

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN

Department of Electrical and Electronics Engineering

2.6.1 The institution has stated learning outcomes (programme and course outcome)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution.

➤ POs, PSOs PEOs

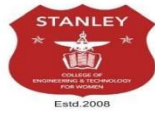


STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Private Un-aided Non-minority Autonomous Institution)
(All eligible UG courses are accredited by NBA & NAAC with 'A' grade)
Affiliated to Osmania University and Approved by AICTE

Department of Electrical & Electronics Engineering

PROGRAM OUTCOMES

- PO1. **Engineering knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.
- PO2. **Problem Analysis:** Identify, formulate, research literature and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.
- PO3. **Design/development of solutions:** Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- PO4. **Conduct investigations of complex problems:** Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
- PO5. **Modern Tool Usage:** Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
- PO6. **The Engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7. **Environment & sustainability:** Understand the impact of professional engineering solutions in societal and environmental context, and demonstrate knowledge of, and need for sustainable development.
- PO8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9. **Individual and Team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions
- PO11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12. **Life -Long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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Department Of Electrical and Electronics Engineering

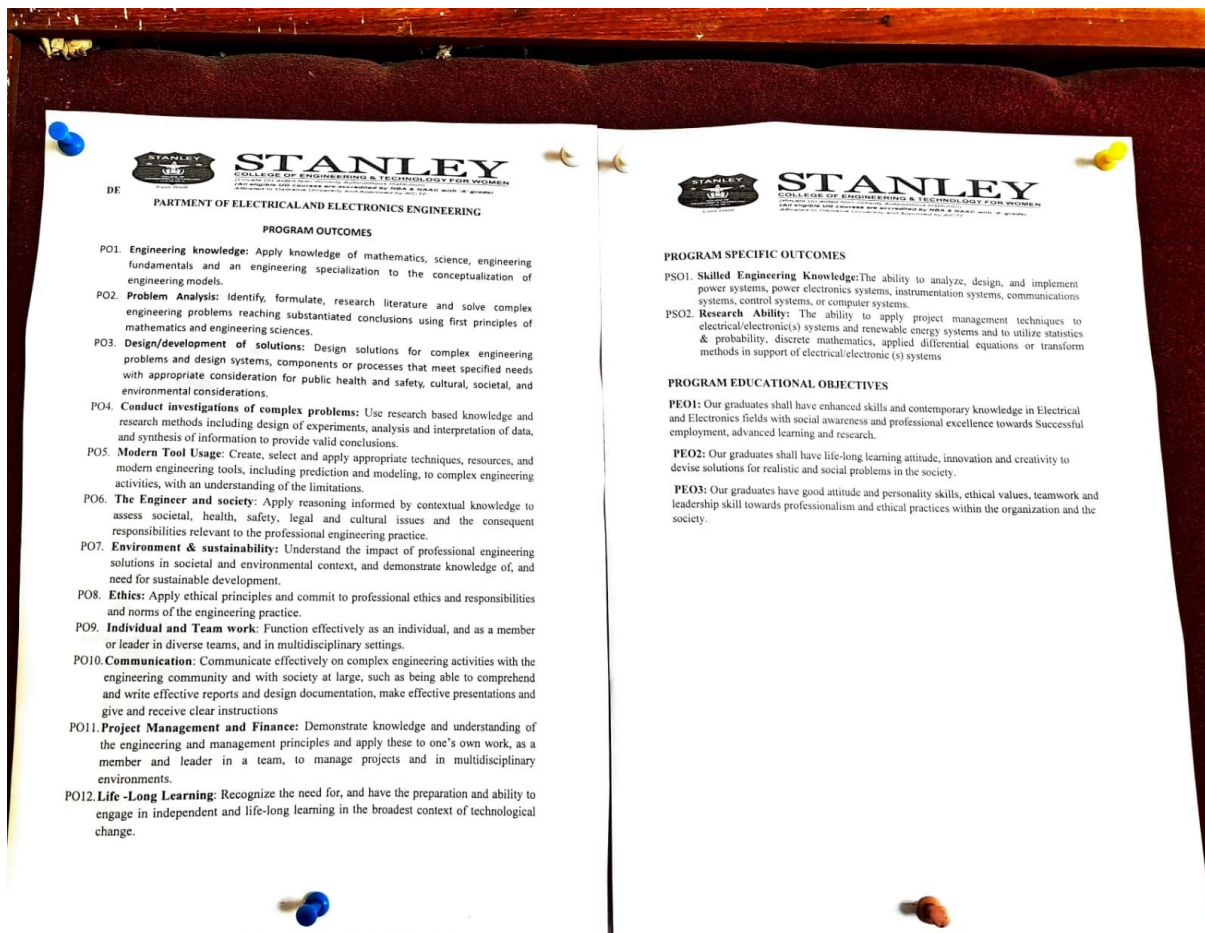
PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

| | |
|--------------|---|
| PEO 1 | Our graduates shall have enhanced skills and contemporary knowledge in Electrical and Electronics fields with social awareness and professional excellence towards successful employment, advanced learning and research. |
| PEO 2 | Our graduates shall have life-long learning attitude, innovation and creativity to devise solutions for realistic and social problems in the society. |
| PEO 3 | Our graduates have good attitude and personality skills, ethical values, teamwork and leadership skill towards professionalism and ethical practices within the organization and the society. |

PROGRAM SPECIFIC OUTCOMES (PSOS)

| | |
|--------------|--|
| PSO 1 | Skilled Engineering Knowledge: The ability to analyze, design, and implement power systems, power electronic systems, instrumentation systems, communication systems, control systems, and computer systems. |
| PSO 2 | Research Ability: The ability to apply project management techniques to electrical/electronic (s) and renewable energy systems and to utilize statistics & and probability, discrete mathematics, applied differential equations or transform methods in support of electrical/electronic (s) systems |

➤ **Program Outcomes Notice Board Display**



➤ Design procedure of POs, PSOs PEOs using Flow Chart



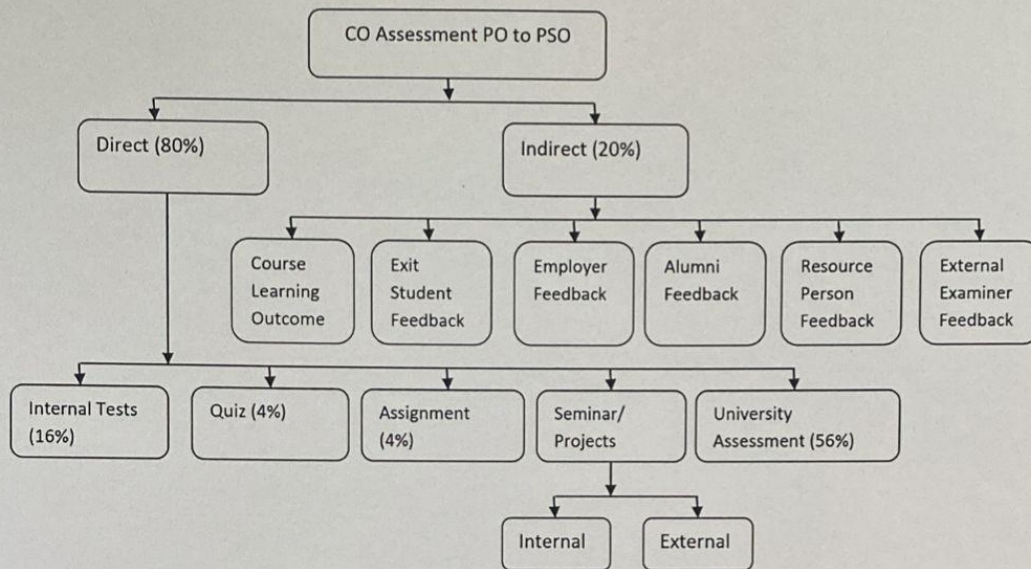
Stanley College of Engineering & Technology for Women

Chapel Road, Abids, Hyderabad

(AUTONOMOUS)

Approved by AICTE, Affiliated to Osmania, Accredited by NBA & NAAC with "A" Grade

CO-PO Analysis Flow Chart



HOD EEE
Dr. Nagasekhara Reddy Naguru

HEAD
Department of Electrical & Electronics Engineering
Stanley College of Engg. & Tech. for Women
Chapel Road, Abids, Hyderabad.

➤ **CO-PO Mapping**

COURSE INFORMATION SHEET

| | | |
|---|-------------------------------------|----------------------|
| COURSE NAME: MICROPROCESSORS AND MICROCONTROLLERS | COURSE CODE: PC423EE | AY: 2022 – 23 |
| PROGRAM / YEAR / SEMESTER: B.E VI SEM | REGULATION: AICTE (UG) | |
| COURSE TYPE: CORE | CREDITS: 3 | |
| COURSE AREA/DOMAIN: MICROPROCESSORS | CONTACT HOURS: 3 HOURS/WEEK. | |
| CORRESPONDING LAB COURSE NAME, CODE (IF ANY): MICROPROCESSORS AND MICROCONTROLLERS LAB (PC462EE) | | |
| PRE-REQUISITE COURSES/SEM/CODE: DIGITAL ELECTRONICS AND LOGIC DESIGN (PC410EE) | | |

SYLLABUS:

| UNIT | DETAILS | HOURS (LECTURE) |
|--------------|--|-----------------|
| I | UNIT I – Microprocessor Architecture of 8086 – Segmented memory, Addressing modes, Instruction set, Minimum and maximum mode operations. | 12 |
| II | UNIT II – Introduction to Programming Assembly language programming, Assembler directives, Simple programs using assembler, Strings, Procedures, Macros timing. | 11 |
| III | UNIT III – Interfacing to Microprocessor Memory and I/O interfacing, A/D and D/A interfacing, 8255(PPI), Programmable Internal Timer (8253), Keyboard and display interlace, Interrupts of 8086. | 12 |
| IV | UNIT IV – Microcontroller Architecture Types of Micro Controllers, 8051 MC – Architecture input/output pins, Ports and circuits, Internal and external memories, counters and timers, serial data input/output, Interrupts & timers. | 11 |
| V | UNIT V – Introduction to Programming Basic Assembly language programming, instruction cycle, Addressing modes, 8051 instruction set, Classification of instructions, Simple programs. | 10 |
| TOTAL | | 56 |

TEXT/REFERENCE/ADDITIONAL BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLISHER |
|-----|--|
| T1 | 1. Douglas, V. Hall microprocessors and Interfacing- Tata McGraw Hill-Revised 2nd Edition, 2017. |
| T2 | 2. Kenneth. J. Ayala – The 8051 Microcontroller Architecture Programming and Applications”, Thomson publishers, 2nd Edition, 2007. |
| R1 | 3. Krishna Kant – microprocessors and Microcontrollers – Architecture, Programming and System Design 8085, 8086, 8051, 8096, Prentice-Hall india-2007. |
| R2 | 4. Waiter A. Triebel & Avtar Singh – The 8088 and 8086 Microprocessor – Pearson Publishers, 4th Edition, 2007. |

WEB SOURCE REFERENCES: (Detailed Topic link)

| | | |
|----------|----|---|
| UNIT I | W1 | https://www.youtube.com/watch?v=Xl2nWDcy0To |
| | W2 | https://www.youtube.com/watch?v=DmwOSdWzZ3E |
| | W3 | https://nptel.ac.in/courses/108103157 |
| UNIT II | W1 | https://www.youtube.com/watch?v=iROUX8eYU38&list=RDCMUC-AyJLkoQSxTHN3zIThxg6w&index=2 |
| | W2 | https://nptel.ac.in/courses/108103157 |
| UNIT III | W1 | https://www.youtube.com/watch?v=gjq9fWku34U&list=RDCMUC-AyJLkoQSxTHN3zIThxg6w&index=21 |
| | W2 | https://nptel.ac.in/courses/108103157 |
| UNIT IV | W1 | https://www.youtube.com/watch?v=nfq_WaPGb6o&list=RDCMUC-AyJLkoQSxTHN3zIThxg6w&index=12 |
| | W2 | https://nptel.ac.in/courses/108105102 |
| UNIT V | W1 | https://www.youtube.com/watch?v=6Q362E3LIgo&list=RDCMUC-AyJLkoQSxTHN3zIThxg6w&index=35 |
| | W2 | https://www.youtube.com/watch?v=3gl8RAEo40c&list=RDCMUC-AyJLkoQSxTHN3zIThxg6w&index=21 |
| | W3 | https://nptel.ac.in/courses/108105102 |

COURSE OUTCOMES:

| COURSE CODE | DESCRIPTION | PO (1 – 12) MAPPING | PSO (1, 2) MAPPING | BLOOMS TAXONOMY LEVEL |
|-------------|---|---------------------|--------------------|-----------------------|
| PC423EE.1 | Acquire the knowledge of architecture of 8086 | 1,2,3,4,5,11,12 | 1,2 | Understand (Level 2) |
| PC423EE.2 | Understanding the writing of assembly language programming for different applications | 1,2,3,4,5,11,12 | 1,2 | Apply (Level 3) |
| PC423EE.3 | Analyse the interfacing of 8086 to different applications | 1,2,3,4,5,11,12 | 1,2 | Analyze (Level 4) |
| PC423EE.4 | Understanding the architecture of 8051 | 1,2,3,4,5,11,12 | 1,2 | Apply (Level 3) |
| PC423EE.5 | Analyse the coding of 8051 for different problems | 1,2,3,4,5,11,12 | 1,2 | Analyze (Level 4) |

(Course outcomes Minimum 4 Maximum 6)

COURSE OUTCOMES VS POs MAPPING (DETAILED; HIGH:3; MEDIUM:2; LOW:1):

| COURSE CODE | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| PC423EE.1 | 2 | 2 | 2 | 1 | 2 | | | | | | 1 | 1 | 2 | 1 |
| PC423EE.2 | 2 | 3 | 1 | 1 | 1 | | | | | | 1 | 2 | 3 | 1 |
| PC423EE.3 | 2 | 2 | 2 | 1 | 2 | | | | | | 1 | 2 | 2 | 2 |
| PC423EE.4 | 3 | 2 | 2 | 1 | 2 | | | | | | 1 | 2 | 3 | 2 |
| PC423EE.5 | 3 | 2 | 2 | 1 | 1 | | | | | | 2 | 2 | 3 | 1 |
| AVG | 2.4 | 2.2 | 1.8 | 1 | 1.6 | | | | | | 1.2 | 1.8 | 2.6 | 1.4 |

* For Entire Course, PO & PSO Mapping

Note: Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

If there is no correlation, put “-”

POs & PSO REFERENCE:

| | | | | | |
|-----|-----------------------|------|------------------------------|------|------------------------------|
| PO1 | Engineering Knowledge | PO6 | Engineer & Society | PO11 | Project Management & Finance |
| PO2 | Problem Analysis | PO7 | Environment & Sustainability | PO12 | Life Long Learning |
| PO3 | Design & Development | PO8 | Ethics | | |
| PO4 | Investigations | PO9 | Individual & Team Work | PSO1 | Skilled Professional |
| PO5 | Modern Tools | PO10 | Communication Skills | PSO2 | Research Capability |

GAPS IN THE SYLLABUS - TO MEET COs, POs & PSOs:

| SNO | GAP | PROPOSED ACTIONS | PROPOSED RESOURCE | CO | PO / PSO |
|-----|--|------------------|-------------------|----|-------------------|
| 1 | 8085 Architecture | Advise | NPTEL Lectures | 1 | 1,2,3,4,11,12/1,2 |
| 2 | Explanation about 80186, 80286, 80386, ... | Advise | NPTEL Lectures | 2 | 1,2,3,4,11,12/1,2 |

TOPICS BEYOND SYLLABUS: Additional course material / learning material / Lab Experiments / Projects

| S.No | Description | CO | PO/PSO |
|------|--|----|-----------------------|
| 1 | Differences between 8085, 8086 and latest computers | 1 | PO1,PO2,PO3,PSO1,PSO2 |
| 2 | Writing a ALP to find out LCM and GCD of given numbers | 2 | PO1,PO2,PO3,PSO1,PSO2 |
| 3 | Interfacing of stepper motor in both directions | 3 | PO1,PO2,PO3,PSO1,PSO2 |
| 4 | Role of microcontroller in embedded systems | 4 | PO1,PO2,PO3,PSO1,PSO2 |
| 5 | PIC Microcontroller programming | 5 | PO1,PO2,PO3,PSO1,PSO2 |

Innovation / Pedagogical Initiatives to cater Weak & Advanced Learners: Multimedia Learning Process, Mind Map, Z to A approach, Lecture method & Interactive Learning, Project based learning, Computer assisted Learning, Smart Class Room.

INSTRUCTIONAL METHODOLOGIES:

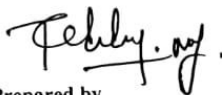
| | | | |
|---------------------|------------------------|-------------------------|-----------------------|
| REAL WORLD EXAMPLES | COLLABORATIVE LEARNING | QUALITY LAB EXPERIMENTS | OBSERVATIONS RECORDED |
| INDUSTRY INTERNSHIP | SUMMER TRAINING | EXPERT GUEST LECTURES | PROJECTS |
| USE OF ICT | ANY OTHER (SPECIFY) | | |

ASSESSMENT METHODOLOGIES-DIRECT

| | | | |
|----------------------------|---------------------|-------------|-----------------------|
| EXAM QUESTIONS | TUTORIAL QUESTIONS | ASSIGNMENTS | LABORATORY TESTS |
| PROJECT EVALUATION | STUDENT ARTIFACTS | ORAL EXAMS | PROJECT PRESENTATIONS |
| INTERNALLY DEVELOPED EXAMS | ANY OTHER (SPECIFY) | | |

ASSESSMENT METHODOLOGIES-INDIRECT

| | | |
|---------------------|--------------------------|-----------------------------|
| STUDENT EXIT SURVEY | CO-CURRICULAR ACTIVITIES | EXTRA CURRICULAR ACTIVITIES |
|---------------------|--------------------------|-----------------------------|


 Prepared by
 (Dr. Nagasekhara Reddy Naguru)


 Approved by
 (HOD)
 HEAD
 Department of Electrical & Electronics Engineering,
 Stanley College of Engg. & Tech. for Women
 Chapel Road, Abids, Hyderabad

Course Outcomes Notice Board Display



STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
COURSE OUTCOMES Academic Year-2022-2023

VI SEM

| S.no | Subject | Subject Code | CO Statement |
|------|--|--------------|--|
| 1 | Finance and Accounting | HS103CM.1 | Evaluate the financial performance of the business unit. |
| | | HS103CM.2 | Take decisions on selection of projects. |
| | | HS103CM.3 | Take decisions on procurement of finances. |
| | | HS103CM.4 | Analyse the liquidity, solvency and profitability of the business unit. |
| | | HS103CM.5 | Evaluate the overall financial functioning of an enterprise. |
| 2 | Microprocessors and Microcontrollers | PC423EE.1 | Acquire the knowledge of architecture of 8086, writing assembly language programming for different applications |
| | | PC423EE.2 | Explain types of microcontrollers and their applications |
| 3 | Digital Signal Processing and Applications | PC424EE.1 | Acquire the knowledge of - Classification of discrete time signals & discrete time systems, |
| | | PC424EE.2 | Properties of Z-transforms, Discrete time Fourier transform. |
| | | PC424EE.3 | Analyze the Characteristics of IIR digital filters, FIR digital filters. |
| 4 | Switchgear and Protection | PC425EE.1 | Acquire the knowledge of construction, working principles of different electromagnetic and static relays used to protect generators, transformers, transmission lines and distribution feeders |
| | | PC425EE.2 | Analyze the Characteristics of over current, over voltage, distance and differential relays and also their applications in power system networks. |
| | | PC425EE.3 | Explain the working principle. Construction, rating and applications of different types of circuit breakers used in power system networks |
| | | PC425EE.4 | Understand the construction details, advantages, disadvantages of Gas Insulation substations. |
| 5 | High Voltage Engineering | PES05EE.1 | Explain the fundamentals of conduction and breakdown in various solid, liquid and gaseous insulating materials |
| | | PES05EE.2 | Able to design the circuits used in high voltage AC, DC generation, measurement and testing. |
| | | PES05EE.3 | Able to understand the significance of standard impulse wave shapes and radio interference measurement. |
| 6 | OOP using Java | OE602CS.1 | develop java applications using OO concepts and packages write multi threaded programs with synchronization |
| | | OE602CS.2 | Implement real world applications using java collection frame work and I/O classes |
| | | OE602CS.3 | write Event driven GUI programs using AWT/Swing |

| | | | |
|---|--|-----------|--|
| 7 | Microprocessors and Microcontrollers Lab | PC462EE.1 | Apply the design concepts for development of a process and interpret data. |
| | | PC462EE.2 | Demonstrate knowledge of programming environment, compiling, debugging, linking and executing variety of programs |
| | | PC462EE.3 | Demonstrate documentation and presentation of the algorithms/flowcharts /programs in a record form. |
| | | PC462EE.4 | Validate the process using known input-output parameters |
| 8 | Digital Signal Processing Lab | PC463EE.1 | Compute and write MATLAB code to generate basic waves and perform basic operations on them. |
| | | PC463EE.2 | Compute and write MATLAB code to apply sampling theorem, to obtain convolution and compute DFT and FFT |
| | | PC463EE.3 | Compute and write MATLAB code to design FIR and IIR filters |
| | | PC463EE.4 | Compute and write MATLAB code to obtain convolution of sequences, Design of FIR and IIR filters, compute DFT and FFT algorithms, Impulse response and generate basic waves using DSP kit |
| 9 | Summer Internship | PW701EE.1 | Get Practical experience of software design and development, and coding practices within Industrial/R&D Environments |
| | | PW701EE.2 | Gain working practices within Industrial/R&D Environments |
| | | PW701EE.3 | Prepare reports and other relevant documentation |

Febby. yf.

