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UNIVERSITY OF MYSORE

Estd. 1916

VishwavidyanilayaKaryasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21 Dated: 01.09.2023

Notification

Sub:- Syllabus and Scheme of Examinations of Electronics (UG) (V & VI Semester) with effect from the Academic year 2023-24.

Ref:- 1.This office letter No: AC6/303/2022-23 dated: 28-07-2023.
2.Decision of BOS in Electronics (UG) meeting held on 18-08-2023.

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The Board of Studies in Electronics (UG) which met on 18-08-2023 has resolved to recommended and approved the syllabus and scheme of Examinations of Electronics programme (V & VI Semester) with effect from the Academic year 2023-24.

Pending approval of the Faculty of Science & Technology and Academic Council meetings the above said syllabus and scheme of examinations are hereby notified.

The syllabus and scheme of Examinations contents may be downloaded from the University website i.e., www.uni-mysore.ac.in.

Registrar
University of Mysore
Mysore

Registrar

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Electronics, Manasagangothri, Mysore.
4. The Director, Distance Education Programme, Moulya Bhavan, Manasagangotri, Mysuru.
5. The Director, PMEB, Manasagangothri, Mysore.
6. Director, College Development Council , Manasagangothri, Mysore.
7. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
8. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
9. Office Copy.

University of Mysore

Curriculum for V and VI Semester BSc/BSc (Honours) Degree with Electronics based on NEP-2020 Regulations

(2021-22 Batch Students)

Subject: Electronics

Curriculum and Credit Framework for Undergraduate Programme with Two Core subjects as Major (A: Electronics & B) in First Three Years.

V & VI Semesters

Sem.	Course Code	Credits	Course Title
V	DSC-ELE51 (A9)	4	Electronic Communication – II
	DSC-ELE51P (A10)	2	Electronic Communication – II Practicals
	DSC-ELE52 (A11)	4	Embedded Controllers
	DSC-ELE52P (A12)	2	Embedded Controllers Practicals
VI	DSC-ELE61 (A14)	4	Signals and Systems
	DSC-ELE61P (A15)	2	Signals and Systems Practicals
	DSC-ELE62 (A16)	4	Sensors and Internet of Things
	DSC-ELE6MP (A17)	2	Mini Project

Curriculum Contents

Semester- V

Program Name	**BSc in Electronics**		Semester	**Fifth Semester**
Course Title	**Electronic Communication –II**			
Course Code:	DSC-ELE51		No. of Credits	**4**
Contact hours	**60 Hours**		Duration of SEA/Exam	**2 1/2 Hours**
Formative Assessment Marks		**40**	Summative Assessment Marks	**60**

Course Objectives:

- To understand the various microwave devices and their working
- To understand principle and working of different digital modulation techniques.
- To understand the working principles of Cellular communication and different wireless communication techniques.

Course Outcomes:

- Know the various microwave devices, their working and applications.
- Familiar with ASK, FSK, PSK, BPSK, QPSK Digital modulation techniques.
- Understand the basic concept of cell phone hand set, working principle of cellular communication and wireless technologies.

Contents	**60 Hrs**
Unit 1	15 Hrs

Microwave devices for Communication: Multicavity Klystron-Introduction, Working principles of Klystron, practical considerations. Reflex Klystron-Working principles of Klystron, practical considerations. Magnetron- Working principles, practical considerations, and application, Traveling-wave tube (TWT)-TWT fundamentals, Working principles of TWT, practical considerations, and application. Gunn diodes-Gunn effect, Gunn diodes- Construction and Working principles, practical considerations, and applications. IMPATT Diodes-Construction and Working principles, practical considerations, and applications. PIN diodes-Construction and Working principles, practical considerations, and applications. Schottky-Barrier diodes- Construction and Working principles, practical considerations and applications.

