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22/4/26 (15)



Davangere University

Bachelor of Science (B. Sc.) Curriculum Structure for Undergraduate Programme for 2024-25

Sl. No.	Course/Paper Code	Title of the Paper	Subject Category	Teaching Hours/week	Semester End Exam.	Internal Assessment	Total Marks	Credits	Examination Duration
1	2	3	4	5	6	7	8	9	10
Semester-I									
1	24SEP-ELET-I	Fundamentals of Electronics	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELEP-I	Fundamentals of Electronics Lab	MC-P	04	40	10	50	02	3 Hrs.
Total				08	120	30	150	05	---
Semester-II									
2	24SEP-ELET-II	Semiconductor Devices and Circuits	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELEP-II	Semiconductor Devices and Circuits Lab	MC-P	04	40	10	50	02	3 Hrs.
Total				08	120	30	150	05	---
Semester-III									
3	24SEP-ELET-III	Oscillators and Digital Electronics	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELEP-III	Oscillators and Digital Electronics Lab	MC-P	04	40	10	50	02	3 Hrs.
	Open Elective (Optional)	*1. Basics of Electronics 2. Domestic equipment maintenance	EL/OP-I	02	40	10	50	02	2 Hrs.
Total				10	160	40	200	07	---
Semester-IV									
4	24SEP-ELET-IV	Linear Integrated Circuits	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELEP-IV	Linear Integrated Circuits Lab	MC-P	04	40	10	50	02	3 Hrs.
	Open Elective (Optional)	*1. Industrial Electronics 2. Consumer electronics	EL/OP-II	02	40	10	50	02	2 Hrs.
Total				10	160	40	200	07	---
Semester-V									
5	24SEP-ELET-V	Digital Electronics and C-Programming	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELET-VI	Electronics Communication-I	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELEP-V	Digital Electronics and C-Programming Lab	MC-P	04	40	10	50	02	3 Hrs.
	24SEP-ERM	Elementary Research Methodology		02	40	10	50	02	2 Hrs.
Total				14	240	60	300	10	---

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Semester-VI									
6	24SEP-ELET-VII	Microcontroller and Applications	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELET-VIII	Electronics Communication-II	MC-T	04	80	20	100	03	3 Hrs.
	24SEP-ELEP-VI	Microcontroller and Applications Lab	MC-P	04	40	10	50	02	3 Hrs.
	24 SEP-ELEP-VII	Project	MC-P	02	40	10	50	02	3 Hrs.
Total				14	240	60	300	10	---
Grand Total				64	1040	260	1300	44	---

MC: Major Course; **MC-T:** Major Course Theory; **MC-P:** Major Course Practical;

El/Op: Elective/Optional; **AEDP:** Apprenticeship Embedded Degree Programme.

*In Semester-III and Semester-IV open elective papers are offered. There shall be 02 elective papers offered during each semester (Semester-III and Semester-IV) by every major subject offering Department, where a student shall choose/select/opt 01 elective paper out of two to study in each semester (Semester-III and Semester-IV).


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DAVANAGERE UNIVERSITY

THEORY PAPER

SEMESTER-V

Program Name	B. Sc. Electronics	Semester	V
Course Title	Digital Electronics and C-Programming		
Course Code:	24SEP-ELET-V	No of credits	03
Contact hours	56 Hours	Duration of SEA/Exam	03 Hours
Formative Assessment marks	20	Summative Assessment marks	80

Program Objectives:

- To provide students with comprehensive understanding of combinational and sequential circuits in digital design.
- To explain students about multiplexers and de-multiplexers and implementation in combinational circuits.
- To make students design various arithmetic circuits such as adders, subtractors etc.
- To explain semiconductor memory fundamentals including SRAM and DRAM.
- To enhance students ability to design and troubleshoot digital circuits to ensure efficient circuit performance.
- To gain the knowledge of programming the system using C-programming language.

Course Outcomes:

On successful completion of the course, the student will able to:

- Analyze the difference between combinational and sequential circuits.
- Implement basic combinational circuits using modern techniques.
- Analyze and understand arithmetic circuits like adders and subtractors.
- Design and implement data path circuits such as multiplexers, demultiplexers etc.
- Implement digital circuits using truth tables, state diagrams and flip-flops.
- Design and analyze algorithms for solving simple programs.
- Demonstrate ability to compare memory technologies and their principles.