HOD

HEAD

Department of Electrical & Electronics Engineering,
Stanley College of Engg. & Tech. for Women,
Chapel Road, Abids, Hyderabad.

➤ **MID Question paper with Bloom's Taxonomy and CO-PO Mapping**

Stanley College of Engineering & Technology for Women
Chapel Road, Hyderabad

VI – Semester BE- EEE I-Mid Examinations – 03rd May 2023

MICROPROCESSORS & MICROCONTROLLERS

[Time: 2:00 PM – 3:00 PM] [Max. Marks: 20]

SET 2

Note: 1) Answer all questions of Part-A
2) Answer any two questions from Part-B

PART-A (6 Marks)

1. Discuss the function of M/IO in 8086? (2)
2. What is meant by "MACRO" in assembly language programming? (2)
3. Indicate the addressing modes of the following instruction: (2)
(a.) MOV DL, AF h (b.) MOV CL, [BX]

PART-B (14 Marks)

4. (a.) Draw the architecture of 8086 microprocessor and explain it in detail? (5)
(b.) Explain about Arithmetic instructions in detail? (2)
5. (a.) Write an assembly language program to multiply two 8-bit signed numbers?
Explain with one example? (5)
(b.) Explain the following 8086 directives (2)
(i.) ENDM (ii.) SHORT
6. (a.) Explain about 8086 addressing modes? (5)
(b.) What are the differences between "PROCEDURE" and "MACRO"? (2)

***** Paper set by Dr. Nagasekhara Reddy Naguru

CO & PO mapping and Bloom's Taxonomy

| Question | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 |
|------------------|---------------|----------|-----------|----------------------|-------------------|---------------------------|
| Course Outcome | CO1 | CO2 | CO1 | CO1 | CO2 | CO1, CO2 |
| Bloom's Taxonomy | Understanding | Remember | Knowledge | Knowledge & Remember | Apply & Knowledge | Knowledge & Understanding |

Stanley College of Engineering & Technology for Women

Chapel Road, Hyderabad

VI – Semester BE- EEE II-Mid Examinations – 07th August 2023

MICROPROCESSORS & MICROCONTROLLERS



[Time: 10:00 AM – 11:00 AM]

[Max. Marks: 20]

Note: 1) Answer all questions of Part-A
2) Answer any two questions from Part-B

SET 2

PART-A (6 Marks)

1. Write the differences between Microprocessors and Microcontrollers? (2)
2. List the various special function registers in 8051 Microcontroller? (2)
3. List out the various addressing modes of 8051 Microcontroller? (2)

PART-B (14 Marks)

4. (a.) Explain the different modes of operation of 8255 PPI? (3)
(b.) Explain the different modes of operation of 8253 PIT? (4)
5. (a.) Draw the pin configuration of 8051 Microcontroller and explain the function of each pin in detail? (5)
(b.) Explain the difference between JUMP and CALL? (2)
6. (a.) Explain the port operation of 8051 Microcontroller? (3)
(b.) Write an assembly language program to find the minimum number in an array of ten 8-bit numbers of an 8051 Microcontroller? (4)

Paper set by Dr. Nagasekhara Reddy Naguru

CO & PO mapping and Bloom's Taxonomy

| Question | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 |
|------------------|---------------|-----------|----------|----------------------|---------------------------|-------------------|
| Course Outcome | CO4 | CO5 | CO5 | CO3 | CO4 | CO5 |
| Bloom's Taxonomy | Understanding | Knowledge | Remember | Knowledge & Remember | Understanding & Knowledge | Knowledge & Apply |

➤ Quiz Paper with Blooms Taxonomy

Name: SADIA BEGUM

Roll No: 160620734022

Stanley College of Engineering & Technology for Women

Chapel Road, Hyderabad

VI – Semester BE- EEE I-Mid Examinations – 03rd May 2023

MICROPROCESSORS & MICROCONTROLLERS

[Time: 03:00 PM – 03:10 PM]

[Max. Marks: 5]

Each question is of 0.5 marks.

1. 33rd pin of 8086 describes MN/MX (maximum/minimum pin)
2. The number of address lines of 8086 processor is 20
3. Write an example of 8086 register indirect addressing mode MOV AX, [BX]
4. For BCD addition, which instruction can be used? [c]
(a.) ADD (b.) AAA (c.) DAA (d.) ADC
5. What is meant by instruction XLAT Translating the instruction
6. What is meant by the directive DB define byte
7. How to set carry flag to 1 By compare
8. What is the physical address of 076A:2345h INT 3
9. What is meant by the directive ENDS ending a segment
10. 8086 is a 16-bit processor
(a.) 8-bit processor (b.) 16-bit processor
(c.) 20-bit processor (d.) 32-bit processor

CO & BLOOMS TAXONOMY MAPPING

| | | | | | |
|-----------------|-----------|---------------|-------------|-----------|----------|
| Question | 1 | 2 | 3 | 4 | 5 |
| Course Outcome | CO1 | CO1 | CO1 | CO1 | CO1 |
| Blooms Taxonomy | Knowledge | Understanding | Remember | Knowledge | Remember |
| Question | 6 | 7 | 8 | 9 | 10 |
| Course Outcome | CO2 | CO2 | CO2 | CO2 | CO1 |
| Blooms Taxonomy | Knowledge | Understanding | Application | Knowledge | Remember |

Name: P. Yamini Roll No: 160620930306

Stanley College of Engineering & Technology for Women
Chapel Road, Hyderabad

VI – Semester BE- EEE II-Mid Examinations – 07th August 2023

MICROPROCESSORS & MICROCONTROLLERS

[Time: 11:00 AM – 11:10 AM]

[Max. Marks: 5]

Each question is of 0.5 marks.

1. The MSB value of Control Word Register of 8255 is 1 to operate in I/O Mode.
2. How many counters/timers are present in 8253 PIT _____?
(a.) 1 ~~(b.) 2~~ (c.) 3 (d.) 4
3. Memory interfacing of 8086 requires 8255 PPI. Is it True/False True?
4. 8051 is a _____.
(a.) 8-bit Microcontroller (b.) 16-bit Microcontroller
(c.) 20-bit Microcontroller (d.) 32-bit Microcontroller
5. What are the sizes of internal RAM and ROM of 8051 _____?
(a.) 4 KB and 128 Bytes respectively ~~(b.) 128 Bytes and 4 KB respectively~~
(c.) 128 Bytes and 128 Bytes respectively (d.) 4 KB and 4 KB respectively
6. How many internal ports and timers are present in 8051?
(a.) 4 and 3 respectively (b.) 2 and 4 respectively
~~(c.) 4 and 2 respectively~~ (d.) 4 and 4 respectively
7. 8051 address lines are _____.
(a.) 8 Address lines ~~(b.) 16 Address lines~~ (c.) 20 Address lines (d.) 12 Address lines
8. MOV A, @R0 is an example of _____ addressing mode.
(a.) Immediate (b.) Register (c.) Direct ~~(d.) Register indirect~~
9. Which instruction can be used to transfer the data from external memory location to register?
(a.) MOV (b.) MOVC ~~(c.) MOVX~~ (d.) MOVP
10. 8051 Microcontroller operating frequency is 12 MHz.

CO & BLOOMS TAXONOMY MAPPING

| | | | | | |
|-----------------|-----------|---------------|-------------|-----------|----------|
| Question | 1 | 2 | 3 | 4 | 5 |
| Course Outcome | CO3 | CO3 | CO3 | CO4 | CO4 |
| Blooms Taxonomy | Knowledge | Understanding | Remember | Knowledge | Remember |
| Question | 6 | 7 | 8 | 9 | 10 |
| Course Outcome | CO4 | CO4 | CO5 | CO5 | CO5 |
| Blooms Taxonomy | Knowledge | Understanding | Application | Knowledge | Remember |

➤ Course showing all Course Objectives and Course Outcomes



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DEPAR

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE OUTCOMES Academic Year-2022-2023

IV SEM

| S.no | Subject | Subject Code | CO Statement |
|------|-----------------------------------|--------------|---|
| 1 | Effective Technical Communication | SHS401EG.1 | To understand the process and barriers of communication |
| | | SHS401EG.2 | To learn the aspects of communication and presentation. |
| | | SHS401EG.3 | To comprehend the types of business correspondence |
| | | SHS401EG.4 | To analyze the techniques of report writing |
| | | SHS401EG.5 | To get the knowledge of basics of manual writing |
| 2 | Electrical Machines I | SPC401EE.1 | Understand the concepts of magnetic circuits |
| | | SPC401EE.2 | Understand electrical principle, laws, and working of DC machines. |
| | | SPC401EE.3 | Analyse the construction and characteristics and application of various types of DC generators. |
| | | SPC401EE.4 | Analyse the construction and characteristics and application of various types of DC motors and testing of motors. |
| | | SPC401EE.5 | Understand electrical principle, laws, and working of transformer and losses and also conduct various tests on the transformer. |
| 3 | Control Systems | SPC402EE.1 | Understand the concept of the terms control systems, feedback, Mathematical modeling of Electrical and Mechanical systems. |
| | | SPC402EE.2 | Explain the time domain and frequency response analysis of control systems. |
| | | SPC402EE.3 | Acquire the knowledge of various analytical techniques used to determine the stability of control systems. |
| | | SPC402EE.4 | Able to understand the importance of design of compensators |
| | | SPC402EE.5 | Able to demonstrate controllability and observability of modern control systems. |
| 4 | Switching Theory and Logic Design | SPC403EE.1 | understand and apply the Boolean algebra, including CMOS gates and arithmetic circuits. |
| | | SPC403EE.2 | apply combinational digital circuits for logic functions |
| | | SPC403EE.3 | use the concepts of Boolean Algebra for the analysis & design of sequential logic circuits |
| | | SPC403EE.4 | design various A/D and D/A converters |
| | | SPC403EE.5 | design various logic gates starting from simple ordinary gates to complex programmable logic |

| | | | |
|---|---------------------------------------|------------|--|
| | | | devices and arrays. |
| 5 | OOP Using JAVA | SPC901CS.1 | To introduce fundamental object-oriented concepts of Java programming Language such as classes, inheritance, packages and interfaces |
| | | SPC901CS.2 | To introduce concepts of exception handling and multi-threading |
| | | SPC901CS.3 | To use various classes and interfaces in java collection framework and utility classes |
| | | SPC901CS.4 | To understand the concepts of GUI programming using AWT controls |
| | | SPC901CS.5 | To introduce Java I/O streams and serialization |
| 6 | Electrical Machines – 1 Lab | SPC411EE.1 | Estimate the efficiency and voltage regulation of D.C. generator and transformers under various loading conditions |
| | | SPC411EE.2 | Estimate the efficiency and voltage regulation of D.C. generator and transformers under various loading conditions |
| | | SPC411EE.3 | Acquire the knowledge of efficiency and speed regulation D.C. Motors under various loading conditions. |
| | | SPC411EE.4 | Able to understand the speed control of DC motor by conducting different experiments |
| | | SPC411EE.5 | Analyze the transformer performance by performing different tests. |
| 7 | Control Systems Lab | SPC412EE.1 | Understand the concept of the terms control systems, feedback, Mathematical modeling of Electrical and Mechanical systems. |
| | | SPC412EE.2 | Explain the time domain and frequency response analysis of control systems. |
| | | SPC412EE.3 | Acquire the knowledge of various analytical techniques used to determine the stability of control systems |
| | | SPC412EE.4 | Able to understand the importance of design of compensators |
| | | SPC412EE.5 | Able to demonstrate controllability and observability of modern control systems |
| 8 | Switching Theory and Logic Design Lab | SPC413EE.1 | Understand working of logic families and logic gates |
| | | SPC413EE.2 | Design and implement Combinational and Sequential logic circuits |
| | | SPC413EE.3 | Understand the process of Analog to Digital conversion and Digital to Analog conversion. |
| | | SPC413EE.4 | Use PLCs to implement the given logical problem |
| | | SPC413EE.5 | Analyze synchronous and asynchronous counters |
| 9 | Internship-I | SPW511EE.1 | Design/develop a small and simple product in hardware or software |
| | | SPW511EE.1 | Complete the task or realize a pre-specified target, with limited scope, rather than taking up a complex task and leave it. |
| | | SPW511EE.1 | Learn to find alternate viable solutions for a given problem and evaluate these alternatives with reference to pre-specified criteria. |
| | | SPW511EE.1 | Implement the selected solution and document the same |
| | | SPW511EE.1 | Able to write a technical report and present it to appropriate audience. |

| Course Code | MICROPROCESSOR AND MICROCONTROLLERS | | | | | | Core/Elective |
|---|-------------------------------------|---|---|---|-----|-----|---------------|
| PC423EE | (Common to EEE and EIE) | | | | | | Core |
| Prerequisite | L | T | D | P | CIE | SEE | Credits |
| - | 3 | 0 | 0 | 0 | 30 | 70 | 3 |
| <p>Course Objectives To be able to understand in details about 8086 microprocessor architecture, programming and interfacing To be able to understand about 8051 microcontroller architecture, and programming</p> <p>Course outcomes At the end of the course students will be able to Acquire the knowledge of architecture of 8086, writing assembly language programming for different applications Explain types of microcontrollers and their applications</p> | | | | | | | |

UNIT-I

Microprocessor: Architecture of 8086 – Segmented memory, Addressing modes, Instruction set, Minimum and maximum mode operations.

UNIT-II

Introduction to Programming: Assembly language programming, Assembler directives, Simple programs using assembler, Strings, Procedures, Macros timing.

UNIT-III

Interfacing to Microprocessor: Memory and I/O interfacing, A/D and D/A interfacing, 8255(PPI), Programmable Internal Timer (8253), Keyboard and display interlace, Interrupts of 8086.

UNIT-IV

Micro Controller Architecture: Types of Micro Controllers, 8051 MC – Architecture input/output pins, Ports and circuits, Internal and external memories, counters and timers, serial data input/output, Interrupts & timers.

UNIT-V

Introduction to Programming: Basic Assembly language programming, instruction cycle, Addressing modes, 8051 instruction set, Classification of instructions, Simple programs.

Suggested Reading:

1. Douglas, V. Hall microprocessors and Interfacing- Tata McGraw Hill-Revised 2nd Edition, 2017.
2. Krishna Kant – microprocessors and Microcontrollers – Architecture, Programming and System Design 8085, 8086, 8051, 8096, Prentice-Hall india-2007.
3. Kenneth. J. Ayala – The 8051 Microcontroller Architecture Programming and Applications”, Thomson publishers, 2nd Edition, 2007.
4. Waiter A. Triebel & Avtar Singh – The 8088 and 8086 Microprocessor – Pearson Publishers, 4th Edition, 2007.

List of POs, PSOs PEOs

STANLEY COLLEGE OF ENGINEERING AND TECHNOLOGY FOR WOMEN
Chapel Road, Abids, Hyderabad.
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

PROGRAM OUTCOMES

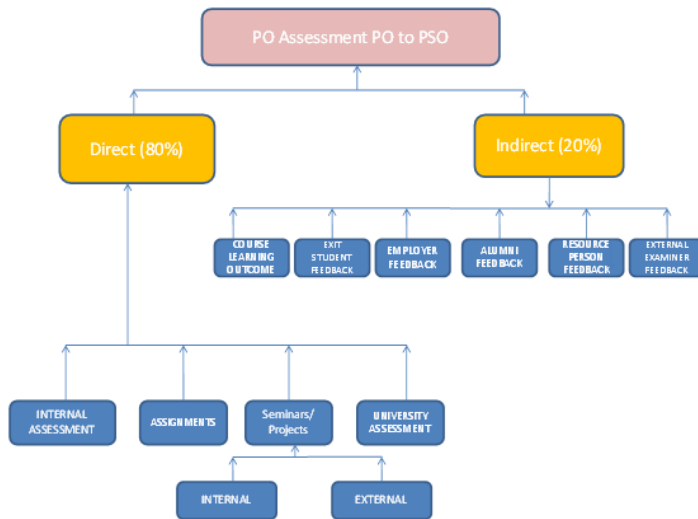
- PO1. **Engineering knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.
- PO2. **Problem Analysis:** Identify, formulate, research literature and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.
- PO3. **Design/development of solutions:** Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- PO4. **Conduct investigations of complex problems:** Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
- PO5. **Modern Tool Usage:** Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
- PO6. **The engineer and society:** Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
- PO7. **Environment & sustainability:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO8. **Ethics:** Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.
- PO9. **Individual and Team work:** Understand and commit to professional ethics and responsibilities and norms of engineering practice.
- PO10. **Communication:** Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.
- PO11. **Project Management and Finance:** Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.
- PO12. **Lifelong Learning:** Recognize the need for, and have the ability to engage in independent and life-long learning

PROGRAM SPECIFIC OUTCOMES

PSO 1.Problem-Solving Skills: The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for the benefit of students.

PSO2. Design,implement,test,and evaluate a computer system,component,or algorithm to meet desired needs and to solve a computational problem.