Unit 2	15 Hrs

Pulse Analog Modulation Techniques: Pulse Amplitude Modulation, Pulse Width Modulation, Pulse Position Modulation. **Pulse Digital Modulation Techniques:** Pulse Code Modulation, Delta modulation, Differential Pulse Code Modulation. **Digital Transmission:** Introduction, pulse modulation, PCM sampling, Sample and Hold circuit. Linear versus nonlinear PCM codes, Coding methods- Level-at-a-Time coding, Digit-at-a-Time coding, Word-at-a-Time coding

Unit 3	15 Hrs
Digital Communication: Information capacity, bits, bit rate, baud rate, baud and minimum bandwidth, Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), FSK bit rate, baud and bandwidth, FSK- transmitter, FSK- receiver, Phase Shift Keying (PSK), Binary Phase Shift Keying (BPSK), BPSK transmitter, bandwidth consideration of BPSK and Quadrature Phase Shift Keying (QPSK), QPSK transmitter, bandwidth considerations of QPSK, QPSK receiver.	
Unit 4	15 Hrs
Cellular Communication and Wireless LANs: Cellular telephone, fundamental concepts of cellular telephone, frequency reuse, interference, co-channel interference, adjacent co-channel interference, cell splitting, sectoring, segmentation and dualization, roaming and hand off. Multiple access, FDMA, TDMA, CDMA, OFDMA, Digital cell phone architecture, Wireless LAN requirements-Bluetooth, Wi-Fi, MIMO, LTE and basics of 5G technology. Smartphone analysis.	

Reference Books	
1	George Kennedy, Bernard Davis & SRM Prasanna "Electronic Communication Systems," Vth Edition-TATA McGraw Hill.
2	Electronic communications, Sanjeev Gupta, Khanna Publishers, New Delhi, 8th print 1995.
3	Electronics and Communication Simplified, A K Maini, Khanna Publishers, New Delhi.
4	D Roddy and J. Collen, "Electronics communications", 4th edition, PHI, 2008
5	Wayne Tomasi "Advanced Electronic Communication systems", - 6th edition, Low priced edition- Pearson education
6	Principles of "Electronic Communication Systems" Louis E. Frenzel Jr. Fourth Edition-TATA McGraw Hill, 2019.
7	David Tse, PramodViswanath 'Fundamentals of Wireless Communication', Cambridge University Press,1st edition, 2005
8	B. P. Lathi and Zhi Ding, "Modern Digital and Analog communication Systems", Oxford University Press, 4th Edition, 2010
9	Wayne Tomasi –"Electronic Communication systems, Fundamentals through Advanced",Vthedition.
10	Bernard Skla 'Digital Communications: Fundamentals and Applications, Pearson Education, 2nd edition, 2009.

Program Name	**BSc in Electronics**		Semester	**Fifth Semester**
Course Title	**Electronic Communication-II Practicals**			
Course Code	DSC-ELE51P		No. of Credits	**2**
Formative Assessment Marks		**25**	Summative Assessment Marks	**25**
Note: Minimum of 8 Experiments from Part A and 4 Experiments from Part B				

Part – A

1. Study of PAM
2. Study of PWM
3. Study of PPM
4. Sample and Hold circuit
5. Study of ASK generation and Detection
6. Study of FSK generation and Detection
7. Study of PSK generation and Detection
8. Study of Time Division Multiplexing and Demultiplexing
9. Study of Frequency Multiplier.
10. QPSK modulator and demodulator
11. Determination of V-I Characteristics curve of a Gunn Diode
12. Study of notch filter.
13. Class C tuned amplifier
14. Study of Switched mode regulator using PWM.

Part- B

Simulation Experiments using MATLAB/SCILAB.

1. Simulate PAM for two set of frequency values.
2. Simulate Pulse Amplitude Demodulation for two set of frequency values.
3. Simulate AM and determine the modulation index.
4. Simulate Amplitude Demodulation for three set of frequency values.
5. Simulate OP-AMP adder for two input voltage levels
6. Simulate OP-AMP subtractor for three set of input voltage levels
7. Simulate NRZ, RZ, half-sinusoid and raised cosine pulses and generate eye diagram for binary polar signaling.
8. Pulse code modulation and demodulation system.
9. Computations of the Probability of bit error for coherent binary ASK, FSK and PSK for an AWGN Channel and compare them with their Performance curves.
10. DPSK Transmitter and receiver
11. QPSK Transmitter and Receiver.