Contents

56 hours

Unit-1

14 hours

COMBINATIONAL CIRCUITS:

Chapter: 1 Arithmetic circuits and ALUs: Half and Full adders, Half and Full subtractors, Serial adders and Parallel adders.

Chapter: 2 Design of basic combinational circuits: Multiplexers, 4-line to 1-line, 8-line to 1-line multiplexers, case study of IC-74153. Demultiplexers, 1-line to 4-line, 1-line to 8-line demultiplexers, case study of IC-74155.

Chapter: 3 Encoders and Decoders:

Encoders: BCD encoder, Priority encoder, case study of IC-74147. Decoders: BCD to Decimal decoder, realization of 2 to 4 line and 3 to 8 line decoder, case study of IC-7447.

Unit-2**14
hours****SEQUENTIAL CIRCUITS:****Chapter: 4 Latches and Flip-Flops:**

Types of flip-flops, SR-flip-flop, Clocked SR-flip-flop, D-flip-flop, JK-flip-flop, D and T-flip-flops using JK-flip-flop, JK-master slave flip-flop-working, principle and drawbacks, Description of Preset and Clear terminals.

Chapter: 5 Registers:

Definition, types, shift registers, Working of SISO, SIPO, PISO, PIPO shift registers and applications in data storage.

Chapter: 6 Counters:

Definition, Types, Ripple counters, Synchronous and Asynchronous counters, Up/Down counters-Working with timing diagrams, Comparison of ripple and synchronous counters.

Unit-3**14 hours****FUNDAMENTALS OF MEMORIES:****Chapter: 7 Basics of memories:**

Introduction, types, definitions, Classification of computer memories, Primary (RAM, ROM) versus secondary storage memories, volatile versus non-volatile memories and basic memory hierarchy.

Chapter: 8 RAM Technologies:

Random Access Memory (RAM) principles, Including static RAM (SRAM) and Dynamic RAM (DRAM), Details read/write operations, addressing and timing diagrams for basic circuits. Applications in cache and main memories.

Chapter: 9 ROM and Advanced types:

Read Only Memory (ROM), Types-ROM, PROM, EPROM, EEPROM (EAROM) and Flash memory with floating gate technology.

Unit-4**14 hours****FUNDAMENTALS OF C-PROGRAMMING:****Chapter: 10 Introduction to C:**

History and features of C-language, Applications of C in real-world scenarios, Setting up a C-development environment (compiler and IDE).

Chapter: 11 Basic structure and syntax:

Structure of a C-program (main function, comments), writing and compiling your first "Hello World" program, Rules of identifiers, Keywords and Data types (int, char, float).

Chapter: 12 Input and Output Operations:

Using printf() for output, Using scanf() for input, Simple formatting with escape sequences and Basic C-programs.

Reference Books:

1	Digital Design by Morris Mano, Pearson education-2017.
2	Modern Digital Electronics by R. P. Jain, Tata McGraw Hill-2003.
3	Digital Electronics: Principles, Devices and Applications by Anil K. Maini and Varsha Agarwal, Published by Wiley-2007.
4	Let Us C by Yashavant P. Kanetkar, Published by BPB Publications-2023.

SEMESTER-V

Program Name	B. Sc. Electronics	Semester	V
Course Title	Electronics Communication-I		
Course Code:	24SEP-ELET-VI	No of Credits	03
Contact hours	56 Hours	Duration of SEA/Exam	03 Hours
Formative Assessment marks	20	summative Assessment marks	80

Program Objectives:

- Introduce fundamental principles of analog communication (AM and FM), digital communication, and modems for effective signal transmission.
- Enable learners to analyze modulation techniques, noise effects and basic digital systems.
- Develop skills to design simple communication systems using these concepts.
- Enable students to analyze modem standards for broadband applications.

Course Outcomes:

On successful completion of the course, the student will able to:

- Explain AM, FM, and digital modulation processes with diagrams.
- Compare performance of analog and digital systems under noise.
- Identify modem functions and basic implementation in communication links.
- Apply concepts to solve simple modulation/demodulation problems.

Contents

56 hours

Unit-1

14 hours

Amplitude Modulation (AM) Basics:

Chapter-1 Introduction to Modulation:

Radio communication: Introduction, Ground waves and Sky waves propagation, signal to noise (S/N) ratio and Shannon-Hartley law.

Chapter-2 Amplitude Modulation:

Need for modulation, types (AM, FM, PM), block diagram of communication system. Theory of AM, mathematical representation, frequency spectrum, modulation factor m , m in terms of maximum and minimum voltages, power relations in AM.