Flow chart





Stanley College of Engineering and Technology for Women
 Chapel Road, Abids, Hyderabad – 500 001

Department of Computer Science and Engineering
V SEM (A.Y- 22-23)

| Name of the Course/lab | UNIQUE CODE | COURSE OUTCOMES |
|--|--------------------|---|
| SOFTWARE ENGINEERING(PC501CS) | PC501CS.1 | Acquired working knowledge of alternative approaches and techniques for each phase of software development |
| | PC501CS.2 | Acquired working knowledge of alternative approaches and techniques for each phase of software development |
| | PC501CS.3 | Acquire skills necessary as an independent or as part of a team for completing a project |
| | PC501CS.4 | Acquire skills necessary as an independent or as part of a team for completing a project |
| | PC501CS.5 | Concede product quality through testing techniques employing appropriate metrics by understanding the practical challenges associated with the development of a significant software system |
| PRINCIPLES OF PROGRAMMING LANGUAGE S(PC502CS) | PC502CS.1 | Ability to express syntax and semantics in formal notation |
| | PC502CS.2 | Ability to apply suitable programming paradigm for the application |
| | PC502CS.3 | Gain Knowledge and comparison of the features programming languages. Program in different language paradigms and evaluate their relative benefits |
| | PC502CS.4 | Identify and describe semantic issues associated with variable binding, scoping rules, parameter passing, and exception handling. |
| | PC502CS.5 | Understand the design issues of object-oriented and functional languages. |
| AUTOMATA LANGUAGE & COMPUTATION(PC503CS) | PC503CS.1 | To define and analyze the Deterministic and Nondeterministic Finite Automata and automata with output for any given language |
| | PC503CS.2 | To solve the problems relating context free languages and machines accepted by CFG. |
| | PC503CS.3 | To identify formal language classes and membership properties of languages. |

| | | |
|---|------------------|--|
| | PE515CS.5 | Assess the solutions, Use K-means clustering and K-NN classification methods, Reading data from MySQL and NoSQL databases. |
| SOFTWARE ENGINEERING LAB(PC551CS) | PC551CS.1 | Analyze and design software requirements in an efficient manner. |
| | PC551CS.2 | Use open-source case tools to develop software. |
| | PC551CS.3 | Implement the code |
| | PC551CS.4 | Design and debug the code |
| | PC551CS.5 | Make test cases and test the code |
| ARTIFICIAL INTELLIGENCE LAB(PC552CS) | PC552CS.1 | Design and develop solutions for informed and uninformed search problems in AI |
| | PC552CS.2 | Demonstrate reasoning in first order logic using Prolog. |
| | PC552CS.3 | Utilize advanced package like NLTK for implementing natural language processing. |
| | PC552CS.4 | Demonstrate and enrich knowledge to select and apply python libraries to synthesize information and develop supervised learning models |
| | PC552CS.5 | Develop a case study in multidisciplinary areas to demonstrate use of AI |
| COMPUTER NETWORK LAB(PC553CS) | PC553CS.1 | Implement Various commands |
| | PC553CS.2 | Implement various protocols using TCP and UDP |
| | PC553CS.3 | Program using sockets. |
| | PC553CS.4 | Use simulation tools to analyze the performance of various network protocols. |
| | PC553CS.5 | Implement and Analyze various routing algorithms. |

| | | |
|----------------------------------|-----------|---|
| | PC503CS.4 | To solve the problems related to Turing Machines |
| | PC503CS.5 | To acquire a fundamental understanding of core concepts relating to the theory of computation and computational models including (but not limited to) decidability and intractability |
| ARTIFICIAL INTELLIGENCE(PE512CS) | PE512CS.1 | Formalize a problem in the language/framework of different AI methods |
| | PE512CS.2 | Illustrate basic principles of AI in solutions that require problem solving, search, inference. |
| | PE512CS.3 | Represent natural language/English using Predicate Logic to build knowledge through various representation mechanisms |
| | PE512CS.4 | Demonstrate understanding of steps involved in building of intelligent agents, expert systems, Bayesian networks. |
| | PE512CS.5 | Differentiate between learning paradigms to be applied for an application. |
| COMPUTER NETWORK(PC505CS) | PC505CS.1 | Understanding Data communication Components ,and Techniques for Bandwidth Utilization. |
| | PC505CS.2 | Investigating the reference model of Data link Layer and analyzing Flow control and error control techniques , and Protocols. |
| | PC505CS.3 | Understanding different switching techniques, and differences of IPV4 and IPV6 header ,InternetControl Protocol, and Network routing Algorithm. |
| | PC505CS.4 | Analyzing Process-to process communication using Transport Layer, and Understanding Congestion control, and quality of Service Techniques. |
| | PC505CS.5 | Analyze and understand the working of application Layer such as DNS, mail, file transfer and Cryptography and Network security Attacks.. |
| DATA SCIENCE(PE515CS) | PE515CS.1 | Understand the mathematical background for Data science |
| | PE515CS.2 | Assess and analyze the statistics of the data |
| | PE515CS.3 | Use linear, non-linear regression models, and classification techniques for data analysis. |
| | PE515CS.4 | Develop R codes for data science solutions |



Stanley College of Engineering and Technology for Women
 Chapel Road, Abids, Hyderabad – 500 001
Department of Computer Science and Engineering
VII SEM (A.Y- 22-23)

| Name of the Course/lab | UNIQUE CODE | COURSE OUTCOMES |
|---|-------------|--|
| INFORMATION SECURITY(PC701CS) | PC701CS.1 | Define the steps in Security Systems development life cycle(SecSDLC). Understand the common threats and attack to information systems. |
| | PC701CS.2 | Understand the legal and ethical issues of information technology Identify security needs using risk management and choose the appropriate risk control strategy based on business needs. |
| | PC701CS.3 | Use the basic knowledge of security frameworks in preparing security blue print for the organization . Usage of reactive solutions, network perimeter solution tools such as firewalls, host solutions such as antivirus software and Intrusion Detection techniques and knowledge of ethical hacking tools. |
| | PC701CS.4 | Understand and apply various cryptographic algorithms and to create their own algorithm. Use ethical hacking tools to study attack patterns and cryptography and secure communication protocols. |
| | PC701CS.5 | Understand the technical and non-technical aspects of security project implementation and accreditation. Design and prepare the industry recognized cyber security certifications and able to maintain the information security |
| DATA SCIENCE USING R PROGRAMMING(PC702 CS) | PC702CS.1 | Define the steps in Security Systems development life cycle(SecSDLC). Understand the common threats and attack to information systems. |
| | PC702CS.2 | Understand the legal and ethical issues of information technology Identify security needs using risk management and choose the appropriate risk control strategy based on business needs. |
| | PC702CS.3 | Use the basic knowledge of security frameworks in preparing security blue print for the organization . Usage of reactive solutions, network perimeter solution tools such as firewalls, host solutions such as antivirus software and Intrusion Detection techniques and knowledge of ethical hacking tools. |
| | PC702CS.4 | Understand and apply various cryptographic algorithms and to create their own algorithm. Use ethical hacking tools to study attack patterns and cryptography and secure communication protocols. |
| | PC702CS.5 | Understand the technical and non-technical aspects of security project implementation and accreditation. Design and prepare the industry recognized cyber security certifications and able to maintain the information security |

| | | |
|---|------------------|--|
| DISTRIBUTED SYSTEMS(PC703CS) | PC703CS.1 | List the principles of distributed systems and describe the problems and challenges associated with these principles |
| | PC703CS.2 | To know about interposes communication and remote communication. |
| | PC703CS.3 | Understand Distributed Computing techniques, Synchronous and Processes. |
| | PC703CS.4 | Understand Distributed File Systems Apply Distributed web-based system. Understand the importance of security in distributed systems |
| | PC703CS.5 | Student will be able to know distributed service oriented architecture and to know about emerging trends in distributed computing. |
| FUNDAMENTAL OF IOT(OE701EC) | OE701EC.1 | Understand the various applications of IOT and other enabling technologies |
| | OE701EC.2 | Comprehend various protocols and communication technologies used in IOT |
| | OE701EC.3 | Design simple IOT systems with requisite hardware and C programming software |
| | OE701EC.4 | Understand the relevance of cloud computing and data analytics to IOT |
| | OE701EC.5 | Comprehend the business model of IoT from developing a prototype to launching a product. |
| DATA SCIENCE LAB(PC751CS) | PC751CS.1 | Write programs that communicate data between two hosts |
| | PC751CS.2 | Configure NFS |
| | PC751CS.3 | To implement inter process communication and remote communication |
| | PC751CS.4 | Use distributed data processing frameworks and mobile application tool kits |
| DISTRIBUTED SYSTEMS LAB(PC752CS) | PC752CS.1 | Write programs that communicate data between two hosts |
| | PC752CS.2 | Configure NFS |
| | PC752CS.3 | To implement inter process communication and remote communication |

| | | |
|---------------------------------------|------------------|---|
| | PC752CS.4 | Use distributed data processing frameworks and mobile application tool kits |
| PROJECT WORK(PW7 61CS) | PW761CS.1 | Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems. |
| | PW761CS.2 | Evaluate different solutions based on economic and technical feasibility |
| | PW761CS.3 | Effectively plan a project and confidently perform all aspects of project management |
| | PW761CS.4 | Demonstrate effective written and oral communication skills |

Course Outcome Attainment

Name of the faculty: GHOUSIA BEGUM Academic Yr: 2022-23
Branch & Section: CSE-2 Exam: Internal
Subject: ENGINEERING Year: III I

Target % = 60%

| S.No | HT No. | Question No. | | | | | | AI |
|------------|--------------|--------------|-------|-------|-------|-------|------|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Min. Marks | | 2 | 2 | 2 | 7 | 7 | 7 | 5 |
| 1 | 160620733061 | 2 | 2 | 1 | | 1 | 6 | 5 |
| 2 | 160620733062 | 2 | 1 | 2 | 5.5 | 5 | 5 | 5 |
| 3 | 160620733063 | 2 | 2 | 2 | | 7 | 5.6 | 5 |
| 4 | 160620733064 | 2 | 2 | 2 | | | 6 | 5 |
| 5 | 160620733065 | 2 | 2 | 1 | | 1 | 5 | 5 |
| 6 | 160620733066 | 2 | 1 | 2 | | 7 | 4 | 5 |
| 7 | 160620733067 | 1.5 | 1.5 | 1.5 | | | 3.5 | 5 |
| 8 | 160620733068 | 2 | 1 | 1 | | 5 | 5 | 5 |
| 9 | 160620733069 | 2 | 2 | 0 | | 4 | 5 | 5 |
| 10 | 160620733070 | 2 | 2 | 2 | | 7 | 6 | 5 |
| 11 | 160620733071 | | | | 2 | 1 | 3 | 5 |
| 12 | 160620733072 | 1 | 0 | 2 | | 5 | 6 | 5 |
| 13 | 160620733073 | 2 | | 2 | | 4 | 5 | 5 |
| 14 | 160620733074 | 2 | 2 | 2 | | 7 | 5 | 5 |
| 15 | 160620733075 | 2 | 1 | 2 | | 2 | 5 | 5 |
| 16 | 160620733076 | 2 | 1 | 2 | | 6 | 4 | 5 |
| 17 | 160620733077 | | | | 2 | | 2 | 5 |
| 18 | 160620733078 | 2 | 2 | 2 | 4 | 4 | 4 | 5 |
| 19 | 160620733079 | 2 | 2 | 1 | | 6 | 6 | 5 |
| 20 | 160620733080 | | | | 2 | | 4 | 5 |
| 21 | 160620733081 | 2 | 2 | 2 | | 3 | 6 | 5 |
| 22 | 160620733082 | 1 | 1 | 1 | 6 | 6 | 5 | 5 |
| 23 | 160620733083 | 2 | 1 | 2 | | 6 | 2 | 5 |
| 24 | 160620733084 | 2 | | 2 | | 1 | 4 | 5 |
| 25 | 160620733085 | 0 | | | 2 | | 4 | 5 |
| 26 | 160620733086 | 2 | 2 | 2 | | 7 | 6 | 5 |
| 27 | 160620733087 | 2 | 1 | 2 | 3 | | 4 | 5 |
| 28 | 160620733088 | 0.5 | | | | | | 5 |
| 29 | 160620733089 | | | | 0 | | | 5 |
| 30 | 160620733090 | 2 | 2 | 2 | 5 | | 5 | 5 |
| 31 | 160620733091 | 2 | 0 | 1 | 4 | | | 5 |
| 32 | 160620733092 | 2 | 1 | 2 | | | 6 | 5 |
| 33 | 160620733093 | 2 | 2 | 2 | | 3 | 6 | 5 |
| 34 | 160620733094 | 2 | | 2 | 4 | | 4 | 5 |
| 35 | 160620733095 | 2 | 2 | 2 | 6 | | 5 | 5 |
| 36 | 160620733096 | 2 | 2 | 2 | | 7 | 7 | 5 |
| 37 | 160620733097 | 2 | 2 | 2 | | 7 | 5 | 5 |
| 38 | 160620733098 | 2 | | | | | 3.0 | 5 |
| 39 | 160620733099 | 2 | 2 | 2 | | 7 | 7 | 5 |
| 40 | 160620733100 | 2 | 2 | 2 | | 7 | 4 | 5 |
| 41 | 160620733101 | 2 | 2 | 2 | | 1 | 6 | 5 |
| 42 | 160620733102 | 2 | 2 | 2 | 6 | 4 | | 5 |
| 43 | 160620733103 | 2 | 2 | 2 | | 7 | 6 | 5 |
| 44 | 160620733104 | 1 | 1 | 2 | | 5 | 5 | 5 |
| 45 | 160620733105 | 2 | 2 | 1 | | 7 | 5 | 5 |
| 46 | 160620733106 | 2 | 1 | 2 | | 5 | 6 | 5 |
| 47 | 160620733107 | 2 | | 2 | 4 | | 3 | 5 |
| 48 | 160620733108 | 2 | 2 | 2 | 5.5 | 4 | | 5 |
| 49 | 160620733109 | 1 | 2 | 2 | 4.5 | 4 | | 5 |
| 50 | 160620733110 | 2 | 0 | 1 | 6.5 | 4 | | 5 |
| 51 | 160620733111 | 2 | 2 | 2 | 5 | | 4 | 5 |
| 52 | 160620733112 | 2 | 2 | 2 | | 4.5 | 5 | 5 |
| 53 | 160620733113 | 2 | 2 | 2 | 5 | | 5 | 5 |
| 54 | 160620733114 | 1 | | 1 | 1 | | 1 | 5 |
| 55 | 160620733115 | 2 | 0 | 2 | | 2.5 | 4 | 5 |
| 56 | 160620733116 | 2 | | 2 | 1 | | 4 | 5 |
| 57 | 160620733117 | 2 | 2 | 2 | 6 | | 5 | 5 |
| 58 | 160620733118 | 2 | 2 | 2 | | 0 | 6 | 5 |
| 59 | 160620733119 | 1 | 2 | 2 | 3 | | 5 | 5 |
| 60 | 160620733120 | 2 | 2 | 2 | | 6.5 | 7 | 5 |
| 61 | 160620733306 | 2 | 1 | 2 | 4 | | 4 | 5 |
| 62 | 160620733307 | 1 | | | 2.5 | | 4 | 5 |
| 63 | 160620733308 | 2 | | 2 | 3 | | 2 | 5 |
| 64 | 160620733309 | 2 | | 2 | 3 | | 3 | 5 |
| 65 | 160620733310 | 2 | 0 | 2 | 3.5 | | 4 | 5 |
| SUM | | 105 | 72 | 100 | 112 | 169 | 247 | 325 |
| COUNT | | 61 | 49 | 57 | 30 | 38 | 55 | 65 |
| AVERAGE | | 1.72131 | 1.469 | 1.754 | 3.733 | 4.447 | 4.49 | 5 |

| S.No | HT No. | Question No. | | | | | | AI |
|---------|--------------|--------------|-----|-----|-----|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 160620733061 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | 160620733062 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 160620733063 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4 | 160620733064 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5 | 160620733065 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6 | 160620733066 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7 | 160620733067 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 160620733068 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 160620733069 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | 160620733070 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11 | 160620733071 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12 | 160620733072 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13 | 160620733073 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14 | 160620733074 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 15 | 160620733075 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16 | 160620733076 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17 | 160620733077 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 18 | 160620733078 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 19 | 160620733079 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 20 | 160620733080 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21 | 160620733081 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 22 | 160620733082 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 23 | 160620733083 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 24 | 160620733084 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | 160620733085 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 26 | 160620733086 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 27 | 160620733087 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 28 | 160620733088 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 29 | 160620733089 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 30 | 160620733090 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 31 | 160620733091 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 32 | 160620733092 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 33 | 160620733093 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34 | 160620733094 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35 | 160620733095 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 36 | 160620733096 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 37 | 160620733097 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 38 | 160620733098 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 39 | 160620733099 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 40 | 160620733100 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 41 | 160620733101 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 42 | 160620733102 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 43 | 160620733103 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 44 | 160620733104 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 45 | 160620733105 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 46 | 160620733106 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 47 | 160620733107 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 48 | 160620733108 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 49 | 160620733109 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | 160620733110 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 51 | 160620733111 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 52 | 160620733112 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 53 | 160620733113 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 54 | 160620733114 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 55 | 160620733115 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 56 | 160620733116 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 57 | 160620733117 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 58 | 160620733118 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 59 | 160620733119 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 60 | 160620733120 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 61 | 160620733306 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 62 | 160620733307 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 63 | 160620733308 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 64 | 160620733309 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 65 | 160620733310 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SUM | | 52 | 32 | 44 | 12 | 21 | 32 | 59 |
| COUNT | | 61 | 49 | 57 | 30 | 38 | 55 | 65 |
| AVERAGE | | 85% | 65% | 77% | 40% | 55% | 58% | 91% |

CO Mapping with Exam Questions:

| CO | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 |
|------|----|----|----|----|----|----|----|
| CO-1 | Y | | | Y | | Y | Y |
| CO-2 | | Y | | | Y | Y | Y |
| CO-3 | | | Y | | | | Y |
| CO-4 | | | | | | | |
| CO-5 | | | | | | | |

| Students Scored >Target % | 52 | 32 | 44 | 12 | 21 | 32 | 59 |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|
| % Students Scored >Target % | 85% | 65% | 77% | 40% | 55% | 58% | 91% |

CO Attainment based on Exam Questions:

| CO | 85% | 65% | 77% | 40% | 55% | 58% | 91% |
|------|-----|-----|-----|-----|-----|-----|-----|
| CO-1 | 85% | | | | | | |

The Faculty:
I & Section:
Subject:

GHOSSIA HEGDUM
CSE-2

Academic Year: 2022-23
Exam: B Internal
Year: Sem I

Target % = 60%

| S.No | ID No. | Question No. | | | | | | A1 |
|---------|--------------|--------------|-------|----------|------------|------|--------|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Marks | | 3 | 3 | 2 | 7 | 1 | 7 | 5 |
| 1 | 160620733061 | 2 | 2 | 2 | 7 | | 6 | 5 |
| 2 | 160620733062 | 2 | 2 | 2 | 8 | | 5 | 5 |
| 3 | 160620733063 | 2 | 2 | 2 | 7 | | 4 | 5 |
| 4 | 160620733064 | 2 | 2 | 2 | 2 | 2 | | 5 |
| 5 | 160620733065 | 1 | 2 | 2 | 7 | | 6 | 5 |
| 6 | 160620733066 | 2 | 2 | 2 | 7 | | 2 | 5 |
| 7 | 160620733067 | 2 | 2 | 2 | 5 | | | 5 |
| 8 | 160620733068 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 9 | 160620733069 | 2 | 2 | 1 | | 2 | 4 | 5 |
| 10 | 160620733070 | 2 | 2 | 2 | 6 | | 6 | 5 |
| 11 | 160620733071 | | | | | 2 | 3 | 5 |
| 12 | 160620733072 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 13 | 160620733073 | 1 | 0 | 1 | 3 | | | 5 |
| 14 | 160620733074 | 2 | 2 | 2 | 7 | | 5 | 5 |
| 15 | 160620733075 | 1 | 2 | 1 | 6 | | 4 | 5 |
| 16 | 160620733076 | 2 | 2 | 2 | 7 | 1 | | 5 |
| 17 | 160620733077 | 2 | 2 | 2 | 4 | | 2 | 5 |
| 18 | 160620733078 | 2 | 2 | 2 | 5 | | 4 | 5 |
| 19 | 160620733079 | 2 | 2 | 2 | 6 | | 4 | 5 |
| 20 | 160620733080 | 2 | 2 | 2 | | | 3 | 5 |
| 21 | 160620733081 | 2 | 2 | 2 | 2 | | 3 | 5 |
| 22 | 160620733082 | 1 | 2 | 2 | 7 | | 6 | 5 |
| 23 | 160620733083 | 2 | 1 | 0 | 3 | | | 5 |
| 24 | 160620733084 | 2 | 2 | 0 | | | 3 | 5 |
| 25 | 160620733085 | 2 | 2 | 2 | | 2 | 3 | 5 |
| 26 | 160620733086 | 2 | 2 | 2 | 6 | 6 | | 5 |
| 27 | 160620733087 | 2 | 2 | 1 | 1 | | 2 | 5 |
| 28 | 160620733088 | 2 | | 2 | | | 5 | 5 |
| 29 | 160620733089 | 2 | 2 | | | | 3 | 5 |
| 30 | 160620733090 | 1 | 1 | 0 | 6 | | 5 | 5 |
| 31 | 160620733091 | 2 | 2 | 2 | | 1 | 3 | 5 |
| 32 | 160620733092 | 2 | 2 | 2 | | 1 | 3 | 5 |
| 33 | 160620733093 | 2 | 2 | 2 | 7 | 6 | | 5 |
| 34 | 160620733094 | 2 | 2 | 2 | 2 | | 5 | 5 |
| 35 | 160620733095 | 2 | 2 | 2 | 2 | | 6 | 5 |
| 36 | 160620733096 | 2 | 2 | 2 | 7 | 6 | | 5 |
| 37 | 160620733097 | 2 | 2 | 2 | 7 | 6 | | 5 |
| 38 | 160620733098 | 2 | 2 | 2 | 7 | | | 5 |
| 39 | 160620733099 | 2 | 2 | 2 | 7 | 5 | | 5 |
| 40 | 160620733100 | 2 | 2 | 2 | 6 | | 6 | 5 |
| 41 | 160620733101 | 2 | 2 | 2 | 5 | | 2 | 5 |
| 42 | 160620733102 | 2 | 2 | 2 | 1 | | 6 | 5 |
| 43 | 160620733103 | 2 | 2 | 2 | | 3 | 5 | 5 |
| 44 | 160620733104 | 2 | 2 | 2 | | 6 | 7 | 5 |
| 45 | 160620733105 | 2 | 2 | 2 | 6 | | 5 | 5 |
| 46 | 160620733106 | 1 | 2 | 2 | 5 | | 7 | 5 |
| 47 | 160620733107 | 0 | 2 | 2 | 4 | | 3 | 5 |
| 48 | 160620733108 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 49 | 160620733109 | 2 | 2 | 2 | 3 | | 5 | 5 |
| 50 | 160620733110 | 2 | 2 | 2 | 7 | | 6 | 5 |
| 51 | 160620733111 | 2 | 2 | 2 | | 4 | 7 | 5 |
| 52 | 160620733112 | 1 | 2 | 2 | 6 | | 7 | 5 |
| 53 | 160620733113 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 54 | 160620733114 | 1 | 0 | 1 | | 2 | 1 | 5 |
| 55 | 160620733115 | 2 | 2 | 0 | | 2 | 7 | 5 |
| 56 | 160620733116 | 2 | 2 | 2 | | 3 | 7 | 5 |
| 57 | 160620733117 | 2 | 2 | 2 | 6.5 | | 5 | 5 |
| 58 | 160620733118 | 2 | 2 | 0.5 | | 6 | 7 | 5 |
| 59 | 160620733119 | 2 | 2 | 0 | 4.5 | | 4 | 5 |
| 60 | 160620733120 | 2 | 2 | 2 | 6.5 | 6.5 | | 5 |
| 61 | 160620733306 | 2 | 2 | 2 | 3.5 | 1.5 | | 5 |
| 62 | 160620733307 | 1 | 1 | 0.5 | 5 | | 2 | 5 |
| 63 | 160620733308 | 1 | 2 | 2 | 3 | | 3 | 5 |
| 64 | 160620733309 | 2 | 1 | 2 | 4 | | 3 | 5 |
| 65 | 160620733310 | 2 | 2 | 0 | 6.5 | | 3 | 5 |
| SUM | | 108.5 | 111.0 | 102.5 | 247.0 | 77.0 | 221.5 | 325.0 |
| COUNT | | 64 | 63 | 63 | 49 | 22 | 51 | 65 |
| AVERAGE | | 1.6953 | 1.762 | 1.626984 | 5.04081633 | 3.5 | 4.3431 | 5 |

| S.No | ID No. | Question No. | | | | | | A1 |
|---------|--------------|--------------|-------|----------|------------|------|--------|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Marks | | 3 | 3 | 2 | 7 | 1 | 7 | 5 |
| 1 | 160620733061 | 2 | 2 | 2 | 7 | | 6 | 5 |
| 2 | 160620733062 | 2 | 2 | 2 | 8 | | 5 | 5 |
| 3 | 160620733063 | 2 | 2 | 2 | 7 | | 4 | 5 |
| 4 | 160620733064 | 2 | 2 | 2 | 2 | 2 | | 5 |
| 5 | 160620733065 | 1 | 2 | 2 | 7 | | 6 | 5 |
| 6 | 160620733066 | 2 | 2 | 2 | 7 | | 2 | 5 |
| 7 | 160620733067 | 2 | 2 | 2 | 5 | | | 5 |
| 8 | 160620733068 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 9 | 160620733069 | 2 | 2 | 1 | | 2 | 4 | 5 |
| 10 | 160620733070 | 2 | 2 | 2 | 6 | | 6 | 5 |
| 11 | 160620733071 | | | | | 2 | 3 | 5 |
| 12 | 160620733072 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 13 | 160620733073 | 1 | 0 | 1 | 3 | | | 5 |
| 14 | 160620733074 | 2 | 2 | 2 | 7 | | 5 | 5 |
| 15 | 160620733075 | 1 | 2 | 1 | 6 | | 4 | 5 |
| 16 | 160620733076 | 2 | 2 | 2 | 7 | 1 | | 5 |
| 17 | 160620733077 | 2 | 2 | 2 | 4 | | 2 | 5 |
| 18 | 160620733078 | 2 | 2 | 2 | 5 | | 4 | 5 |
| 19 | 160620733079 | 2 | 2 | 2 | 6 | | 4 | 5 |
| 20 | 160620733080 | 2 | 2 | 2 | | | 3 | 5 |
| 21 | 160620733081 | 2 | 2 | 2 | 2 | | 3 | 5 |
| 22 | 160620733082 | 1 | 2 | 2 | 7 | | 6 | 5 |
| 23 | 160620733083 | 2 | 1 | 0 | 3 | | | 5 |
| 24 | 160620733084 | 2 | 2 | 0 | | | 3 | 5 |
| 25 | 160620733085 | 2 | 2 | 2 | | 2 | 3 | 5 |
| 26 | 160620733086 | 2 | 2 | 2 | 6 | 6 | | 5 |
| 27 | 160620733087 | 2 | 2 | 1 | 1 | | 2 | 5 |
| 28 | 160620733088 | 2 | | 2 | | | 5 | 5 |
| 29 | 160620733089 | 2 | 2 | | | | 3 | 5 |
| 30 | 160620733090 | 1 | 1 | 0 | 6 | | 5 | 5 |
| 31 | 160620733091 | 2 | 2 | 2 | | 1 | 3 | 5 |
| 32 | 160620733092 | 2 | 2 | 2 | | 1 | 3 | 5 |
| 33 | 160620733093 | 2 | 2 | 2 | 7 | 6 | | 5 |
| 34 | 160620733094 | 2 | 2 | 2 | 2 | | 5 | 5 |
| 35 | 160620733095 | 2 | 2 | 2 | 2 | | 6 | 5 |
| 36 | 160620733096 | 2 | 2 | 2 | 7 | 6 | | 5 |
| 37 | 160620733097 | 2 | 2 | 2 | 7 | 6 | | 5 |
| 38 | 160620733098 | 2 | 2 | 2 | 7 | | | 5 |
| 39 | 160620733099 | 2 | 2 | 2 | 7 | 5 | | 5 |
| 40 | 160620733100 | 2 | 2 | 2 | 6 | | 6 | 5 |
| 41 | 160620733101 | 2 | 2 | 2 | 5 | | 2 | 5 |
| 42 | 160620733102 | 2 | 2 | 2 | 1 | | 6 | 5 |
| 43 | 160620733103 | 2 | 2 | 2 | | 3 | 5 | 5 |
| 44 | 160620733104 | 2 | 2 | 2 | | 6 | 7 | 5 |
| 45 | 160620733105 | 2 | 2 | 2 | 6 | | 5 | 5 |
| 46 | 160620733106 | 1 | 2 | 2 | 5 | | 7 | 5 |
| 47 | 160620733107 | 0 | 2 | 2 | 4 | | 3 | 5 |
| 48 | 160620733108 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 49 | 160620733109 | 2 | 2 | 2 | 3 | | 5 | 5 |
| 50 | 160620733110 | 2 | 2 | 2 | 7 | | 6 | 5 |
| 51 | 160620733111 | 2 | 2 | 2 | | 4 | 7 | 5 |
| 52 | 160620733112 | 1 | 2 | 2 | 6 | | 7 | 5 |
| 53 | 160620733113 | 2 | 2 | 2 | 7 | | 7 | 5 |
| 54 | 160620733114 | 1 | 0 | 1 | | 2 | 1 | 5 |
| 55 | 160620733115 | 2 | 2 | 0 | | 2 | 7 | 5 |
| 56 | 160620733116 | 2 | 2 | 2 | | 3 | 7 | 5 |
| 57 | 160620733117 | 2 | 2 | 2 | 6.5 | | 5 | 5 |
| 58 | 160620733118 | 2 | 2 | 0.5 | | 6 | 7 | 5 |
| 59 | 160620733119 | 2 | 2 | 0 | 4.5 | | 4 | 5 |
| 60 | 160620733120 | 2 | 2 | 2 | 6.5 | 6.5 | | 5 |
| 61 | 160620733306 | 2 | 2 | 2 | 3.5 | 1.5 | | 5 |
| 62 | 160620733307 | 1 | 1 | 0.5 | 5 | | 2 | 5 |
| 63 | 160620733308 | 1 | 2 | 2 | 3 | | 3 | 5 |
| 64 | 160620733309 | 2 | 1 | 2 | 4 | | 3 | 5 |
| 65 | 160620733310 | 2 | 2 | 0 | 6.5 | | 3 | 5 |
| SUM | | 108.5 | 111.0 | 102.5 | 247.0 | 77.0 | 221.5 | 325.0 |
| COUNT | | 64 | 63 | 63 | 49 | 22 | 51 | 65 |
| AVERAGE | | 1.6953 | 1.762 | 1.626984 | 5.04081633 | 3.5 | 4.3431 | 5 |

4th Exam Questions:

| CO - 1 | CO - 2 | CO - 3 | CO - 4 | CO - 5 |
|--------|--------|--------|--------|--------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Students Scored > Target % | 51 | 55 | 48 | 31 | 9 | 27 | 61 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|
| % Students Scored > Target % | 80% | 87% | 76% | 67% | 41% | 53% | 94% |

5th Exam Questions:

| CO - 1 | CO - 2 | CO - 3 | CO - 4 | CO - 5 |
|--------|--------|--------|--------|--------|
| | | | | |
| | | | | |

STANLEY COLLEGE OF ENGINEERING & TECHNC

Department of Computer Science & Engineering

Course Outcome Attainment

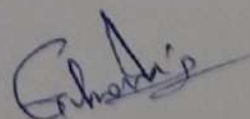
Name of the faculty : GHOUSIA BEGUM Academic Year: 2021-22
Branch & Section: CSE-1 Year: III
Subject: SOFTWARE ENGINEERING Semester: V

| Course Outcome | 1st Internal Exam | 2nd Internal Exam | Internal Exam | University Exam |
|----------------|-------------------|-------------------|---------------|-----------------|
| CO1 | 3 | | 3 | 2 |
| CO2 | 3 | | 3 | 2 |
| CO3 | 3 | 3 | 3 | 2 |
| CO4 | | 3 | 3 | 2 |
| CO5 | | 3 | 3 | 2 |

Attainment level of Course Outcomes

| | Course Outcomes | Attainment Level |
|-----|--|------------------|
| CO1 | Acquired working knowledge of alternative approaches and techniques for each phase of software development | 2 |
| CO2 | Judge an appropriate process model(s) assessing software project attributes and analyze necessary requirements for | 2 |
| CO3 | Acquire skills necessary as an independent or as part of a team for | 2 |
| CO4 | Judge an appropriate process model(s) assessing software project attributes and analyze necessary requirements for | 2 |
| CO5 | employing appropriate metrics by understanding the practical challenges associated with the development of a | 2 |

Average **Overall course attainment level** 2



Faculty Signature

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOM
Department of Computer Science & Engineering

Program Outcome Attainment

Name of Faculty: **GHOUSIA BEGUM** Academic Year: 2022-2023
 Branch & Section: **CSE-2** Year: III Semester: V

SOFTWARE ENGINEERING

Course Name:

Course outcome attainment

| CO | Ist Mid | IIInd Mid | Int | Univ |
|-----|------------|--------------|-----|------|
| CO1 | 3 | | 3 | 2 |
| CO2 | 3 | | 3 | 2 |
| CO3 | 3 | 3 | 3 | 2 |
| CO4 | | 3 | 3 | 2 |
| CO5 | | 3 | 3 | 2 |

CO-PO mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | 2 | | | 2 | | | 1 | 2 | 1 | 2 | 2 | 1 |
| CO2 | 2 | 2 | 2 | 2 | | 1 | | 2 | 1 | 1 | 1 | 2 | 1 | 2 |
| CO3 | 2 | 2 | 1 | 2 | | 2 | | | 2 | 2 | 1 | 2 | 1 | 1 |
| CO4 | 2 | 2 | 1 | 2 | | 2 | | | 2 | 2 | 1 | 2 | 1 | 1 |
| CO5 | 2 | 1 | 1 | 1 | | 1 | | | 2 | 1 | 2 | 1 | 1 | 2 |

PO-ATTAINMENT

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|-------------------|----------|----------|----------|----------|-----|----------|-----|----------|----------|----------|----------|----------|----------|----------|
| INTERNAL | CO1 | 6 | 6 | 6 | | 6 | | | 3 | 6 | 3 | 6 | 6 | 3 |
| | CO2 | 6 | 6 | 6 | 6 | 3 | | 6 | 3 | 3 | 3 | 6 | 3 | 6 |
| | CO3 | 6 | 6 | 3 | 6 | 6 | | | 6 | 6 | 3 | 6 | 3 | 3 |
| | CO4 | 6 | 6 | 3 | 6 | 6 | | | 6 | 6 | 3 | 6 | 3 | 3 |
| | CO5 | 6 | 3 | 3 | 3 | 3 | 3 | | | 6 | 3 | 6 | 3 | 3 |
| UNIVERSITY | CO1 | 4 | 4 | 4 | | 4 | | | 2 | 4 | 2 | 4 | 4 | 2 |
| | CO2 | 4 | 4 | 4 | 4 | 2 | | 4 | 2 | 2 | 2 | 4 | 2 | 4 |
| | CO3 | 4 | 4 | 2 | 4 | 4 | | | 4 | 4 | 2 | 4 | 2 | 2 |
| | CO4 | 4 | 4 | 2 | 4 | 4 | | | 4 | 4 | 2 | 4 | 2 | 2 |
| | CO5 | 4 | 2 | 2 | 2 | 2 | 2 | | | 4 | 2 | 4 | 2 | 2 |
| OVERALL | CO1 | 2 | 2 | 2 | | 2 | | | 2 | 2 | 2 | 2 | 2 | 2 |
| | CO2 | 2 | 2 | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | CO3 | 2 | 2 | 2 | 2 | 2 | | | 2 | 2 | 2 | 2 | 2 | 2 |
| | CO4 | 2 | 2 | 2 | 2 | 2 | | | 2 | 2 | 2 | 2 | 2 | 2 |
| | CO5 | 2 | 2 | 2 | 2 | 2 | 2 | | | 2 | 2 | 2 | 2 | 2 |
| Attainment | 2 | 2 | 2 | 2 | | 2 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

Faculty **GHOUSIA BEGUM**

Head of the Department CSE

Stanley College of Engineering & Technology for Women
Chapel Road, Hyderabad

B.E IV SEM (A,B,C) I-Mid Examination, 6th May 2022

OPERATING SYSTEM SET-1

[Time: 1 Hour]

[Max. Marks: 20]

[Time: 9.30 -10.30AM]

- Note: 1) Answer all questions of Part-A**
2) Answer any two questions from Part-B
PART – A (6 Marks)

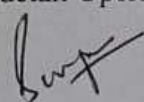
- 1 Explain layered structure of operating system. (2)
- 2 Define and draw the Process Control Block (PCB)? (2)
- 3 Define Context Switching? (2)

PART – B (14 Marks)

- 4 What is Operating System? List the services that an Operating System provides to its users? (7)
- 5 Draw the Gant Chart For FCFS and SJF, priority scheduling algorithm and calculate Waiting Time, Turn Around Time, Average Waiting Time and Average Turn Around Time for the given problem (7)

| Process | Burst time |
|---------|------------|
| P1 | 10 |
| P2 | 3 |
| P3 | 1 |
| P4 | 5 |
| P5 | 7 |

- 6 Explain in detail Operating system Types? (7)


Paper Set by: Dr. M.Swapna, Mrs.Shivani Yadao

CO Mapping

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 |
|---------------------|--------------------|--------------------|---------------------|------------------|--------------------|
| CO1 (Understand) | CO2 (Knowledge) | CO2 (Knowledge) | CO1 (Understand) | CO2 (Analyze) | CO1 (Knowledge) |

PEOs ,POs and PSOs of IT Dept

Program Educational Objectives (PEOs)

PEO1: Graduates shall have enhanced skills and contemporary knowledge to adapt new software and hardware technologies for professional excellence, employment and Research.

PEO2: Proficient in analyzing, developing, solving engineering problems to assist life-long learning and to develop team work.