Program Name	**BSc in Electronics**		Semester	**Fifth Semester**
Course Title	**Embedded Controllers**			
Course Code:	**DSC-ELE52**		No. of Credits	**4**
Contact hours	**60 Hours**		Duration of SEA/Exam	**2 1/2 Hours**
Formative Assessment Marks		**40**	Summative Assessment Marks	**60**

Course Objectives:

- To know the importance of microcontrollers and their applications
- Understand the basics of Embedded Systems concepts.
- Acquire knowledge about 8051 and PIC Microcontrollers and its peripherals.

Course Outcomes:

- Identify and understand function of different blocks of 8051 microcontrollers.
- Develop program for I/O port operations, Timers, Serial port and Interrupts using C.
- Gain the knowledge to interface Keyboard, DAC, Stepper motor, LED/LCD display etc.
- Design and develop small scale embedded systems.

Contents	**60 Hrs.**
Unit 1	15 Hrs.

Introduction: Embedded Systems, Examples of Embedded Systems, Design Parameters of Embedded Systems, Microcontrollers. **Memory:** Information Storage Device, Read Only Memory, Random Access Memory, Aligned and Unaligned Memory Accesses. **Microprocessor:** Microprocessor Architecture Classification, Instruction Set Architecture, Memory Interface-Based Architecture Classification, Performance Comparison of Different Architectures, Software System and Development Tools, Software Sub-Systems, Software Development Tools, Debugging Tools and Techniques, Manual Methods, Software-Only Methods, Software-Hardware Debugging Tools.

Unit 2	15 Hrs.

8051 Microcontroller: Architecture-Registers, Pin diagram, I/O ports functions, Internal Memory organization. External Memory (ROM & RAM) interfacing. Addressing - Immediate addressing mode, register addressing mode, direct addressing mode, indirect addressing mode. External data Moves, code memory Read-only data Moves, Push and Pop opcodes, Data exchanges. Logical operations, Arithmetic operations.

Unit 3	15 Hrs.

Branch instructions-The Jump and call program range- Relative range, short absolute range and long absolute range, Jumps - Bit Jumps, Byte Jumps and Unconditional Jumps. Call and subroutines: Subroutines, Call and the Stack and Calls and Returns. Assembly language programmes, subroutine and loops. **8051 Microcontroller Peripherals and Programming in C**: C Data types and time delays, I/O Programming, Data conversion programs, Accessing code

ROM space, Timer Programming, Serial port programming, external hardware interrupt programming, Parallel ADC, DAC, LCD, Relay, DC motor and Stepper motor interfacing.	
Unit 4	15 Hrs.
PIC18 Microcontrollers: Overview of the PIC18 family, a brief history of the PIC microcontroller, PIC18 features, simplified view of a PIC microcontroller, PIC18 block diagram, Comparison of 8051 and PIC18 family (40-pin package). **Architecture:** PIC WREG and ALU using literal value diagram, PIC 18 Microcontroller program ROM, Program Counter, Hardware Stack, the PIC file register, file register (data RAM) space allocation in PIC, SFRS (special function registers), GPR (general-purpose registers or RAM), file register for PIC18 family diagram, file register and access bank in the PIC18, PIC Status register, PIC microcontroller I/O pins, PIC microcontroller peripherals-Parallel Slave Port, Timers, Watchdog Timer, Capture/Compare/PWM (CCP) Modules, MSSP Serial Port module, CAN Bus.	

Reference Books	
1.	Muhammad Tahir and Kashif Javed, "ARM Microprocessor Systems: Cortex-M Architecture, Programming, and Interfacing," 1st Edition, CRC Press, 2017.
2.	Kenneth J. Ayala, "The 8051 Microcontroller", 3rd Edition, Thomson/Cengage Learning, 1997
3.	Muhammad Ali Mazidi and Janice Gillespie and Rollin D, "The 8051 Microcontroller and Embedded Systems using assembly and C,"2nd Edition, Pearson, 2006.
4.	Tim Wilmshurst, "Designing Embedded Systems with PIC Microcontrollers: Principles and applications"**,** First Edition, Elsevier, 2007.
5.	Muhammad Ali Mazidi and Rolin D, Mckinlay, "PIC Microcontroller and Embedded Systems using assembly and C for PIC18," 1st Edition, Pearson, 2008.
6.	John Pitman, "Design with PIC Microcontrollers,**"** 1st Edition, Prentice Hall, 1997.