Chapter-3 AM Techniques and Demodulations:

Double-sideband suppressed carrier (DSB-SC), single sideband (SSB) generation, vestigial sideband (VSB) signals, Types of detectors-Linear diode detector, AM-Transmitter block diagram and working, AM-Receiver (super heterodyne receiver) block diagram and working.

Unit-2	14 hours
<p>Frequency Modulation (FM):</p> <p>Chapter-4 Basics of FM: Definition, Mathematical representation of FM, Modulation index, Frequency modulation spectrum analysis, Bessel functions for sidebands, bandwidth estimation, narrowband versus wideband, FM-Generation, FET reactance modulator.</p> <p>Chapter-5 FM Transmitter, Receiver and Detectors: Definition, types of FM detectors, Slope detector, Balanced slope detector, Foster-Seeley discriminator with pharos diagram, pre-emphasis and de-emphasis, FM-Transmitter and Receiver block diagrams and working.</p> <p>Chapter-6 Noise in AM and FM: Noise types, signal to noise ratio in AM versus FM, FM advantages, figure of merit, comparison of AM and FM.</p>	

Unit-3	14 hours
<p>Digital Communication:</p> <p>Chapter-7 Pulse Modulation: Pulse Amplitude Modulation (PAM), Pulse Width Modulation (PWM), Pulse Position Modulation (PPM), Pulse Code Modulation (PCM) basics, Sampling theorem, Quantization noise.</p> <p>Chapter-8 Digital Modulation: Amplitude shift keying (ASK), Frequency shift keying (FSK), Phase shift keying (PSK), DPSK waveforms, bandwidth efficiency, bit error rate concepts, Frequency division multiplexing (FDM) and Time division multiplexing (TDM).</p> <p>Chapter-9 Digital Receivers and Detection: Block diagram of a digital communication receiver, concept of detection, decision threshold and probability of error (qualitative), Eye diagram and inter symbol interference (ISI)-simple explanation.</p>	

Unit-4	14 hours
<p>Modems and Applications:</p> <p>Chapter-10 Modem Fundamentals: Introduction, classification, modes of modem, modem data transmission speed, modem interconnection, modem interfacing and applications. Modulator- demodulator role, Acoustic couplers to modern DSL/cable modems.</p> <p>Chapter-11 Modem types and standards: Modulator- demodulator role, Acoustic couplers to modern DSL/cable modems(V.32, V.90), error correction basics, FSK modems (Bell 103), QAM modems</p> <p>Chapter-12 Practical systems: Modem in telephone lines, adaptive equalization, constellations for QAM.</p>	

References:

1. Principles of Communication Engineering by Anok Singh, Sathyaprakasm publications-2004.
2. Electronic Communication systems by GEORGE Kennedy, McGraw Hill book company-2002.
3. Communication system by Roddy and Coolen, 4th edition, Pearson Education,-2005.
4. Electronic Communications by Sanjeev Gupta, Khanna Publications-2002.

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SEP BSc-V Semester: Elementary Research Methodology
(for Biochemistry, Biotechnology, Botany, Chemistry, Electronics, Environmental Science, Food Technology, Microbiology, Zoology)

Subject	Elementary Research Methodology	Semester	V
Number hr/week	2 hours	Total hours	32
Duration of the exam	2 hours	Credits	2

Learning Outcomes:

After the completion of this course the learner will be able to:

- Describe the basic concepts of research and its methodologies.
- Identify the appropriate research topics and set up hypothesis.
- Perform literature survey using library (print) and internet (online) sources.
- Design experiments/surveys, collect data and and represent data in table and figure forms.
- Analyze data with appropriate software tools, internet results and draw conclusions.
- Write scientific report/ review and prepare seminar/ conference presentations oral or poster.
- Understand the methods of citations and referencing styles, check plagiarism.
- Identification of lacuna (finding gap-areas), hypothesis formulation, framing objectives, and preparation of questionnaire.