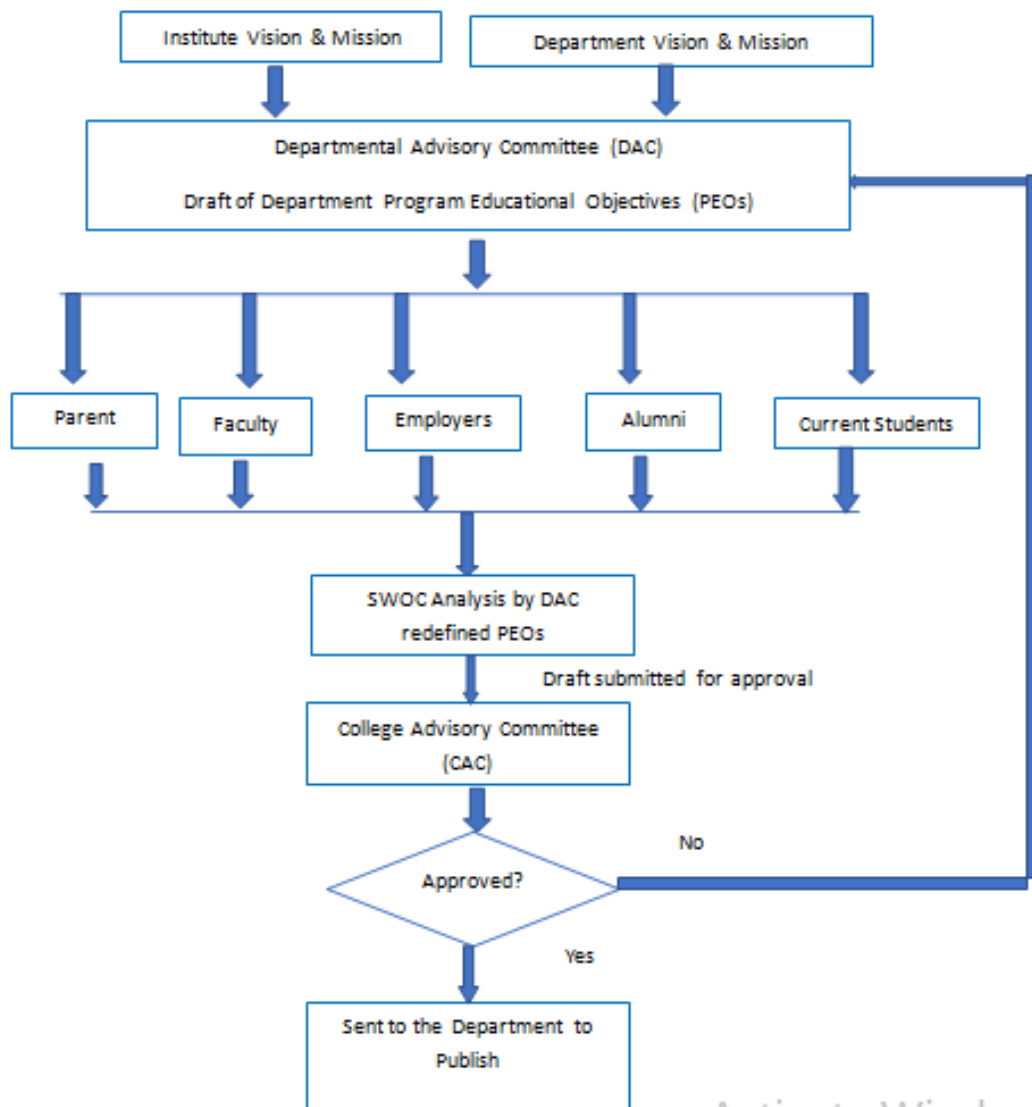
PEO3: To inculcate self-confidence, acquire professional and ethical attitude, infuse leadership qualities, impart proficiency in soft-skills and the ability to relate engineering with social issues.

Programme Outcomes:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics and natural sciences and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment & sustainability:** Understand the impact of professional engineering solutions in societal and environmental context, and demonstrate knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes:

1. **PSO1:** Acquire skills to design, analyze and implement algorithms using high-level programming languages.
2. **PSO2:** Contribute their engineering skills in information technology domains like operating systems, network design and web designing, database design, information security and cloud computing.
3. **PSO3:** An ability to design and implement knowledge-based discovery and machine learning by using the various concepts of mathematical models, digital system design, neural networks, internet of things.



Activate Windows

Flow Chart of process for defining PEO's of the IT - department

1. **PSO1:** Acquire skills to design, analyze and implement algorithms using high-level programming languages.
2. **PSO2:** Contribute their engineering skills in information technology domains like operating systems, network design and web designing, database design, information security and cloud computing.
3. **PSO3:** An ability to design and implement knowledge-based discovery and machine learning by oncepts of mathematical models, digital system design, neural networks, internet of things

COURSE INFORMATION SHEET

| | | |
|---|---|---------------------|
| COURSE NAME: VLSI DESIGN | COURSE CODE: PC 701 IT A.Y:2022-23 | REGULATION: 2018-19 |
| PROGRAM / YEAR / SEMESTER:BE/IV/VII | CREDITS: 4 | |
| COURSE TYPE: INTER-DISCIPLINARY | | |
| COURSE AREA/DOMAIN: VLSI | CONTACT HOURS: 3+1 (Tutorial) hours/Week. | |
| CORRESPONDING LAB COURSE NAME, CODE (IF ANY): VLSI DESIGN Lab PC 751 IT | | |
| PRE-REQUISITE COURSES/SEM/CODE (IF ANY) :MICRO ELECTRONICS (BIT202) | | |

SYLLABUS:

| UNIT | DETAILS | HOURS (LECTURE) | HOURS (TUTORIAL) |
|------|---|--------------------|---------------------|
| I | Moore's law ,VLSI Design Hierarchy, MOSFET as switches, pass characteristics, Basic logic gates and complex logic gates using CMOS, Bubble pushing, XOR and XNOR gates, AOI and OAI logic gates, Transmission gates-TG based 2-to-1 MUX, XOR, XNOR circuits. | | 2 |
| | Electrical Characteristics of MOSFETs, Threshold voltage, nFET Current-Voltage equations, trans-conductance and drain characteristics of nFET, RC model of a FET, MOS capacitances, gate-source and gate- drain capacitances, junction capacitances in a MOSFET, scaling concept of MOSFETs | 8 | |
| II | Integrated Circuit definition and layers, Top and side view of IC layers, CMOS Layers-MOSFET layers in an n-well process. Silicon patterning for series and parallel connected FETs. Layouts of NOT gate, transmission gate, non-inverting buffer, NAND2, NOR2, Complex logic gate, 4 input AOI gate. Stick diagram representation of NOT, NAND2 and NOR2 . | 9 | 1 |
| | Fabrication of CMOS ICs, CMOS process flow, Design rules: minimum space width, minimum spacing, surround, extension | | |
| III | Layouts of Basic Structure: nwells, active area definition, design of n ⁺ , p ⁺ regions, masks for the nFET, pFET,active contact cross section and mask set, metall1 line with active contact, poly contact: cross section and layout,. Latchup and its prevention. | | 2 |
| | DC characteristics of the CMOS inverter , Expression for midpoint voltage of CMOS inverter, Symmetrical inverter, Inverter switching characteristics, fan-out, input capacitance and loading due to fan-out, RC switch model equivalent for the CMOS inverter, rise time and fall time expressions, propagation delay of CMOS inverter. | 10 | |
| IV | Pseudo nMOS logic gates, tri-state inverter circuit, Clocked CMOS circuit, charge leakage in C ² MOS circuit, Dynamic CMOS logic circuits : pre-charge and evaluation modes of operation, Domino logic, Dual rail logic networks- Differential Cascade Voltage Switch Logic (DCVSL) AND/NAND, OR/NOR gates, Complementary Pass Transistor Logic (CPL) structures. | 9 | 1 |
| | SRAM – General SRAM cell, 4T & 6T SRAM cell design parameters, Writing to SRAM, resistor model, SRAM arrays. Dynamic RAMs: 1T DRAM cell, charge leakage and refresh in a DRAM cell | | |
| V | VLSI Design flow, structural gate level modeling, gate primitives, gate delays, switch level modeling, behavioral and RTL operators, timing controls, blocking and non blocking assignments, conditional statements, Data flow modeling and RTL, Comparator and priority encoder , D latch and Master-Slave D flip-flop- verilog code. Arithmetic circuits: half adder, full adder, ripple carry adder, carry look ahead adder- verilog code. | 9 | 1 |
| | Interconnect modeling; Interconnect resistance and capacitance ,sheet resistance R _s , time delay, single and multiple rung ladder circuits, simple RC inter connect model, modeling inter connect lines with a series pass FET, Crosstalk, Floor planning and routing. | 45 | 7 |

TEXT/REFERENCE/ADDITIONAL BOOKS:

| T/R | BOOK TITLE/AUTHORS/PUBLISHER |
|-----|---|
| T1 | John P. Uyemura, "Introduction to VLSI circuits and Systems", John Wiley & Sons, 2002 |
| T2 | John P. Uyemura, "Chip design for submicron VLSI: CMOS layout and simulation" IE, Cengage learning, 2006. |
| R1 | Douglas A. Pucknell, Kamran Eshraghian, "Basic VLSI Design" 3 rd Edition, PHI, 2000. |
| R2 | Jan M. Rabey and others "Digital Integrated Circuits A design perspective", Pearson Education |

WEB SOURCE REFERENCES: (Detailed Topic link)

| | |
|----|--|
| W1 | nptel.ac.in/downloads/106108101/ |
| W2 | engineeringppt.blogspot.com/.../vlsi-concepts-8th-edition.h... |

COURSE OUTCOMES:

| SNO | DESCRIPTION | PO(1..12) MAPPING | PSO(1..3) MAPPING |
|-------------|--|----------------------|----------------------|
| PC 701 IT.1 | Explain VLSI Design hierarchy and analyse logic gates using CMOS & transmission gate structures. (BLT 2) | PO1,PO2,PO3,PO4,PO12 | PSO1,PSO2 |
| PC 701 IT.2 | Identify the layers in the physical structure of ICs and draw the layouts of CMOS logic gates (BLT 2,4) | PO1,PO2,PO3,PO4 | PSO1,PSO2 |
| PC 701 IT.3 | Summarize the fabrication process of CMOS ICs and analyse the DC, switching characteristics of CMOS inverter. (BLT 2,4) | PO1,PO2,PO3,PO4 | PSO1,PSO2 |
| PC 701 IT.4 | Analyse dynamic CMOS & pseudo nMOS structures of logic gates, SRAM & DRAM cells (BLT 4) | PO2,PO3,PO4,PO12 | PSO1,PSO2 |
| PC 701 IT.5 | Develop Verilog code for logic gates, examine the effects of interconnect elements in logic cascades and Explain the floor-planning , routing techniques of VLSI circuits(BLT 6) | PO1,PO2,PO3,PO4,PO5 | PSO1,PSO2 |

COURSE OUTCOMES VS POs MAPPING (DETAILED; HIGH:3; MEDIUM:2; LOW:1):

| SNO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| PC 701 IT.1 | 3 | 3 | 2 | 2 | | | | | | | | 3 | 2 | 3 |
| PC 701 IT.2 | 2 | 3 | 3 | 3 | | | | | | | | | 2 | 3 |
| PC 701 IT.3 | 3 | 3 | 3 | 2 | | | | | | | | | 2 | 2 |
| PC 701 IT.4 | | 2 | 3 | 1 | | | | | | | | 3 | 2 | 3 |
| PC 701 IT.5 | 3 | 3 | 3 | 2 | 3 | | | | | | | | 2 | 2 |
| PC 701 IT | 3 | 2.8 | 2.8 | 2.2 | 3 | 3 | | | | | | 3 | 2 | 2.5 |

* For Entire Course, PO & PSO Mapping

Note: Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

If there is no correlation, put “-”

POs & PSO REFERENCE:

| | | | | | |
|------------|------------------------------|------------|-------------------------------|-------------|-----------------------------------|
| PO1 | Engineering Knowledge | PO6 | Engineer & Society | PO11 | Project Mgt. & Finance |
| PO2 | Problem Analysis | PO7 | Environment & Sustainability | PO12 | Life Long Learning |
| PO3 | Design & Development | PO8 | Ethics | PSO1 | |
| PO4 | Investigations | PO9 | Individual & Team Work | PSO2 | |
| PO5 | Modern Tools | PO10 | Communication Skills | PSO3 | |

GAPS IN THE SYLLABUS - TO MEET COs, POs & PSOs:

| SNO | GAP | PROPOSED ACTIONS | PROPOSED RESOURCE | CO | PO / PSO |
|-----|---|------------------|-------------------|----------------|-----------------|
| 1 | Differences b/w BJT and MOSFET, MOSFET advantages over BJT in fabrication | Lecture | Internal | PC 701 IT.1 | PO1, PSO1, PSO2 |
| 2 | Modelsim software | Free tutorial | Laboratory | PC 701 IT.5 | PO5, PSO1, PSO2 |

TOPICS BEYOND SYLLABUS: Additional course material / learning material / Lab Experiments / Projects

| S.No | Description | CO | PO / PSO |
|------|-----------------------------|----------------|-----------------|
| 1 | NMOS& PMOS Fabrication flow | PC 701 IT.3 | PO3, PSO1, PSO2 |

Web Link of the Course Material: [googlemeet,stanleylms.swecha.org](https://meet.google.com/stanleylms.swecha.org)

Innovation / Pedagogical Initiatives to cater Weak & Advanced Learners: __

INSTRUCTIONAL METHODOLOGIES:

| | | | | | | | |
|-------------------------------------|---------------------|--------------------------|------------------------|--------------------------|-------------------------|--------------------------|-----------------------|
| <input checked="" type="checkbox"/> | REAL WORLD EXAMPLES | <input type="checkbox"/> | COLLABORATIVE LEARNING | <input type="checkbox"/> | QUALITY LAB EXPERIMENTS | <input type="checkbox"/> | OBSERVATIONS RECORDED |
| <input type="checkbox"/> | INDUSTRY INTERNSHIP | <input type="checkbox"/> | SUMMER TRAINING | <input type="checkbox"/> | EXPERT GUEST LECTURES | <input type="checkbox"/> | PROJECTS |
| <input checked="" type="checkbox"/> | USE OF ICT | <input type="checkbox"/> | ANY OTHER (SPECIFY) | | | | |

ASSESSMENT METHODOLOGIES-DIRECT

| | | | | | | | |
|-------------------------------------|----------------------------|-------------------------------------|---------------------|-------------------------------------|-------------|--------------------------|-----------------------|
| <input checked="" type="checkbox"/> | EXAM QUESTIONS | <input checked="" type="checkbox"/> | TUTORIAL QUESTIONS | <input checked="" type="checkbox"/> | ASSIGNMENTS | <input type="checkbox"/> | LABORATORY TESTS |
| <input type="checkbox"/> | PROJECT EVALUATION | <input type="checkbox"/> | STUDENT ARTIFACTS | <input type="checkbox"/> | ORAL EXAMS | <input type="checkbox"/> | PROJECT PRESENTATIONS |
| <input checked="" type="checkbox"/> | INTERNALLY DEVELOPED EXAMS | <input type="checkbox"/> | ANY OTHER (SPECIFY) | | | | |

ASSESSMENT METHODOLOGIES-INDIRECT

| | | | | | |
|-------------------------------------|---------------------|--------------------------|--------------------------|--------------------------|-----------------------------|
| <input checked="" type="checkbox"/> | STUDENT EXIT SURVEY | <input type="checkbox"/> | CO-CURRICULAR ACTIVITIES | <input type="checkbox"/> | EXTRA CURRICULAR ACTIVITIES |
|-------------------------------------|---------------------|--------------------------|--------------------------|--------------------------|-----------------------------|

Prepared by

HOD

Ruqia Alam

Mrs. Ruquia Alam
Assitant Professor ,IT

2.6 Students Performance and Learning Outcomes

2.6.1 - Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students.

I&II SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|--|-----------------|--|
| PROGRAMMING FOR PROBLEM SOLVING | SES101CS | <p>SES101CS.1 Describe the concept of computer system, analyze a given problem, develop an algorithm, fundamental programming constructs, identify data representation formats, and describe operators and their precedence, associativity</p> <p>SES101CS.2 Understand branching and loop statements.</p> <p>SES101CS.3 Describe the concept of homogeneous derives data types, strings and functions.</p> <p>SES101CS.3 Describe the concept of homogeneous derives data types, strings and functions.</p> <p>SES101CS.4 Understand pointers and heterogeneous data types</p> <p>SES101CS.5 Describe the concept of file system</p> |
| PROGRAMMING FOR PROBLEM SOLVING LAB | SES111CS | <p>SES111CS.1 Understand the concept of basics of C, data types and variables.</p> <p>SES111CS.2 Understand the concept of operators, precedence of operators, conditional statements and looping statements.</p> <p>SES111CS.3 Explore the concept of strings, functions, recursive functions and differences between call by value and call by reference</p> <p>SES111CS.4 Explore the concept of storage classes, preprocessor directives, pointers and files.</p> <p>SES111CS.5 Understand the concept of file handling functions, searching and sorting methods and real time applications of C.</p> |
| DATA STRUCTURES USING C | SES202IT | <p>SES202IT .1 Able to analyze the algorithms and express algorithm complexity using Asymptotic Notations, select appropriate searching and sorting technique for given problem.</p> <p>SES202IT.2 Implement standard searching and sorting algorithms; including binary search; merge sort and quick sort; and their complexities</p> <p>SES202IT.3 Design and implement linked lists, stacks and queues in C</p> <p>SES202IT.4 Design and implement tree structures in C [Apply]</p> <p>SES202IT.5 Understand the extended data structures to solve problems involving balanced binary search trees, AVL Trees, B-trees and B+ trees, hashing, and basic graphs</p> |
| DATA STRUCTURES USING C LAB | SES212IT | <p>SES212IT.1 Understand various data representation techniques in the real world.</p> <p>SES212IT.2 Implement linear and non-linear data structures.</p> <p>SES212IT.3 Analyze various algorithms based on their time and space complexity.</p> |

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| | | <p>SES212IT.4 Develop real-time applications using suitable data structure.</p> <p>SES212IT.5 Identify suitable data structure to solve various computing problems.</p> |
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III SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|-------------------------------------|-------------------|---|
| PROBABILITY & STATISTICS | SBS301MT | <p>SBS301MT.1 Apply probability theory to solve practical problems.</p> <p>SBS301MT 2. Apply various probability distributions to solve practical problems, to estimate unknown parameters and apply tests of hypothesis.</p> <p>SBS301MT 3. Perform a regression analysis and to compute and interpret the coefficient of correlation , Chi-square test for goodness o'f fit and independent attributes</p> <p>SBS301MT 4. To determine the numerical solutions of Ordinary differential equations.</p> <p>SBS301MT 5. To determine if a set of vector space is a vector space, Subspace or a basis</p> |
| DISCRETE MATHEMATICS | SES202IT | <p>ES303EC.1 Understand sets, functions, groups and relations</p> <p>ES303EC.2 Apply permutation and combination to handle different types of problems.</p> <p>ES303EC.3 Apply propositional logic and predicate logic to solve logical statements.</p> <p>ES303EC.4 Evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra</p> <p>ES303EC.5 Develop the given problem as graph networks and solve with techniques of graph theory.</p> |
| DATABASE MANAGEMENT SYSTEMS | PC302IT | <p>PC302IT.1 Understand the role of database management system in an organization and learn the database concepts.</p> <p>PC302IT.2 Construct database queries using relational algebra and SQL</p> <p>PC302IT.3 Design databases using data modeling and Logical database design techniques</p> <p>PC302IT.4 Evaluating the indexing, hashing techniques and transaction management.</p> <p>PC302IT.5 Understand the concept of a database transaction and related concurrent, recovery facilities.</p> |
| OOPS USING JAVA | SPC 301 IT | <p>SPC301IT.1 Identify classes, objects, members of a class and the relationships needed to solve a Problem</p> <p>SPC301IT.2 Use interfaces and creating user-defined packages</p> <p>SPC301IT.3 Utilize exception handling and Multithreading concepts to develop Java programs.</p> |