Program Name	**BSc in Electronics**		Semester	**Fifth Semester**
Course Title	**Embedded Controllers Practicals**			
Course Code	DSC-ELE52P		No. of Credits	**2**
Formative Assessment Marks		**25**	Summative Assessment Marks	**25**
Note: Minimum of 8 Experiments from Part A and any 4 either using 8051 or PIC from Part B				

Part –A

Conduct the experiments by writing assembly/C programs using Keil µVision IDE for 8051/8051-kit

1. Addition of 8-bit numbers considering carry.
2. Subtraction of 8-bit numbers considering borrow.
3. To find that the given numbers is prime or not.
4. Multiplication by repeated addition
5. Addition of 16-bit numbers considering carry.
6. Subtraction of 16-bit numbers considering borrow.
7. Finding Largest among a group of numbers.
8. Finding Smallest among a group of numbers.
9. To find the factorial of a number.
10. To read 10 data from port P0 and store in internal RAM.
11. Find the square of a numbers (1to10) using look-up table
12. To read data from port P0 and send the data to P1 if it is even else send to P2 repeatedly.
13. To read data from port P0 convert it to decimal and send to P1 and P2 repeatedly.

Part – B

Conduct the experiments by writing assembly/C programs using KeilµVision IDE for 8051/8051-kit

1. To rotate stepper motor clockwise 180^0 using stepper motor interface. Control word format of 8255 PIC
2. To rotate stepper motor anti-clockwise 180^0 using stepper motor interface.
3. To rotate stepper motor clockwise 360^0 using stepper motor interface.
4. To rotate stepper motor anti-clockwise 360^0 using stepper motor interface.
5. Square wave generation using DAC interface.
6. Triangular wave generation using DAC interface.
7. To display numbers from 0 to F on seven segment display.
8. Use one of the four ports of 8051 for O/P interfaced to eight LED's. Simulate binary counter (8 bit) on LED's .
9. Program to run a countdown from 9-0 in the seven segment LED display.
10. To interface seven segment LED display with 8051 microcontroller and display 'HELP' in the seven segment LED display.

Using MP Lab IDE for PIC

1. To monitor bit PC5, if it is High send 55H to PORT B; otherwise send AA to Port D
2. To convert Packed BCD to ASCII and display The bytes on PORTB and PORTC
3. To send out the value 44H serially one bit at a time via RC0, the LSB should go out first.
4. To convert analog signal to digital from external ADC and display the result on P2 (any unused) port.
5. To control DC motor interfacing.

VI Semester

Program Name	**BSc in Electronics**	Semester	**Sixth Semester**
Course Title	**Signals and Systems**		
Course Code:	DSC-ELE61	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 1/2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Objectives:

- Gain the knowledge on Signals and Systems
- Understand the operations on Signals
- Know the Z- Transform and its properties
- Know the Fourier series representation of signals

Course Outcomes:

- Distinguish between continuous-time and discrete-time signals and systems.
- Do basic operations on signals.
- Apply Z – transform technique to signals.
- Analyze the frequency characterizes of signals by applying Fourier tools.

Contents	**60 Hrs.**
Unit 1	15 Hrs.

Introduction to continuous-time and discrete-time signals: Introduction, classification of Signals: continuous-time and discrete-time, analog and digital, deterministic and random, even and odd, periodic and nonperiodic, energy and power signals. Basic Operations on Signals: operations performed on dependent and independent variables, precedence rule for time-shifting and time scaling. Basic continuous-Time signals: unit step, unit impulse, ramp, exponential, sinusoidal exponentially damped sinusoidal, pulse signals. Basic Discrete-time Signals: Step, impulse, ramp, exponential, sinusoidal, exponentially damped sinusoidal, pulse signals. Systems viewed as interconnections of operations. Properties of Systems- Linearity, Causality, Time invariance, Memory, Stability, and Invertibility.

Unit 2	15 Hrs.