Unit-1	<p>Scientific Methods and Research: Concept, Definitions of research; Purpose, importance, steps levels and rigor of research; different paradigms of research.</p> <p>Types of Research: Fundamental/Applied research, Descriptive/Analytical research, Quantitative /Qualitative research, Conceptual/Empirical research, Diagnostic/Hypothesis testing research, Conclusion oriented/Decision oriented research, Theoretical / Action research, Longitudinal /Cross sectional research</p> <p>Research Question: Introduction, types and identification; Research Problem: Definition, identification of problem, ways of understanding problem, criteria of a good problem, guidelines for selecting meaningful problem; Research Objective: Definition, broad and specific objectives, goals;</p> <p>Research Hypothesis: Meaning of research hypothesis, sources of hypothesis, qualities of workable hypothesis, utilities of hypothesis;</p>	8 h
Unit-2	<p>Introduction and review of sampling: Definition, needs, steps; Definitions of population, sample, sampling unit, sampling frame, sampling error and non sampling error; Steps in sampling; Fundamentals, characteristics, advantages and disadvantages of sampling.</p> <p>Types of sampling: Probability (simple, stratified, systematic, cluster and multistage –in brief), Process of selecting random sample; non probability sampling (convenience, purposive, quota, snowball, self selecting); Advantages and disadvantages (brief discuss only)</p> <p>Size of sample: Factor affecting size of sample, Testing the reliability of sample, Methods of estimating sample size, Process of selecting random sample</p>	8 h

Unit-3	<p>Designing of research work: Introduction, Purposes, Characteristics of a research design, Principles of designing a research, conceptual framework and its operationalization, Sectors of research design, Research methods as research designing, similarities and differences between Research design and research method. Conventional research method: Principle and Importance conventional methods, Scientific methods as conventional methods, Characteristic of a scientific method; Aspects of scientific Method, Evolution of scientific Studies Steps in scientific methods,</p>	8 h
Unit-4	<p>Historical Research Method: Nature and Steps in Historical method, Importance and fundamentals of Historical method, Sources of Historical data, Limitations.</p> <p>Experimental Research Method: Introduction, Types of experiments, steps in experimental research, Problems in experimentation; Ex-post facto research: definition and technique.</p> <p>Survey Research Method: Introduction, and Importance of survey method, Comparison of survey method with other methods; Objectives of social and survey and technical survey, types of social and technical survey, Steps in social and technical surveys, Pilot survey</p> <p>Case study: Introduction, Types of case studies: Exploratory and Hypothesis testing; Steps in case studies, Sources of case data, limitations.</p> <p>Analysis of data- introduction, data analysis tools.</p> <p>Project time line, literature review and references, research report structure, plagiarism.</p>	8 h


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SEMESTER-V

Program Name	B.Sc. Electronics	Semester	V
Course Title	Digital Electronics and C-Programming lab		
Course Code:	24SEP-ELEP-V	No of Credits	02
Viva Voice marks	10	Experimentation marks	30
Attendance marks	05	Record marks	05
Total Marks			50

1. Realization of Half and Full adder using basic gates.
2. Realization of Half and Full adder using universal gates.
3. Realization of Half and Full subtractor using basic gates.
4. Parallel adder using IC-7483.
5. Encoder and Decoder using IC-74147 and IC-7447.
6. Truth table verification of SR-Flip-Flop, Clocked SR-Flip-Flop and D-Flip-Flop.
7. Verification of Multiplexer and Demultiplexer using IC-74153 and 74155.
8. Verification of 4-bit binary ripple counter using IC-7476.
9. Write a C-program to find area and circumference of a circle.
10. Write a C-program to perform arithmetic operations.
11. Amplitude modulation and demodulation using transistor.
12. Frequency modulation and demodulation using IC-8038.
13. Pulse amplitude modulation.
14. Pulse width modulation.
15. Pulse position modulation.
16. Amplitude shift keying (ASK).
17. Frequency shift keying (FSK).
18. Phase shift keying (PSK).

SEMESTER-VI

Program Name	B. Sc. Electronics	Semester	VI
Course Title	Microcontroller and Applications		
Course Code:	24SEP-ELET-VII	No of credits	03
Contact hours	56 Hours	Duration of SEA/Exam	03 Hours
Formative Assessment marks	20	Summative Assessment marks	80

Program Objectives:

- Enable students to apply knowledge in real-world embedded systems.
- Introduce fundamental concepts of Microprocessors and Microcontrollers.
- Explain architecture, programming and interface techniques.
- Develop skills in designing simple applications using these systems.
- Introduce PIC18 architecture, programming, and peripherals for embedded applications.

Course Outcomes: On successful completion of the course, the student will able to:

- Develop basic applications for embedded systems.
- Describe the architecture and operation of Microprocessors and Microcontrollers.
- Write and execute assembly language programs.
- Design and interface peripheral devices.
- Explain PIC18 architecture and program basic applications in assembly or C.

Contents

56 hours

Unit-1

14 hours

Fundamentals of Embedded Systems:

Chapter: 1 Introduction:

Definition and characteristics of embedded systems, examples of embedded systems, design parameters of embedded systems, applications in daily life (examples-appliances, automotive).