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| | | <p>SPC301IT.4 Compose programs using the Java Collection API</p> <p>SPC301IT.5 Design a GUI using GUI components with the integration of event handling.</p> |
| DIGITAL ELECTRONICS | SE302EC | <p>SES302EC.1 Understand the design process of digital hardware, use Boolean algebra to minimize the logical expressions and optimize the implementation of logical functions (BLT 3)</p> <p>SES302EC.2 Understand the number representation and design combinational circuits like adders, MUX (BLT 3)</p> <p>SES302EC.3 Design combinational logic circuits using PLDs (BLT 5)</p> <p>SES302EC.4 Analyze sequential circuits using flip-flops and design registers, counters (BLT 2)</p> <p>SES302EC.5 Represent a sequential circuit using finite state machine and apply state minimization techniques to design FSM (BLT 5)</p> |
| ELECTRICAL TECHNOLOGY | SAC903EE | <p>SAC903EE.1 Gain knowledge of construction and operation of conventional and nonconventional sources</p> <p>SAC903EE.2 Understand the working principle of single phase and three phase transformers</p> <p>SAC903EE.3 Understand the Working principle of generator and motor</p> <p>SAC903EE.4 Know the working of inverter and rectifier operation</p> <p>SAC903EE.5 Understand the concept of Electrical vehicles</p> |
| OOPS USING JAVA LAB | SPC311 IT | <p>SPC311IT.1 Understand object-oriented programming fundamental and java programming fundamentals such as classes, inheritance, abstract classes, interfaces, packages.</p> <p>SPC311IT.2 Apply exception handling, multithreading, input output basics and string handling.</p> <p>SPC311 IT.3 Design and apply collection framework.</p> <p>SPC311 IT.4 Design AWT and Swings concept.</p> <p>SPC311 IT.5 Apply input-output operations through IO package.</p> |
| DATABASE MNAAGEMENT SYSTEM LAB | SPC 312IT | <p>PC 312 IT.1 Implement the basic knowledge of SQL queries and relational databases.</p> <p>PC312IT.2 Design and implement a database schema for a given problem.</p> <p>PC312IT.3 Implement different constraints for refining of the databases.</p> <p>PC 312 IT.4 Implement various triggers, procedures and cursors using PL/SQL.</p> <p>PC 312 IT.5 Generate forms and reports.</p> |

V SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|--|--|---|
| <p align="center">OPERATING SYSTEMS</p> | <p align="center">PC 502 IT</p> | <p>PC502IT.1 Explain the fundamental concepts and functions of operating system.</p> <p>PC502IT.2 Understand process scheduling in a multi-programming environment and implementing process scheduling algorithms</p> <p>PC502IT.3 Write application and system calls related programs for managing processes, memory, I/O and inter-process Communication related system calls.</p> <p>PC502IT.4 Understand memory management, disk management techniques, including virtual memory and file system structure.</p> <p>PC502IT.5 Explain protection and security related issues of the computer system.</p> |
| <p align="center">ARTIFICIAL INTELLIGENCE</p> | <p align="center">PE 511 IT</p> | <p>PE511IT.1 Learn the fundamentals of AI. Gain Insights Characteristics of Problem with illustrations.</p> <p>PE511IT.2 Apply problem solving through search for AI applications</p> <p>PE511IT.3 Understand principles of knowledge representation basics and advanced methods like frames and semantic web.</p> <p>PE511IT.4 Understand the use and applications of expert systems and Apply probability theory to draw conclusions using Naïve Bayes and Bayesian networks.</p> <p>PE511IT.5 Understand the need of machine learning and fuzzy logic</p> |
| <p align="center">SOFTWARE ENGINEERING</p> | <p align="center">PC505IT</p> | <p>PC505IT.1 Define different software development processes and their usability in different problem domains</p> <p>PC505IT.2 Explain the process of requirements collection, analyzing, and modelling requirements for effective understanding and communication with stakeholders</p> <p>PC505IT.3 Design and Develop the architecture of real world problems towards developing a blueprint for implementation</p> <p>PC505IT.4 To understand the importance of testing in software development and study various testing strategies and software quality metrics</p> <p>PC505IT .5 Discuss the concepts related to Risk</p> |

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| | | management and Software project Estimation |
| OBJECTORIENTEDAN ALYSISANDDESIGN | PE511IT | <p>PE511IT.1 Understand the activities in the different phases of the object-oriented development lifecycle.</p> <p>PE511IT.2 Model a real-world application by using a UML diagram.</p> <p>PE511IT.3 Provide a snapshot of the detailed state of a system at a point in time using object diagram.</p> <p>PE511IT.4 Recognize when to use generalization, aggregation, and composition relationships. Specify different types of business rules in a class diagram.</p> |
| COMPUTER NETWORKS | PC504IT | <p>PC504IT .1 Student can able to explain the function of each layer of OSI and trace the flow of information (Understand)</p> <p>PC504IT.2 Node to another node in the network routing (Understand)</p> <p>PC504IT.3 Understand the principles of IP addressing and internet routing (Understand)</p> <p>PC504IT.4 Describe the working of various networked applications such as DNS, mail, file transfer and www (Remember)</p> <p>PC504IT .5 Implement client-server socket-based networked applications (Apply)</p> |
| AUTOMATA THEORY | PC501IT | <p>PC501IT.1 Design and use deterministic, nondeterministic, and epsilon transition finite state automata and illustrate state transition on symbols of input words and establish the corresponding language of automata</p> <p>PC501IT.2 Analyze Regular Expressions and use Laws and establish the corresponding Regular Language. Prove a given language is regular or otherwise. Use Closure and Decision Properties of Regular Language</p> <p>PC501IT.3 Analyze ambiguity. Develop Context Free Grammars, Parse Trees and establish Context Free Language. Use Closure and Decision Properties of Regular Language</p> <p>PC501IT.4 Design Pushdown Automata and illustrate the working.</p> <p>PC501IT.5 Develop deterministic Pushdown Automata and establish equivalence of language of PDA and CFG</p> <p>PC501IT.6 Design Turing Machine and illustrate its working, implement programming techniques for Turing Machines, analyze extended and restricted Turing Machines for computational abilities, and establish the Recursively Enumerable language of Turing Machine and analyze the Undecidable</p> |

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| | | problems |
| WEB APPLICATION DEVELOPMENT LAB | PC533IT | <p>PC533IT.1 Design Web pages and perform form validation using HTML 5.0 inbuilt</p> <p>PC533IT.2 Apply Styles to the web content using CSS</p> <p>PC533IT.3 Create and process web publishing content using XML and JSON.</p> <p>PC533IT.4 Use JQuery to perform client side Dynamics.</p> <p>PC533IT.5 Create single page applications (Front End) using Angular JS.</p> <p>PC533IT.6 Design Big data applications using Mean stack or SMACK stack Frameworks</p> |
| ARTIFICIAL INTELLIGENCE LAB | PC552IT | <p>PC552IT.1 Design and develop solutions for informed and uninformed search problems in AI.</p> <p>PC552IT.2 Demonstrate reasoning in first order logic using Prolog</p> <p>PC552IT.3 Utilize advanced package like NLTK for implementing natural language processing.</p> <p>PC552IT.4 Demonstrate and enrich knowledge to select and apply python libraries to synthesize information and develop supervised learning models</p> <p>PC552IT.5 Develop a case study in multidisciplinary areas to demonstrate use of AI.</p> |
| COMPUTER NETWORKS & OPERATING SYSTEMS LAB | PC531IT | <p>PC531IT.1 Understand the usage of basic commands ipconfig, ifconfig, netstat, ping, arp, telnet, ftp, finger, traceroute, whois of LINUX platform.</p> <p>PC531IT.2 Develop and Implement Client-Server Socket based programs using TCP, and UDP sockets</p> <p>PC531IT.3 Develop and Implement Distance Vector Routing Algorithm</p> <p>PC531IT.4 Develop and Implement RSA Public Key algorithm</p> <p>PC531IT.5 Construct simple network by using any modern Open Source Network Simulation Tool</p> |

VII SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|----------------------------|------------------|--|
| CLOUD COMPUTING | PE 713 IT | <p>PE 713 IT.1 Understand the architecture and concept of different cloud models : IaaS, PaaS, SaaS,</p> <p>PE713IT.2 Create virtual machine images and deploy them on cloud</p> <p>PE713IT.3 Identify security and compliance issues in clouds</p> |
| VLSI DESIGN | PC 701 IT | <p>PC 701 IT.1 Explain VLSI Design hierarchy and analyse logic gates using CMOS & transmission gate structures.</p> <p>PC 701 IT.2 Identify the layers in the physical structure of ICs and draw the layouts of CMOS logic</p> <p>PC 701 IT.3 Summarize the fabrication process of CMOS ICs and analyse the DC, switching characteristics of CMOS inverter.</p> <p>PC 701 IT.4 Analyse dynamic CMOS & pseudo nMOS structures of logic gates, SRAM & DRAM cells</p> <p>PC 701 IT.5 Develop Verilog code for logic gates, examine the effects of interconnect elements in logic cascades and Explain the floor-planning , routing techniques of VLSI circuits</p> |
| BIG DATA ANALYTICS | PC 702 IT | <p>PC 702 IT.1 Demonstrate big data and use cases from selected business domains.</p> <p>PC 702 IT.2 Apply the knowledge of NoSQL big data management and experiment with Install, configure, and run Hadoop and HDFS.</p> <p>PC 702 IT.3 Analyze map-reduce analytics using Hadoop.</p> <p>PC 702 IT.4 Adapt Hadoop related tools such as HBase, PCass PC 702 IT PC302.5 Develop applications in Hive and Pig</p> |
| FUNDAMENTALS OF IOT | OE 773 EC | <p>OE773EC.1 Understand the various applications of IoT and other enabling technologies</p> <p>OE773EC.2 Comprehend various protocols and communication technologies used in IoT</p> <p>OE773EC.3 Design simple IoT systems with requisite hardware and C programming software</p> <p>OE773EC.4 Understand the relevance of cloud computing and data analytics to IoT</p> <p>OE773EC.5 Comprehend the business model of IoT from developing a prototype to launching a product.</p> |

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| <p align="center">VLSI DESIGN LAB</p> | <p align="center">PC 751 IT</p> | <p>PC751 IT.1 Demonstrate Xilinx ISE suite to write Verilog code for logic gates, combinational circuits and sequential circuits</p> <p>PC751 IT.2 Write Verilog code for basic logic gates, complex logic gates, combinational circuits, and sequential circuits using switch level, gate level, data flow and behavioural modelling</p> <p>PC751 IT.3 Develop test bench code using Verilog and verify the simulation results.</p> <p>PC751 IT.4 Demonstrate the FPGA implementation of digital circuits and generate the synthesis report</p> <p>PC751 IT.5 Draw the layouts of basic logic gates using Microwind</p> |
| <p align="center">PROJECT WORK – I</p> | <p align="center">PW 761 IT</p> | <p>PW 761 IT.1 Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.</p> <p>PW 761 IT.2 Evaluate different solutions based on economic and technical feasibility</p> <p>PW 761 IT.3 Effectively plan a project and confidently perform all aspects of project management</p> <p>PW 761 IT.4 Demonstrate effective written and oral communication skills</p> |

IV SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|---|-----------------|---|
| THEORY OF AUTOMATA | SPC401IT | <p>SPC401IT .1Gain the knowledge of basic kinds of finite automata and their capabilities.</p> <p>SPC401IT .2Understand regular and context-free languages</p> <p>SPC401IT .3Gain the knowledge to analyze regular expressions and grammars</p> <p>SPC401IT .4Design finite automata, push down automata</p> <p>SPC401IT .5Constructing the Turing machine for Recursive languages.</p> |
| DIGITAL IMAGE PROCESSING | SES402EC | <p>SES402EC .1Illustrate an image, applications of DIP, image sampling & quantization. BLT1</p> <p>SES402EC .2Implement basic transforms used in image processing like FFT, DCT, Slant transform etc. BLT4</p> <p>SES402EC .3Distinguish spatial & frequency domain enhancement, Image smoothing and sharpening operations. BLT2</p> <p>SES402EC .4Estimate the degradation functions using image observation, experimentation and by modeling, Inverse filter. BLT1</p> <p>SES402EC .5Implement image segmentation techniques, identify descriptors, shape numbers. BLT3</p> <p>Describe types of redundancy. types of compression techniques and their compression ratio. BLT1</p> |
| COMPUTER ORGANIZATION AND MICROPROCESSOR | SPC403IT | <p>SPC403IT .1 Understand the Instruction Set Architecture: Instruction format, types, various addressing modes</p> <p>SPC403IT .2 Understand the basic components of the CPU</p> <p>SPC403IT .3 Understand the parallelism both in terms of a single processor and multiple processors</p> <p>SPC403IT .4 Understand the 8085 and 8051 architectures</p> <p>SPC403IT .5 Apply interfacing with I/O Organization, Interrupt-driven I/O, DMA</p> |
| SIGNALS & SYSTEMS | SES401EC | <p>SES401EC .1To be able to classify , describe the signals mathematically and learn how to perform mathematical operations on signals.</p> <p>SES401EC .2To be able to compute the Fourier series of a set of well-defined signals in different forms.</p> <p>SES401EC .3Able to represent aperiodic signals by Fourier Transform and use Laplace transform to solve differential equations.</p> <p>SES401EC .4To be able analyze Discrete time signal using Fourier series and Fourier integral</p> <p>SES401EC .5Able to find discrete z-transform and DTFT of a given problem.</p> |
| OPERATING SYSTEMS | SPC402IT | <p>SPC402IT .1Understand System calls and evaluate process scheduling</p> |

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| | | <p>SPC402IT .2Apply procedures for process synchronization</p> <p>SPC402IT .3Understand the concepts of deadlock</p> <p>SPC402IT .4Implement the concepts of memory management.</p> <p>SPC402IT .5 Understand file system interface and I/O systems.</p> |
| MICROPROCESSORS LAB | SPC413IT | <p>SPC413IT .1Interpret the principles of Assembly Language Programming, instruction set in</p> <p>SPC413IT .2developing microprocessor-based applications. Develop Applications such as: 8-bit Addition, Multiplication, Division, array</p> <p>SPC413IT .3operations, swapping, negative and positive numbers.</p> <p>SPC413IT .4Analyse the interfaces like serial ports, digital-to-analog Converters and analog-to-digital converters etc.</p> <p>SPC413IT .5Build interfaces of Input-output and other units like stepper motor. Analyse the function of traffic light controller.</p> |
| OPERATING SYSTEMS LAB | PC412IT | <p>PC412IT .1Execute the UNIXcommands.</p> <p>PC412IT .2Implement CPU scheduling algorithms.</p> <p>PC412IT .3Implement producer-consumer problem reader-writers problem, dinning philosophers' problem.</p> <p>PC412IT .4Apply the Banker's algorithm for deadlock avoidance.</p> <p>PC412IT .5Implement page replacement and disk scheduling techniques.</p> |
| PYTHON LAB | SPC411IT | <p>SPC411IT .1Develop and execute simple programs using Python.</p> <p>SPC411IT .2Use conditional control structures for problem</p> <p>SPC411IT .3solving Decompose a problem using functions.</p> <p>SPC411IT .4Represent compound data using lists, tuples, dictionaries using Python</p> <p>SPC411IT .5Solve the complex problems using advanced Python concepts and design GUI.</p> |

VI SEMISTER

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|---|------------------|--|
| EMBEDDED SYSTEMS | PC 601 IT | <p>PC 601 IT .1Study and analysis of Embedded Systems</p> <p>PC601 IT .2Design and develop embedded systems (hardware, software and firmware)</p> <p>PC 601 IT.3Analyses real time systems using RTOS and develop applications</p> <p>PC 601 IT .4Apply knowledge to interface various sensors and its applications in Embedded systems</p> <p>PC 601 IT .5Understand principles of SOC design.</p> |
| DESIGN AND ANALYSIS OF ALGORITHMS | PC602IT | <p>PC602IT .1 Compute and analyse complexity of algorithms using asymptotic notations.</p> <p>PC602IT .2 Write algorithms to solve various computing problems and analyse their time and space complexity.</p> <p>PC602IT .3 Understand and apply different algorithm design techniques to solve real world problems and analyse their complexities.</p> <p>PC602IT .4 To describe algorithmic complexities of various well known computing problems.</p> <p>PC602IT .5 To learn algorithm design strategies such as Divide-and-Conquer, greedy method, dynamic programming, back tracking and branch & bound technique And the concepts of NP-hard and NP-complete.</p> |
| SOFTWARE TESTING AND QUALITY ASSURANCE | PE621 IT | <p>PE621 IT .1 Solve the problems using Software Testing techniques and Approaches.</p> <p>PE621 IT .2 Apply various Software testing Techniques to find bugs in software.</p> <p>PE621 IT .3 Use open source software Testing Tools</p> <p>PE621 IT .4 Apply various Software Quality Assurance Techniques to ensure the quality in software.</p> <p>PE621 IT .5 Apply several software measurements and metrics</p> |
| NETWORK SECURITY AND CRYPTOGRAPHY | PC 604 IT | <p>PC604IT.1 Understand the network security, services, attacks, mechanisms, types of attacks</p> <p>PC604IT.2 Demonstrate the various Symmetric and Asymmetric cryptographic algorithms</p> <p>PC604IT.3 Discuss various Authentication and Key Distribution Algorithms</p> <p>PC604IT.4 To comprehend and apply network layer security protocols Transport layer security protocols, Web security protocols.</p> <p>PC604IT.5 Implement Email security and IP Security mechanisms to the network.</p> |
| DISASTER MITIGATION | OE 601 CE | |
| MACHINE LEARNING | PC603IT | <p>PC603IT.1 Extract features that can be used for a particular machine learning approach in various applications.</p> <p>PC603IT.2 Compare and contrast pros and cons of various</p> |