Linear Time Invariant Systems: Convolution Sum and procedure of find convolution sum, Properties of Convolution Sum, Convolution Integral and it properties, graphical interpretation of convolution, Representation for LTI Systems- Parallel and Cascade, **Properties of Systems:** Memory, causality, stability, invertibility. Step response of LTI system, Sinusoidal Steady-state response or frequency-domain representation, Solution to Differential Equations-Natural, forced and total response.

Unit 3	15 Hrs.
Z-Transform: Introduction and definition, ROC of Finite Duration Sequences-Right sided and Left sided sequences, Z-Transform and ROC of Infinite Duration Sequences-Positive time exponential, negative time exponential, double–sided time exponential signals. ROC and Stability, Properties of ROC. **Properties of Z-Transform:** Linearity, Time Shift or Translation, Multiplication by an Exponential, Multiplication by a Ramp, Convolution (Time-domain), Time-reversal, Convolution (Z-domain), Initial and Final value theorems. Z-**Transforms of Sequences:** Unit impulse, positive-time exponential, negative-time exponential, unit step, negative-time unit step, sinusoidal, unit ramp sequences. Inverse Z- transform-Partial fraction expansion method and long division method.	
Unit 4	15 Hrs.
Fourier Series Representation of Signals: Introduction, Exponential Fourier series of continuous-time signals, amplitude and phase spectra of periodic signals. **Properties of Fourier Series:** Linearity, time shift, frequency shift, Scaling, Time-differentiation, Time-domain convolution, Modulation, Parseval's Theorem. **Fourier Transform:** Expression for FT and magnitude and phase spectra, Properties of Fourier transform-Linearity, Time shift, frequency shift, scaling (Only Statements without Derivation), Inverse Fourier Transform. **Discrete-time Fourier Series:** Definition of discrete-time Fourier Series, Properties of DTFS-Linearity, Time shift, frequency shift, convolution, modulation (Only Statements without Derivation). **Discrete-time Fourier transform:** Definition and Fourier spectra, Properties of DTFT-Linearity, Time-shift, Frequency shift, scaling, Differentiation, convolution, (Only Statements without Derivation).	

Reference Books	
1	Alan V Oppenheim, Alan s. Willsky and Hamid Nawab, "Signals and systems," Pearson edition Asia/PHI, 2nd Edition, 2002.
2	Digital Signal Processing Theory and Lab Practice, 2nd Edition – DR. D Ganesh Rao and Vineeta P Gejji – Sanguine Technical Publishers, Bangalore-2008
3	Signals and Systems, 4th Edition – DR. D Ganesh Rao and SatishTunga –PEARSON Sanguine Technical Publishers, Bangalore-2008)
4	Simon Haykin and Barry Van Veen, "Signals & Systems," Wiley, 2nd Edition, 2021.
5	M J Roberts, "Signals and Systems Analysis Using Transform Methods and MATLAB,", TMG,
6	Vinay Ingle, and John G. Proakias, "Digital Image Processing using MATLAB,"

Program Name	**BSc in Electronics**		Semester	**Sixth Semester**
Course Title	**Signals and Systems Practicals**			
Course Code	DSC-ELE61P		No. of Credits	**2**
Formative Assessment Marks		**25**	Summative Assessment Marks	**25**
Note: Minimum of 10 Programmes have to be written and executed.				

Write and execute following program using MATLAB/OCTAVE/SCILAB, etc.

1. Generate and plot unit sample, unit step, ramp, real sequences
2. Generate and plot sinusoidal, cosinusoidal and periodic sequences
3. Generate even & odd components of a sequence
4. Study linear convolution of two sequences
5. Study circular convolution of two sequences
6. Perform amplitude scaling, time scaling, folding and time-shifting operations on signals
7. Perform upsampling and downsampling operation on a given sequence
8. Perform addition, subtraction and multiplication operation on signals
9. Find the linear convolution of two finite duration sequences.
10. Find the cross-correlation of two finite duration sequences.
11. Evaluate & plot auto-correlation of a sequence.
12. Compute the DTFS of a sequence and plot the magnitude and phase response.
13. Compute the IDTFS of a sequence.
14. Verify the sampling theorem**.**

Program Name	**BSc in Electronics**	Semester	**Sixth Semester**
Course Title	**Sensors and Internet of Things**		
Course Code:	**DSC-ELE62**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 1/2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Objectives:

- To introduce the sensors used in the industries and study their characteristics
- To analyze different sensor circuits
- To introduce the evolution of IoT.
- To understand the concepts of IoT Architecture
- To comprehend the essentials of IoT and its applications.