Chapter: 2 Embedded System Architecture:

Block diagram and components (CPU, memory, I/O), Microprocessor architecture classification, Instruction set architecture, Memory interface based architecture classification, Comparison of different architectures.

Chapter: 3 Software System and Development Tools:

Software sub-systems, Software development tools, Debugging tools and techniques, Manual methods, Software-Hardware debugging tools.

Unit-2**14 hours****Microcontroller Fundamentals :****Chapter: 4 Introduction to Microcontrollers:**

Definitions, History and evolution of Microprocessors and Microcontrollers, Difference between Microprocessors and Microcontrollers, Advantages and applications of 8051 microcontrollers, classification of microcontrollers,

Chapter: 5 Microcontroller 8051 Architecture:

Basic architecture overview of Microcontroller, Core components (CPU, memory, I/O), Harvard and Von Neumann Architectures, Features of CISC and RISC, 8051 architecture block diagram, Pin description of 8051.

Chapter: 6 8051 Memory and I/O Basics:

Internal memory and external memory of 8051, Special Function Registers (SFRs), Internal memory organization of 8051, I/O Ports and interfacing, Timers and Interrupts introduction.

Unit-3**14 hours****Microcontroller Programming:****Chapter: 7 8051 Addressing modes:**

Definition, Types of addressing modes, Immediate Addressing mode, Direct Addressing mode, Register Addressing mode, Register Indirect Addressing mode, Indexed Addressing mode with examples.

Chapter: 8 Instruction set of 8051:

Definition, Types of Instruction set-Data Transfer Instructions, Arithmetic Instructions, Logical Instructions, Branching Instructions, and Machine control Instructions with examples.

Chapter:9 Assembly Language Programs of 8051:

Addition, Subtraction, Multiplication and Division of two 8-bit and 16-bit registers, Biggest number, Smallest number, Ascending order and Descending order programs.

Unit-4**14 hours****Interfacing and PIC Microcontrollers:****Chapter: 10 Interfacing of 8051:**

Keyboard, LED and LCD Interfacing, ADC and DAC Interfacing, Stepper Motor and DC Motor Interfacing with 8051 Microcontroller.

Chapter: 11 Introduction to PIC-18 Family:

Overview of PIC18 family, Architecture and its evolution from earlier PIC families. Key features of 8-bit MCU, Harvard architecture, pipelined execution.

Chapter: 12 PIC18 Memory Organization:

Program memory (Flash), data memory (RAM), and EEPROM basics. Stack operations and memory addressing modes. Simple memory mapping diagrams and access examples.

Reference Books:

1	The 8051Microcontroller: Architecture, programming and applications by Kenneth J. Ayala's, 3 rd edition, prentice hall, 2004.
2	Fundamentals of Microprocessors and Microcontrollers by B.RAM ,3 rd edition, prentice hall, 2000.
3	The 8051 Microcontroller and embedded systems: using Assembly and C by Muhammad Ali Mazidi, Janice Gillispie Mazidi and Rolin D .Mckinlay, 2 nd edition, prentice hall, 2006.
4	Microprocessors and Microcontrollers by Atul P Godse and Dr.Deepali A Godse, Technical publications, 2021.
5	PIC Microcontroller and Embedded systems by Muhammad Ali Mazidi, and Rolin D .Mckinlay, Danny Causey,2 nd edition, pearson education, 2007.
6	Microchip PIC18F Family Reference Manual; Microchip Technology Inc,2020.

SEMESTER-VI

Program Name	B. Sc. Electronics	Semester	VI
Course Title	Electronics Communication-II		
Course Code:	24SEP-ELET-VIII	No of Credits	03
Contact Hours	56	Duration of SEA/Exam	03 Hours
Formative Assessment marks	20	Summative Assessment marks	80

Program Objectives:

- Students understand radar principles, signal processing for target detection, and system design for ranging/tracking applications.
- Students learn orbital mechanics, link budget analysis and multiplexing for global satellite networks.
- Students explore light propagation, fiber types and photonic components for high-speed networks.
- Learners will evaluate evolving standards from 2G to 5G for practical deployment.

Course Outcomes:

On successful completion of the course, the student will be able to:

- Learners model radar equations, process echoes for velocity estimation, analyze clutter effects and optimize waveforms for resolutions.
- Learners compute satellite coverage, design transponders, mitigate propagation effects and evaluate VSAT/multiple access schemes.
- Learners characterize fibers/sources/detectors, analyze system performance, and design WDM links.
- Students can design cellular systems using frequency reuse and handoff mechanisms.

