Human Values - Self Introspection - Self Esteem

UNIT – II   SOCIETY & FAMILY VALUES   3
Structure and components of Society, Marriage and Family System – Anger Neutralization, Adjustability - Threats of family life.

UNIT - III ETHICS & LEADERSHIP QUALITIES   3
Ethical values: Ethics, Social Ethics, And Public Policy - Leadership qualities: Integrity, Character, And Courage - Personality development. Inter-culture Tolerance

UNIT - IV   SOCIAL VALUES   3
Social Values, Faith, Service, Commitment and Decency - Fundamental Rights and Responsibilities of citizens

UNIT - V   SOCIAL PROBLEMS AND ROLE OF STUDENTS   3
Social Problems: Definition - Poverty, Illiteracy, Unemployment, Exploitation, Obscenity, Immorality - Crimes and Online Crimes - Student unrest, Ragging and Peaceful Campus - Role of Students in tackling social problems

COURSE OUTCOME: **Total Periods : 15**

- Develop a sense of self-respect and respect for others
- Able to occupy one's own social space and help others live peacefully
- Develop scientific temper and logical reasoning and to apply in day to day life

REFERENCE BOOKS

1. Mani Jacob (Ed). 'Resource Book for Value Education', Institute for Value Education, New Delhi. 2002.

2. NCERT. "Value Education". Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.

3. Daniel and Selvamony. "Value Education Today - Madras Christian College, Tambaram and ALACHE, New Delhi, 1990.

4. Ignacimuthu S. "Values for Life". Better Yourself Books, Mumbai, 1991.

5. M.M.M.Mascaronhas. Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

Sri Ramakrishna College of Arts and Science (Autonomous)
Coimbatore – 641006

<u>VALUE EDUCATION</u>

*[A one Credit Course offered during Even Semester
with effect from 2018-2019 Academic year and onwards]*

SCHEME OF EXAMINATION

(Continuous Internal Assessment:: April - 2019)

1. Value Education paper is a ONE CREDIT course.

2. The course will have only one Internal Examination (Model Examinations for 3 hours) at the end of the semester.

3.   The examination pattern is descriptive type written examination.

4. The course carries a total marks of 100 out of which 80 marks will be allocated for written examination and 20 marks will be earmarked for activity.

5. The Passing minimum is 40 marks out of 100 marks.

6. The assessment will consist of two parts, as detailed below:

SN	Nature	Maximum Marks	Remarks
1.	Descriptive Examination	80 Marks (Section A: 10X4 = 40) (Section B: 5 X 8 - 40)	• Centralized Examination • For 3 Hours Duration • Descriptive type questions • Model Examination only
2.	Activity	20 Marks	Activity (Paper presentation / Quiz/Panel Discussion / Participation in seminar/workshop /Assignment / Seminar/ Model Design) Individual Report to be submitted to the Value Education Teacher
	Total	**100 Marks**	

Course Coordinator   **Member Secretary**   **Principal**
                                Academic Council

02.05.2018

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SN	Unit	Proposed Activities	References
1.	**Unit – I** Value Education & Human Education	• Assignments • Participation in seminar/workshop	https://www.slideshare.net/hitesh0141/human-values-57703636 https://www.slideshare.net/vinay3711/human-values-professional-ethics
2.	**Unit – II** Society & Family Values	• Assignment / Seminar • Participation in seminar/workshop	https://www.slideshare.net/khimberlybalbuena/society-and-culture-ppt https://www.slideshare.net/arunab/society-and-culture-14735577
3.	**Unit – III** Ethics & Leadership Qualities	• Participation in seminar/workshop • Paper presentation	https://www.slideshare.net/komalsuryavanshi/leadership-qualities-8798588?qid=bde3fb0b-eaba-4d71-8031-69ba121eebd8&v=&b=&from_search=1
4.	**Unit – IV** Social Values	• Quiz • Field Visit / Observation	https://www.slideshare.net/ParminderSingh320/our-social-values?qid=72be767e-11fc-4fed-ac3f-7d7525bf0fec&v=&b=&from_search=1
5.	**Unit – V** Social Problems and Role of Students	• Panel Discussion • Assignment / Seminar	https://www.slideshare.net/gowthamchandrasekar2/social-ills-that-ail-the-indian-society?qid=d37ea10f-9148-427a-b619-6b29293d9120&v=&b=&from_search=4

02.05.2018

Course Coordinator
Dr.R.Thirumoorthi
Prof. & Head – Social Work
Sri Ramakrishna College of
Arts and Science (Autonomous)

18EC203 – MATHEMATICS - II

Semester	II
Credit	3
Paper Type	Allied
Max. Marks	CIA -30
	CE -70
	TOT =100

COURSE OBJECTIVE

To enable students to understand second order linear differential equations, numerical methods, special functions and complex numbers.

UNIT I   DIFFERENTIAL EQUATION **(9)**

Second Order linear differential equations with constant coefficients. Particular integrals of the form e^{kx}, x^k, sinkx, coskx only.

UNIT II   NUMERICAL METHODS **(9)**

Solving simultaneous equations – Gauss Elimination method, Gauss Jordan method, inverse of a matrix using Gauss Elimination method, Gauss Jacobi and Gauss Seidel methods..

UNIT III   INTERPOLATION, NUMERICAL DIFFERENTIATION AND INTEGRATION **(9)**

Interpolation : Newton's forward and backward interpolation.
Numerical Differentiation : Newton's forward and backward formula to compute the derivative, Stirling's formula.
Numerical Integration : Trapezoidal rule , Simpson's 1/3rd rule (No Derivation) – Simple problems.

UNIT IV   SPECIAL FUNCTIONS **(9)**

Beta and Gamma functions – definitions – Relationship between Beta and Gamma functions – Properties of Beta and Gamma functions – Simple problems.

UNIT V   COMPLEX NUMBERS **(9)**

Definition of complex numbers – Modulus – Amplitude form – Demorvie's Theorem (simple problems) – Expansion of $\sin(n\theta)$, $\cos(n\theta)$, $\sin^n(\theta)$, $\cos^n(\theta)$.

COURSE OUTCOME

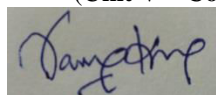After the completion of the course the students will be able to
- solve the Second Order linear differential equations.
- solve the problems using numerical methods.
- solve the problems on numerical differentiation and integration.
- gain knowledge about special functions.
- expand trigonometrical functions.
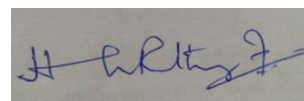
Total Periods : 45

* Note : The Question paper consists 20% Theory and 80% Problems

TEXT BOOKS

1. Kandasamy. P, Thilagavathi. K **"Mathematics for B.Sc – Branch – I Volume III"**, S. Chand and Company Ltd, New Delhi, 2004. (**Unit I**)
2. Dr. M. K. Venkataraman "Numerical methods in Science and Engineering", National Publishing Company , 5th edition 1999, Reprint 2013. (**Unit II & III**)
3. Dr. M.K.Venkataraman, " Higher Mathematics for Engineering and Science", National Publishing Company **Unit IV – Special Functions**)
4. Dr. M.K.Venkataraman, "Engineering Mathematics Vol. I",   National Publishing Company (**Unit V – Complex numbers**)

Mr.VASANTH KUMAR BONIFACE   DR.HANNAH REVATHY F.
(COURSE COORDINATOR)   (BOS CHAIRMAN)