Course Outcomes:

- Apply concepts of measurements and instrumentation of sensors
- Explain the application, challenges and architecture of IoT.
- Use sensors and actuators with Controllers.
- Investigate various protocols and wireless technologies.

Contents	**60 Hrs.**
Unit 1	15 Hrs.

Sensors: Introduction, definition of sensors and transducers. **Static characteristics**: Accuracy and Inaccuracy, Precision, Range or span, tolerance, Threshold, Resolution, sensitivity, sensitivity to disturbance, linearity, drift, Repeatability, dead space, hysteresis effect. **Dynamic characteristics:** Definition, properties of the system (general relation for linear, time invariant measurement system) – zero order system, first order system and Second order system. Necessity of calibration.

Unit 2	15 Hrs.

Sensor classification: Passive and Active, Analog and Digital, Scalar and Vector. **Types of Sensors:** Principle, working and applications of Electrical sensor, light sensor, touch (Resistive and Capacitive) sensor, Range sensing, Pneumatic sensors, speed sensor, Optical sensor, temperature sensor, PIR sensors, Ultrasonic sensor.

Unit 3	15 Hrs.

Introduction to Internet of Things (IoT): Definition, IoT frame works, IoT application, identification of IoT objects and service, structural aspects of IoT, Key IoT technologies, IoT network architecture and design, drivers behind new network architecture, comparing IoT architecture, simplified IoT architecture.

Unit 4	15 Hrs.
Basics of network and network security: Introduction to networking, network types, layered network models, addressing, TCP IP, transport layer. Introduction to security, Network confidentiality. **Application protocols:** MQTT, REST/HTTP, LORa, CoAP, XMPP. **Infrastructure protocols:** Wi-Fi, Bluetooth, Zigbee and RFID. **Broad categories IoT applications:** Consumer IoT, Commercial IoT, Industrial IoT, Infrastructure IoT and Military things (IoMT). Introduction to Arduino board, printing on serial console, LED interface, DHT sensor interface.	

Reference Books

1	Allen S Moris, "Measurement and Instrumentation Principles", 3rd Edition, Kindle Edition , 2001
2	Sudip Misra, Anandarup Mukherjee, "Arijit Roy, Introduction to IoT", Cambridge University press 2021.
3	Adisetti, Arshdeep Bahga, "Internet of Things A Hands-On- Approach", 1st Edition, Orient Blackswan Private Limited - New Delhi, 2014.
4	Pethuru Raj and Anupama C. Raman, "The Internet of Things: Enabling Technologies", Auerbach Publications; 1st edition, 2017
5	Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6", Wiley, 1st edition, 2013
6	Adrian McEwen, "Designing the Internet of Things", Wiley Publishers, 2013,
7	Arshdeep Bhaga and Vijay Madisetti, Big Data Science & Analytics-A Hands on Approach, 1st Edn., VPT Publishers, 2016.

Program Name	**BSc in Electronics**		Semester	**Sixth Semester**
Course Title	**Mini Project**			
Course Code	DSC-ELE6MP		No. of Credits	**2**
Formative Assessment Marks		**25**	Summative Assessment Marks	**25**

Guidelines for Mini Project:

- A group of 4 to 6 students constitute one project batch.
- Project work has to be carried out in the Department for the entire semester.
- Duly signed report has to be submitted for the C3 Evaluation.

Scheme of Evaluation of the Mini Project

Formative Assessment (C1 and C2 Evaluation)

Activity	C1	C2
Synopsis Submission and PPT Presentation (During 2nd Week)	10 marks	----
Progress Report Submission and PPT Presentation (During 14th Week)	----	10 marks
Regularity and Performance	-----	05 marks
Total	10 marks	15 marks

Summative Assessment (C3 Evaluation)

(Combined Evaluation by Supervisor and the External Examiner)

Division	Marks
Project Report Evaluation, PPT Presentation and Demonstration of the Project Work	20
Viva-voce	05
Total	25

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