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|---|-----------------|---|
| | | <p>machine learning techniques and to get an insight when to apply particular machine learning approach.</p> <p>PC603IT.3 Apply ensemble techniques for improvement of classifiers.</p> <p>PC603IT.4 Understand machine learning process along with algorithms.</p> <p>PC603IT.5 Understand how to apply machine learning in various applications.</p> |
| MACHINE LEARNING LAB | PC652 IT | <p>PC652IT.1 Apply machine learning algorithms: dataset preparation, model selection, model building etc.</p> <p>PC652 IT.2 Evaluate various Machine Learning approaches.</p> <p>PC652 IT.3 Use scikit-learn, Keras and Tensorflow to apply ML techniques.</p> <p>PC652IT.4 Design and develop solutions to real world problems using ML techniques.</p> <p>PC652IT.5 Apply unsupervised learning and interpret the results.</p> |
| EMBEDDED SYSTEMS LAB | PC651IT | <p>PC651IT.1 Apply the basic concepts to develop an Interface for 8051 and ARMprocessors.</p> <p>PC651IT.2 Demonstrate the RTOS Concepts by designing real timeapplications.</p> |
| MOBILE APPLICATION DEVELOPMENT LAB | PC653 IT | <p>PC653IT.1 Identify various concepts of mobile programming that make it unique from programming for other platforms.</p> <p>PC653IT.2 Critique mobile applications on their design pros and cons,</p> <p>PC653 IT.3 Utilize rapid prototyping techniques to design and develop sophisticated mobile interfaces,</p> <p>PC653IT.4 Program mobile applications for the Android operating system that use basic and advanced phone features, and</p> <p>PC653IT.5 Deploy applications to the Android marketplace for distribution.</p> |
| MINI PROJECTS-I | PW654IT | <p>PW654IT.1 Able to Identify and finalize problem statement by surveying variety of domains and technologies(Analyse)</p> <p>PW654IT.2 Able to Acquire practical knowledge within the chosen area of technology for project development(Understand)</p> <p>PW654IT.3 Able to Perform requirement analysis and identify design methodologies(Analyse)</p> <p>PW654IT.4 Able to Implement the system using SQL, data structures, C/C++, JAVA, Python and different software engineering models and present technical report by applying different visualization tools(Apply)</p> <p>PW654IT.5 Able to Contribute as an individual or in a team as a member in project development(Evaluate)</p> |

VIII SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|--|------------------|--|
| CRYPTOGRAPHY AND NETWORK SECURITY | PC 813 IT | <p>PC 813 IT.1 Understand the network security, services, attacks, mechanisms, types of attacks</p> <p>PC 813 IT.2 Demonstrate the various Symmetric and Asymmetric cryptographic algorithms</p> <p>PC 813 IT.3 Discuss various Authentication and Key Distribution Algorithms</p> <p>PC 813 IT.4 To comprehend and apply network layer security protocols Transport layer security protocols, Web security protocols.</p> <p>PC 813 IT.5 Implement Email security and IP Security mechanisms to the network.</p> |
| ROAD SAFETY ENGINEERING | OE801CE | <p>OE801CE .1 Prepare accident investigation reports and database.</p> <p>OE801CE .2 Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools</p> <p>OE801CE .3 Understanding Road Signs and Traffic signals</p> <p>OE801CE .4 Manage traffic including incident management</p> <p>OE801CE .5 Illustrate the applications of ITS</p> |
| PROJECT WORK – II | PW 861 IT | <p>PW 861 IT.1 Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.</p> <p>PW 861 IT.2 Evaluate different solutions based on economic and technical feasibility</p> <p>PW861IT.3 Effectively plan a project and confidently perform all aspects of project management</p> <p>PW861IT.4 Demonstrate effective written and oral communication skills</p> |

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN(Autonomous)
Chapel Road, Abids, Hyderabad - 500001

B. E.(IT) VII -Semester II-Mid Examination(CIE)- 25th January, 2023 [Set-1]

[Time: 1 Hour]

Big Data Analytics [PC 702 IT]
[Time:3:00PM - 4:00PM]

[Max. Marks: 20]

Note: 1) Answer all questions in Part - A.
2) Answer any two questions in Part - B.

PART - A

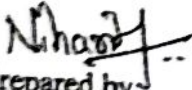
(Marks: 3×2 =6)

- | | | | |
|--|---|------|-------|
| 1. What are the different ways to construct version stamps in NoSQL? | 2 | CO-3 | BTL 1 |
| | | PO-1 | |
| 2. Compare MapReduce1 and YARN. | 2 | CO-4 | BTL 2 |
| | | PO-1 | |
| 3. What are the different Hive services? | 2 | CO-5 | BTL 1 |
| | | PO-1 | |

PART - B

(Marks: 2×7 =14)

- | | | | |
|--|---|------|-------|
| 4. Answer the following: | | | |
| a) What are the various distribution models in NoSQL? Explain. | 4 | CO-3 | BTL 1 |
| b) Explain the aggregate data models. | 3 | CO-3 | BTL 2 |
| | | PO-1 | |
| 5. Explain anatomy of YARN Map Reduce job run. | 7 | CO-4 | |
| | | PO-1 | BTL 2 |
| 6. Answer the following: | | | |
| a) What are four types of functions in pig? | 3 | CO-2 | BTL 1 |
| | | PO-1 | |
| b) Explain Hive architecture. | 4 | CO-1 | BTL 2 |
| | | PO-1 | |


Prepared by:
Mrs. N. Niharika (IT)
Asst. Prof.

POs, PSOs PEOs



Stanley College of Engineering and Technology for Women

(Autonomous)

(Affiliated to Osmania University)

(Accredited by NAAC with "A" Grade, Accredited by NBA)

Chapel Road, Abids, Hyderabad – 500 001

Department of Business Management

Program Educational Objectives (PEOs)

PEO1: To transform students into effective professionals.

PEO2: To equip the students to adapt a rapidly changing environment.

PEO3: To Prepare the students for immediate employment and for life-long learning in advanced areas of management.

Program Specific Outcomes (PSOs)

PSO1: Students should exhibit knowledge of management principles and organizational behavior.

PSO2: Students should demonstrate the contemporary Marketing, Financing and manpower management skills.

Program Outcomes (POs)

PO1: **Managerial Knowledge:** Demonstrate knowledge and understanding of the management concepts and apply in contemporary professional managerial practice

PO2: **Human Values and Ethics:** Demonstrate the knowledge of human values such as truth, honesty and loyalty by understanding the impact of management practice and Apply ethical principles and commit to professional ethics and responsibilities and norms of the management practice

PO3: **Functional Area knowledge:** To gain the knowledge in Finance, HR and Marketing areas with an understanding of practical application as per the contemporary needs, trends and changes



Stanley College of Engineering and Technology for Women

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(Accredited by NAAC with "A" Grade, Accredited by NBA)

Chapel Road, Abids, Hyderabad – 500 001

Department of Business Management

Program Educational Objectives (PEOs)

PEO1: To transform students into effective professionals.

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Program Specific Outcomes (PSOs)

PSO1: Students should exhibit knowledge of management principles and organizational behavior.

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Program Outcomes (POs)

PO1: **Managerial Knowledge:** Demonstrate knowledge and understanding of the management concepts and apply in contemporary professional managerial practice

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PO3: **Functional Area knowledge:** To gain the knowledge in Finance, HR and Marketing areas with an understanding of practical application as per the contemporary needs, trends and changes

| | | | | | | | | | |
|----------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 61 | 160618735305 | 2 | 1.5 | 2 | 5.5 | | 6 | 5 | 5 |
| 62 | 160618735306 | 2 | 1.5 | 2 | 6 | | 6 | 4 | 5 |
| 63 | 160618735307 | 2 | 1.5 | 2 | 6.5 | | 6 | 4 | 5 |
| 64 | 160618735308 | 1.5 | 1.5 | 2 | 6 | | 6 | 3 | 5 |
| 65 | 160618735313 | 2 | 1.5 | 2 | 5 | | 7 | 3 | 5 |
| 66 | 160617735002 | 1 | 0 | 1 | | 2 | 3 | 3 | 5 |
| 67 | 160617735007 | 2 | 2 | 2 | 6 | | 6 | 4 | 5 |
| 68 | 160617735015 | 2 | 0 | 2 | | 6 | 5.5 | 4 | 5 |
| 69 | 160617735025 | 2 | 2 | 2 | 5 | | 7 | 4 | 5 |
| 70 | 160617735038 | 2 | 2 | 2 | | 6 | 7 | 4 | 5 |
| 71 | 160617735058 | 1.5 | 0 | 2 | | 6 | 6 | 4 | 5 |
| SUM | | 127.5 | 103.5 | 128.0 | 369.0 | 168.0 | 272.5 | 317.0 | 355.0 |
| COUNT | | 71 | 71 | 71 | 63 | 32 | 47 | 71 | 71 |
| AVERAGE | | 1.80 | 1.46 | 1.80 | 5.86 | 5.25 | 5.80 | 4.46 | 5.00 |

CO Mapping with Exam Questions:

| | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|
| CO - 1 | Y | | | Y | Y | Y | Y | Y |
| CO - 2 | | Y | | Y | | | Y | Y |
| CO - 3 | | | Y | | | | Y | Y |
| CO - 4 | | | | | | | | |
| CO - 5 | | | | | | | | |

| | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|------|------|
| Students Scored | | | | | | | | |
| >Target % | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| % Students | | | | | | | | |
| Scored >Target | 96% | 85% | 93% | 98% | 88% | 94% | 100% | 100% |

CO Attainment based on Exam Questions:

| | | | | | | | | |
|--------|-----|-----|-----|-----|-----|-----|------|------|
| CO - 1 | 96% | | | 98% | 88% | 94% | 100% | 100% |
| CO - 2 | | 85% | | 98% | | | 100% | 100% |
| CO - 3 | | | 93% | | | | 100% | 100% |
| CO - 4 | | | | | | | | |
| CO - 5 | | | | | | | | |

| | | | | | |
|------|------|------|------|---------|-------|
| CO | Subj | Obj | Asgn | Overall | Level |
| CO-1 | 94% | 100% | 100% | 98% | 3 |

| |
|------------------|
| Attainment Level |
| 1 >= 40% |

| | | |
|----------|-------|-------------|
| isnumber | level | final level |
| TRUE | 3 | 3 |

| | | | | | | | |
|------|------|------|------|------|------|------|------|
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 68.0 | 60.0 | 66.0 | 62.0 | 28.0 | 44.0 | 71.0 | 71.0 |
| 71 | 71 | 71 | 63 | 32 | 47 | 71 | 71 |
| 96% | 85% | 93% | 98% | 88% | 94% | 100% | ### |

Scanned with CamScanner

| | | | | | |
|-----------------------------|-----|------|------|-----|------|
| CO-2 | 91% | 100% | 100% | 97% | 3 |
| CO-3 | 93% | 100% | 100% | 98% | 3 |
| CO-4 | | | | | |
| CO-5 | | | | | |
| Overall Course Attainment = | | | | | 3.00 |

| | |
|---|--------|
| 2 | >= 60% |
| 3 | >= 80% |

| | | |
|-------|---|---|
| TRUE | 3 | 3 |
| TRUE | 3 | 3 |
| FALSE | 3 | |
| FALSE | 3 | |

Scanned with CamScanner

| | | | | | | | | | |
|---------|--------------|-------|-------|-------|-------|------|-------|-------|------|
| 67 | 160617735007 | 2 | 2 | 2 | 3 | | 6 | 4 | |
| 68 | 160617735015 | 2 | 2 | 2 | 7 | 7 | 5 | 4 | 4 |
| 69 | 160617735025 | 1 | 2 | 1 | | | | 4 | 4 |
| 70 | 160617735038 | 2 | 2 | 2 | 2 | 7 | | 4 | |
| 71 | 160617735058 | 2 | 2 | 2 | 6 | | 7 | 4 | |
| SUM | | 135.0 | 129.5 | 134.0 | 336.5 | 37.0 | 267.0 | 317.0 | 37.0 |
| COUNT | | 71 | 71 | 71 | 54 | 49 | 39 | 71 | 7 |
| AVERAGE | | 1.90 | 1.82 | 1.89 | 6.23 | 6.88 | 6.85 | 4.46 | 5.0 |

| | | | | | | | | |
|------|------|------|------|-----|------|------|------|------|
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 64.0 | 59.0 | 63.0 | 49.0 | ### | 39.0 | 71.0 | 71.0 | 71.0 |
| 71 | 71 | 71 | 54 | 49 | 39 | 71 | 71 | 71 |
| 90% | 83% | 89% | 91% | ### | 100% | 100% | 100% | 100% |

CO Mapping with Exam Questions:

| | | | | | | | | | |
|--------|---|---|---|---|---|--|---|---|---|
| CO - 1 | | | | | | | | | |
| CO - 2 | | | | | | | | | |
| CO - 3 | | | | | Y | | | Y | Y |
| CO - 4 | | | Y | Y | | | | Y | Y |
| CO - 5 | Y | Y | | | | | Y | Y | Y |

| | | | | | | | | |
|---------------------------|-----|-----|-----|-----|------|------|------|------|
| Students Scored >Target % | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| % Students Scored >Target | 90% | 83% | 89% | 91% | 100% | 100% | 100% | 100% |

CO Attainment based on Exam Questions:

| | | | | | | | | |
|--------|-----|-----|-----|-----|------|--|------|------|
| CO - 1 | | | | | | | | |
| CO - 2 | | | | | | | | |
| CO - 3 | | | | | 100% | | | 100% |
| CO - 4 | | | 89% | 91% | | | | 100% |
| CO - 5 | 90% | 83% | | | | | 100% | 100% |

| | | | | | |
|-----------------------------|------|------|------|---------|-------|
| CO | Subj | Quiz | Asgn | Overall | Level |
| CO-1 | | | | | |
| CO-2 | | | | | |
| CO-3 | 100% | 100% | 100% | 100% | 3 |
| CO-4 | 90% | 100% | 100% | 97% | 3 |
| CO-5 | 91% | 100% | 100% | 97% | 3 |
| Overall Course Attainment = | | | | | 3.00 |

| | |
|------------------|---------|
| Attainment Level | |
| 1 | >= 40 % |
| 2 | >= 60 % |
| 3 | >= 80 % |

| | | |
|----------|-------|-------------|
| isnumber | level | final level |
| FALSE | 3 | |
| FALSE | 3 | |
| TRUE | 3 | 3 |
| TRUE | 3 | 3 |
| TRUE | 3 | 3 |

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STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
Department of Electronics and Communication Engineering
Course Outcome Attainment

Name of the Faculty : Anjum Fathima
Branch & Section : I CE-1
Subject : IAFM
Subject Code : IIS 707 ME
Sem :
Target % : 55%

| SL.No | REG. NO | NAME OF THE STUDENT | TOTAL |
|-----------|--------------|--------------------------|-------|
| Max Marks | | | 10.00 |
| 1 | 160618735001 | A. JAHNAVI | 7 |
| 2 | 160618735002 | AFREEN NIKHAT | 9 |
| 3 | 160618735003 | AMMANABOLU AAKANKSHA | 8 |
| 4 | 160618735004 | AMSAM SAHITHI | 8 |
| 5 | 160618735005 | A TURI ASWINI | 6 |
| 6 | 160618735006 | ATHMAKURI SUKSHMATA | 6 |
| 7 | 160618735007 | AYESHA SIDDIQA | 8 |
| 8 | 160618735008 | AYYAPUSETTY SAI PRANATHI | 6 |
| 9 | 160618735009 | B N MADHURI | 5 |
| 10 | 160618735010 | BHARANI RACHARLA | 6 |
| 11 | 160618735011 | BOGARAJU SWATHI | 5 |
| 12 | 160618735012 | BORRA RACHANA | 5 |
| 13 | 160618735013 | CHILUVERU DIVYA | 8 |
| 14 | 160618735014 | CHINTAKAYALA MOUNIKA | 8 |
| 15 | 160618735015 | CIRASINAGANDLA POOJITHA | 9 |
| 16 | 160618735016 | CHALLA PRAVALLIKA | 10 |
| 17 | 160618735017 | D NEHA REDDY | 9 |
| 18 | 160618735018 | DEVARAPALLI PRAVALLIKA | 7 |
| 19 | 160618735019 | DIDUGU VYSHNAVI | 8 |
| 20 | 160618735020 | DOREPALLY SWETHA | 9 |
| 21 | 160618735021 | DURSHETY SATHVIKA | 8 |

Is > Target%
5.5

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| | | | | |
|----|--------------|--------------------------|----|---|
| 22 | 160618735022 | I RANI LAKSHMI PRASANNA | 8 | 1 |
| 23 | 160618735023 | I AREESA KAZIMI | 6 | 1 |
| 24 | 160618735024 | C BHAVANA | 9 | 1 |
| 25 | 160618735025 | C SRUJANA | 8 | 1 |
| 26 | 160618735026 | C SRUJA | 6 | 1 |
| 27 | 160618735027 | C ANESHULA SRUTHI | 7 | 1 |
| 28 | 160618735028 | C OPU BHOOMIKA | 5 | 0 |
| 29 | 160618735029 | C ORTHI MADHULIKA | 8 | 1 |
| 30 | 160618735030 | H G MANASA | 6 | 1 |
| 31 | 160618735031 | HAFSA AHMED | 9 | 1 |
| 32 | 160618735032 | HIMANSHI AGARWAL | 10 | 1 |
| 33 | 160618735033 | J NAGA ANANDINI | 5 | 0 |
| 34 | 160618735034 | JAGABATHUNI SRI POOJITHA | 7 | 1 |
| 35 | 160618735035 | K PRANATHI | 6 | 1 |
| 36 | 160618735036 | K. B.L.P. SREEJA | 8 | 1 |
| 37 | 160618735037 | KASALA SAHITHI | 8 | 1 |
| 38 | 160618735038 | KOSIREDDY MEGHANA REDDY | 10 | 1 |
| 39 | 160618735039 | K. JAHNNAVI | 8 | 1 |
| 40 | 160618735040 | LINGAM DIVVYASREE | 8 | 1 |
| 41 | 160618735042 | M. SAI NIKITHA | 7 | 1 |
| 42 | 160618735043 | M. VARSHA | 6 | 1 |
| 43 | 160618735044 | MAKTHALA RITHIKA | 8 | 1 |
| 44 | 160618735045 | MAMIDIPAKA ANURADHA | 8 | 1 |
| 45 | 160618735046 | MENGANI LAXMI PRASANNA | 8 | 1 |
| 46 | 160618735048 | MYNENI VENKATA GEETHIKA | 6 | 1 |
| 47 | 160618735049 | NALLAPU SREEJA | 9 | 1 |
| 48 | 160618735050 | NELAPUDI DHANALAKSHMI | 8 | 1 |
| 49 | 160618735051 | P AKHILA | 6 | 1 |
| 50 | 160618735052 | PASARAGONDA RAVALIKA | 6 | 1 |
| 51 | 160618735053 | PASHAM NEHA | 7 | 1 |
| 52 | 160618735054 | POGUL SAI PRIYA | 6 | 1 |
| 53 | 160618735055 | PONNALA SHIVANI | 5 | 0 |
| 54 | 160618735056 | PULIPATI SNEHA NANDINI | 7 | 1 |

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| | | | | | |
|-----|--------------|----------------------------|-----------|-------|-----|
| 55 | 160618735057 | I EDDY SUMANA SRI | 6 | 1 | |
| 56 | 160618735058 | S REE HARSHINI SIRIPU EDDY | 6 | 1 | |
| 57 | 160618735059 | V AGULAPURAM PRANETHA | 6 | 1 | |
| 58 | 160618735060 | V OUSUF AAFREEN | 5 | 0 | |
| 59 | 160618735302 | V IOGILI AKHILA | 6 | 1 | |
| 60 | 160618735304 | F ANTANGI SRI HARI PRIYA | 6 | 1 | |
| 61 | 160618735305 | F ATRI UMA MAHESHWARI | 7 | 1 | |
| 62 | 160618735306 | P OTHUGANTI SASYA REDDY | 9 | 1 | |
| 63 | 160618735307 | R NAMRATHA | 8 | 1 | |
| 64 | 160618735308 | V RADHIKA | 6 | 1 | |
| 65 | 160618735313 | B ANAPURAM ASHWINI | 6 | 1 | |
| 66 | 160617735002 | A LICHALAVYSHALI | 0 | 0 | |
| 67 | 160617735007 | B HARATHULA LAHARI | 5 | 0 | |
| 68 | 160617735015 | Nivruthi | 0 | 0 | |
| 69 | 160617735025 | J AKKIDI HARSHITHA | 6 | 1 | |
| 70 | 160617735038 | N EERATI VANI | 7 | 1 | |
| 71 | 160617735058 | A LEKHYA VEMU | 6 | 1 | |
| Sum | | | 489 | SUM | 61 |
| Avg | | | 8.8909091 | Count | 71 |
| | | | | % | 86% |

| No. of students scored more than target % | 61 | Attainment Level | Percentage |
|--|-------------|------------------|-------------------|
| No. of students present | 71 | 1 | >= 40 % |
| Percentage of students scored more than target % | 86% | 2 | >= 60 % |
| Attainment level | 3.00 | 3 | >= 80 % |