Contents

56 hours

Unit-1

14 hours

Radar Communication:

Chapter-1 Radar Fundamentals:

Introduction, Basic block diagram and operation, Radar Range Equation, Radar Maximum Range, Radar Applications.

Chapter-2 Pulsed Radar Systems:

Block diagram of pulsed radar system and working, pulse characteristics, PRF, range/velocity ambiguities.

Chapter-3 CW Radar :

Block diagram of CW Radar and working, Doppler shift measurement, beat frequency.

Unit-2	14 hours
<p>Satellite Communication:</p> <p>Chapter-4 Introduction: Historical development of satellites, Satellite orbits, Geo-stationary and Non geo-stationary orbits (MEO and LEO), ITV frequency allocation region-1,2 and 3. Satellite Applications (Telephone, TV, Radio, Internet, Military, Data collection).</p> <p>Chapter-5 Satellite Earth Station: Satellite earth station-Block diagram and working, Up-link and Down link budget analysis.</p> <p>Chapter-6 Satellite Electronic System: Satellite Electronic System-Block diagram and working, Transponders, attitude and orbit control.</p>	
Unit-3	14 hours
<p>Optical Fiber Communication:</p> <p>Chapter-7 Fiber Optic Basics: Principle of light transmission through fiber, modes of fiber-step index and multi-grade, optical fiber losses.</p> <p>Chapter-8 Light Sources: Optical fiber communication connectors and splices, OFC-Sources: LED and Semiconductor laser, Spectral width, modulation response.</p> <p>Chapter-9 Systems and Networks: Photo detector, OFC Transmitter and Receiver block diagram, merits and demerits of OFC.</p>	
Unit-4	14 hours
<p>Mobile Communication :</p> <p>Chapter-10 Cellular Fundamentals: Introduction, Basic Cellular System, Cell Splitting, Frequency reuse, handoff, Advantages and Disadvantages.</p> <p>Chapter-11 Evolution of Mobile System: Cover history from 1G to 5G, SIM Card, ARFON Number, IMEI Number, International roaming, Bluetooth and Wi-Fi.</p> <p>Chapter-12 Wireless Techniques: LTE Technology, 4G and 5G Technology, Simplified block of cellular mobile handset.</p>	
<p>Reference:</p>	

References:

1. Introduction to Radar Systems by Skolnik, M.I. McGraw-Hill publications, 3rd edition-2001.
2. Radar system analysis and Modeling by Barton, D.K., Artech House,2005.
3. Satellite Communications by Roddy, D., McGraw-Hill publications, 4th edition-2006.
4. Optical Fiber Communications by Keiser, G., McGraw-Hill publications, 5th edition-2010.
5. Mobile Communications Engineering: Theory and Applications by William.C.Y. Lee, Tata McGraw-Hill publications, 5th edition-2001.

SEMESTER-VI

Program Name	B.Sc. Electronics	Semester	VI
Course Title	Microcontroller and Applications Lab		
Course Code:	24SEP-ELEP-VI	No of Credits	02
Viva Voice marks	10	Experimentation marks	30
Attendance marks	05	Record marks	05
Total Marks			50

8051 Microcontroller Programs:


1. Simple programs Addition, Subtraction, Multiplication and Division.
2. Assembly Language Program for Adding of two 8-bit numbers.
3. Assembly Language Program for Subtraction of two 8-bit numbers.
4. Assembly Language Program for Multiplication of two 8-bit numbers.
5. Assembly Language Program for Division of two 8-bit numbers.
6. To find the Smallest number of given series of numbers.
7. To find the Biggest number of given series of numbers.
8. Assembly Language Program for arranging given numbers in ascending order.
9. Assembly Language Program for arranging given numbers in descending order.
10. To find the square of a number using look up table technique using-C.
11. To find the sum of the first ten integer numbers using-C.
12. To find the arithmetic operations of 8-bit number using-C.
13. To find the factorial of a number using-C.


SEMESTER-VI

Program Name	B.Sc. Electronics	Semester	VI
Course Title	Project		
Course Code:	24SEP-ELEP-VII	No of Credits	02
Formative Assessment marks	10	Summative Assessment marks [Thesis, Presentation & Viva Voice] marks	40
Total Marks			50

Prepare and execute mini projects in the practical examination.

Note: Make the group of three or four students for each project.


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