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STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
 Department of Electronics and Communication Engineering
Course Outcome Attainment

Name of the Faculty : **Anjum Fathima** AY: **2021-22**
 Branch & Section: **EC1.1**
 Subject: **IAFM** Sem: **VII**
 Subject Code: **HS 707 ME** AICTE

| Course Outcomes | 1st Internal Exam | 2nd Internal Exam | Internal Exam | University Exam |
|-----------------|-------------------|-------------------|---------------|-----------------|
| CO1 | 3.00 | | 3.00 | 3.00 |
| CO2 | 3.00 | | 3.00 | 3.00 |
| CO3 | 3.00 | 3.00 | 3.00 | 3.00 |
| CO4 | | 3.00 | 3.00 | 3.00 |
| CO5 | | 3.00 | 3.00 | 3.00 |

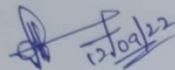
Attainment level of Course Outcomes

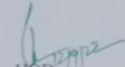
| | Course Outcomes | Attainment Level |
|-----|--|------------------|
| CO1 | Students can understand various phases of product life cycle and design various plants and product layouts. | 3.00 |
| CO2 | Students will be able to analyze various types of manufacturing systems, plant layout, optimization problem. | 3.00 |
| CO3 | Students can understand the quality control, process control. | 3.00 |
| CO4 | Students will be able to analyze the material control, appreciate the importance. | 3.00 |

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| | | |
|-----|--|------|
| CO5 | Students will be able to show the difference terminology used in financial management and various types of cost in running an industrial organization. | 3.00 |
|-----|--|------|

Average 3.00
Overall course attainment level 3.00


 Faculty Signature
 Anjum Fathima


 HOD

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Co-Po Mapping (2022-23)

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN

Department of Information Technology

Course Outcome Attainment

Name of the Faculty : Ms. Anjum Fathima

Internal 1

AY: 2022-23

Branch & Section: I.CE

Subject: IAFM

Subject Code: HS701ME

Year: AICTE Sem: VII SEM

Target %= 55%

| S.No | HT No. | Question No. | | | | | | Q1 | AI |
|------|----------------|--------------|-----|-----|-----|-----|-----|-----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | | |
| | Max. Marks ==> | 2 | 2 | 2 | 7 | 7 | 7 | 5 | 5 |
| 1 | 160619735001 | 1.5 | 1 | 2 | | 3 | 5.5 | 4.5 | 5 |
| 2 | 160619735002 | 2 | 1.5 | 2 | 6.5 | | 3 | 4 | 5 |
| 3 | 160619735003 | 2 | 1.5 | 2 | 4 | 4 | | 3.5 | 5 |
| 4 | 160619735004 | 2 | 1.5 | 2 | 4 | | 3 | 3.5 | 5 |
| 5 | 160619735005 | 2 | 1.5 | 2 | 7 | | 4 | 3.5 | 5 |
| 6 | 160619735006 | 2 | 2 | 2 | 7 | | 6.5 | 3.5 | 5 |
| 7 | 160619735007 | 1.5 | 1.5 | 2 | 6 | 3 | | 3 | 5 |
| 8 | 160619735008 | 1.5 | 2 | 2 | 4 | 5 | | 3.5 | 5 |
| 9 | 160619735009 | 2 | 2 | 1.5 | 6.5 | | 3 | 3 | 5 |
| 10 | 160619735010 | 2 | 1.5 | 2 | 5.5 | | 5.5 | 3.5 | 5 |
| 11 | 160619735011 | 2 | 1.5 | 2 | | 2.5 | 7 | 4 | 5 |
| 12 | 160619735012 | 2 | 2 | 1.5 | 5 | | 3 | 3.5 | 5 |
| 13 | 160619735013 | 2 | 1.5 | 2 | 3 | | 5 | 3.5 | 5 |
| 14 | 160619735014 | 2 | 2 | 2 | 7 | 7 | | 4 | 5 |
| 15 | 160619735015 | 2 | 2 | 2 | 5 | | 4.5 | 3.5 | 5 |
| 16 | 160619735016 | 2 | 1.5 | 2 | 5 | | 4.5 | 4 | 5 |
| 17 | 160619735017 | 2 | 1.5 | 2 | 7 | 5.5 | | 4 | 5 |
| 18 | 160619735018 | 1 | | 1 | 1 | | | 2 | 5 |
| 19 | 160619735019 | 2 | 2 | 2 | 7 | 1.5 | | 3.5 | 5 |
| 20 | 160619735020 | 2 | 2 | 2 | 3 | 2 | | 3 | 5 |
| 21 | 160619735021 | 2 | 1.5 | 2 | 7 | | 6.5 | 4 | 5 |
| 22 | 160619735022 | 1 | 1 | 1 | 2 | 1 | | 3 | 5 |
| 23 | 160619735023 | 2 | 2 | 1.5 | 7 | 5 | | 3.5 | 5 |
| 24 | 160619735024 | 2 | 2 | 2 | 7 | | 4.5 | 3.5 | 5 |

| Question No. | | | | | | Q1 | AI |
|--------------|-----|-----|------|------|------|------|------|
| 1 | 2 | 3 | 4 | 5 | 6 | | |
| 1.1 | 1.1 | 1.1 | 3.85 | 3.85 | 3.85 | 2.75 | 2.75 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |

| | | | | | | | | | | |
|----|----------------|-------|------|-------|-------|------|------|-------|---------|---|
| 25 | 160619735025 | 2 | 1.5 | 2 | 3 | 1 | | 3 | 5 | 5 |
| 26 | 160619735026 | 2 | 2 | 2 | 6 | 3 | | | | 5 |
| 27 | 160619735027 | 2 | 2 | 1 | 5.5 | 3 | | 3 | 5 | 5 |
| 28 | 160619735028 | 1.5 | 2 | 2 | 5.5 | | 3 | | | 5 |
| 29 | 160619735029 | 2 | 2 | 2 | 4 | 2.5 | | 3 | 5 | 5 |
| 30 | 160619735030 | 2 | 2 | 2 | 4 | 2.5 | | 3 | 5 | 5 |
| 31 | 160619735031 | 2 | 1.5 | 2 | 5 | | 3 | 2 | 5 | 5 |
| 32 | 160619735032 | 1.5 | 1.5 | 1.5 | 3.5 | 2 | | | | 5 |
| 33 | 160619735033 | 2 | 1.5 | 2 | 3 | | 3.5 | | | 5 |
| 34 | 160619735034 | 2 | 1.5 | 2 | 3 | 3 | | 3 | 5 | 5 |
| 35 | 160619735035 | 1.5 | 2 | 2 | 6 | 4 | | 2 | 5 | 5 |
| 36 | 160619735036 | 1 | 2 | 1 | 3 | | | | | 5 |
| 37 | 160619735037 | 2 | 2 | 2 | 6 | 3.5 | | 3 | 5 | 5 |
| 38 | 160619735038 | 2 | 2 | 2 | 7 | 4 | | | | 5 |
| 39 | 160619735039 | 2 | 2 | 2 | 3.5 | 3 | | 3 | 5 | 5 |
| 40 | 160619735040 | 2 | 2 | 1 | 7 | 4 | | | | 5 |
| 41 | 160619735041 | 2 | 2 | 2 | 5.5 | 3.5 | | 3 | 5 | 5 |
| 42 | 160619735042 | 2 | 1.5 | 2 | 6 | 2.5 | | | | 5 |
| 43 | 160619735043 | 2 | 2 | 2 | 5.5 | 3 | | 3 | 5 | 5 |
| 44 | 160619735044 | 2 | 2 | 2 | 3 | 6 | | 4 | 5 | 5 |
| 45 | 160619735045 | 2 | 2 | 2 | 6.5 | | 3.5 | 3 | 5 | 5 |
| 46 | 160619735046 | 2 | 2 | 2 | 5 | 4 | | 3 | 5 | 5 |
| 47 | 160619735047 | 2 | 2 | 2 | 5 | 3 | | 3 | 5 | 5 |
| 48 | 160619735048 | 2 | 2 | 2 | 4.5 | 3.5 | | 3 | 5 | 5 |
| 49 | 160619735049 | 1.5 | 2 | 2 | 4.5 | 4 | | 3 | 5 | 5 |
| 50 | 160619735050 | 2 | 1.5 | 1.5 | 4 | | 3.5 | 1 | 5 | 5 |
| 51 | 160618735077 | 2 | 1 | 2 | 7 | 6 | | 3 | 4 | |
| | SUM | 95.5 | 88 | 94.5 | 248 | 111 | 82 | 165 | 254 | |
| | COUNT | 51 | 50 | 51 | 49 | 32 | 19 | 51 | 51 | |
| | AVERAGE | 1.873 | 1.76 | 1.853 | 5.061 | 3.45 | 4.32 | 3.235 | 4.98039 | |

| | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|------|--|
| 1 | 1 | | 0 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | |
| 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | |
| 48 | 47 | 46 | 38 | 12 | 10 | 45 | 51 | | |
| 51 | 50 | 51 | 49 | 32 | 19 | 51 | 51 | | |
| % | 94% | 94% | 90% | 78% | 38% | 53% | 88% | 100% | |

CO Mapping with Exam Questions:

| | | | | | | | |
|--------|---|---|---|---|---|---|---|
| CO - 1 | Y | | | Y | | Y | Y |
| CO - 2 | | Y | | | Y | Y | Y |
| CO - 3 | | | Y | | | Y | Y |
| CO - 4 | | | | | | | |
| CO - 5 | | | | | | | |

Scanned with CamScanner

| | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|------|
| Students Scored | 48 | 47 | 46 | 38 | 12 | 10 | 4 | 51 |
| >Target % | | | | | | | | |
| % Students | 94% | 94% | 90% | 78% | 38% | 53% | 88% | 100% |
| Scored >Target | | | | | | | | |

CO Attainment based on Exam Questions:

| | | | | | | | | |
|--------|-----|-----|-----|-----|-----|-----|-----|------|
| CO - 1 | 94% | | | 78% | | | 88% | 100% |
| CO - 2 | | 94% | | | 38% | 53% | 88% | 100% |
| CO - 3 | | | 90% | | | 53% | 88% | 100% |
| CO - 4 | | | | | | | | |
| CO - 5 | | | | | | | | |

| CO | Subj | Obj | Asgn | Overall | Level |
|------|------|-----|------|---------|-------|
| CO-1 | 86% | 88% | 100% | 91% | 3 |
| CO-2 | 61% | 88% | 100% | 83% | 3 |
| CO-3 | 71% | 88% | 100% | 87% | 3 |
| CO-4 | | | | | |
| CO-5 | | | | | |

Overall Course Attainment = 3.00

| | |
|----------------|-------|
| Attainment Lev | |
| 1 | = 40% |
| 2 | = 60% |
| 3 | = 80% |

| isnumber | level | final level |
|----------|-------|-------------|
| TRUE | 3 | 3 |
| TRUE | 3 | 3 |
| TRUE | 3 | 3 |
| #### | | |
| #### | | |

Scanned with CamScanner

| | | | | | | | | | |
|----|--------------|------|------|-----|-----|-----|-----|-----|-----|
| 1 | 160619735021 | 2 | 2 | 2 | 7 | 7 | 4 | 5 | |
| 2 | 160619735022 | 1 | 2 | 2 | 0.5 | 6.5 | 4 | 5 | |
| 3 | 160619735023 | 2 | 2 | 1 | 7 | 5 | 3.5 | 5 | |
| 4 | 160619735024 | 2 | 2 | 2 | 6 | 7 | 2 | 5 | |
| 5 | 160619735025 | 2 | 2 | 1.5 | 3.5 | 3 | 1 | 5 | |
| 6 | 160619735026 | 2 | 2 | 2 | 5 | 5 | 3.5 | 5 | |
| 7 | 160619735027 | 2 | 2 | 1 | 7 | 4 | 2.5 | 5 | |
| 8 | 160619735028 | 1 | 1 | 0.5 | 3.5 | 4 | 2.5 | 5 | |
| 9 | 160619735029 | | | | | | | 5 | |
| 10 | 160619735030 | 2 | 2 | 1 | 2.5 | 4 | 2.5 | 5 | |
| 11 | 160619735031 | 2 | 2 | 2 | 6 | 7 | 4 | 5 | |
| 12 | 160619735032 | 2 | 2 | 2 | 4 | 4 | 3.5 | 5 | |
| 13 | 160619735033 | 2 | 2 | 2 | 4 | 3 | 1 | 5 | |
| 14 | 160619735034 | 2 | 1.5 | 2 | 4.5 | 3 | 4 | 5 | |
| 15 | 160619735035 | 2 | 2 | 2 | 5 | 5 | 4 | 5 | |
| 16 | 160619735036 | 2 | 2 | 2 | 3 | | 4 | 5 | |
| 17 | 160619735037 | 2 | 2 | 2 | 5 | 7 | 4 | 5 | |
| 18 | 160619735038 | 1.5 | 1 | 1 | 4.5 | 5 | 4.5 | 5 | |
| 19 | 160619735039 | 2 | 2 | 2 | 5 | 2 | 3.5 | 5 | |
| 20 | 160619735040 | 2 | 2 | 2 | 5 | 5 | 3.5 | 5 | |
| 21 | 160619735041 | 2 | 2 | 2 | 5 | 3 | 4 | 5 | |
| 22 | 160619735042 | 1 | 1 | 1 | 3.5 | | 4 | 5 | |
| 23 | 160619735043 | | | | | | | 5 | |
| 24 | 160619735044 | 2 | 1.5 | 1.5 | 3 | 5 | 3 | 5 | |
| 25 | 160619735045 | 2 | 2 | 2 | 7 | 3 | 4 | 5 | |
| 26 | 160619735046 | 2 | 0.5 | 0.5 | 3 | 4 | 3 | 5 | |
| 27 | 160619735047 | 2 | 2 | 2 | 5.5 | 5.5 | 3.5 | 5 | |
| 28 | 160619735048 | 2 | 2 | 2 | 5.5 | 1.5 | 3.5 | 5 | |
| 29 | 160619735049 | 1.5 | 1.5 | 2 | 5 | | 2.5 | 5 | |
| 30 | 160619735050 | 2 | 2 | 2 | 7 | | 4 | 5 | |
| 31 | 160618735077 | 1 | 1.5 | 1 | 6.5 | 4 | 2.5 | 5 | |
| | SUM | 87.5 | 84.5 | 78 | 156 | 225 | 60 | 161 | 255 |
| | COUNT | 48 | 48 | 48 | 33 | 42 | 16 | 48 | 51 |

| | | | | | | | | |
|----|----|----|----|----|----|----|----|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | | 1 |
| 0 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 0 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 0 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | | | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | | | 1 |
| 0 | 0 | 0 | 0 | 1 | 0 | | | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | | | 1 |
| 1 | 1 | 0 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 0 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 1 | | | 1 |
| 1 | 0 | 0 | 0 | 1 | 1 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | | | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | | | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | | | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | | | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | | | 1 |
| 0 | 1 | 0 | 1 | 1 | 0 | | | 1 |
| 42 | 42 | 34 | 25 | 38 | 8 | 36 | 51 | |
| 48 | 48 | 48 | 33 | 42 | 16 | 48 | 51 | |

Scanned with CamScanner

| | | | | | | | | |
|----------------|-----|-----|-----|-----|-----|-----|-----|---|
| AVERAGE | 82% | 76% | 62% | 47% | 54% | 37% | 33% | 5 |
|----------------|-----|-----|-----|-----|-----|-----|-----|---|

| | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|------|
| % | 88% | 88% | 71% | 76% | 90% | 50% | 75% | 100% |
|---|-----|-----|-----|-----|-----|-----|-----|------|

CO Mapping with Exam Questions:

| | | | | | | | | |
|--------|---|---|---|---|---|---|---|--|
| CO - 1 | | | | | | | | |
| CO - 2 | | | | | | | | |
| CO - 3 | Y | | | Y | | Y | Y | |
| CO - 4 | | Y | | | Y | Y | Y | |
| CO - 5 | | | Y | | Y | Y | Y | |

| | | | | | | | | |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|------|
| Students Scored | | | | | | | | |
| >Target % | 42 | 42 | 34 | 25 | 38 | 8 | 36 | 51 |
| % Students Scored >Target | 88% | 88% | 71% | 76% | 90% | 50% | 75% | 100% |

CO Attainment based on Exam Questions:

| | | | | | | | | |
|--------|-----|-----|-----|-----|-----|-----|-----|------|
| CO - 1 | | | | | | | | |
| CO - 2 | | | | | | | | |
| CO - 3 | 88% | | | 76% | | | 75% | 100% |
| CO - 4 | | 88% | | | 90% | | 75% | 100% |
| CO - 5 | | | 71% | | | 50% | 75% | 100% |

| | | | | | |
|------|------|------|------|---------|-------|
| CO | Subj | Quiz | Asgn | Overall | Level |
| CO-1 | | | | | |
| CO-2 | | | | | |
| CO-3 | 82% | 75% | 100% | 86% | 3 |
| CO-4 | 89% | 75% | 100% | 88% | 3 |
| CO-5 | 60% | 75% | 100% | 78% | 2 |

Overall Course Attainment = 2.67

| | |
|-------------------------|---------|
| Attainment Level | |
| 1 | >= 40 % |
| 2 | >= 60 % |
| 3 | >= 80 % |

| | | |
|----------|-------|-------------|
| isnumber | level | final level |
| FALSE | | |
| FALSE | | |
| TRUE | 3 | 3 |
| TRUE | 3 | 3 |
| TRUE | 2 | 2 |

Scanned with CamScanner

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
Department of Information Technology
Course Outcome Attainment

Name of the Faculty : Ms. Anjum Fathima Year : AICTE AY: 2022-23
 Branch & Section: ECE Sem: VII SEM
 Subject: IAFM Target % 55%
 Subject Code: HS701ME
 S=10,A=9,B=8,C=7,D=6,E=5,F=0

| Sl.No | REG. NO | NAME OF THE STUDENT | TOTAL |
|-------|--------------|-------------------------|-----------------|
| | | | Max Marks 10.00 |
| 1 | 160619735001 | AFIFA RABBANI | 5 |
| 2 | 160619735002 | AIRPULA NIKITHA | 6 |
| 3 | 160619735003 | AKAVARAM SNEHA | 5 |
| 4 | 160619735004 | ALAMPALLY AKAANKSHA | 7 |
| 5 | 160619735005 | ANISETTI PRAHARSHA | 7 |
| 6 | 160619735006 | BADISHA SAI KAVYA SREE | 7 |
| 7 | 160619735007 | BOPPU SAI SHRIYA | 6 |
| 8 | 160619735008 | BOTUMANCHI PRAJWALA | 6 |
| 9 | 160619735009 | BYSANI LAKSHMI PRASANNA | 6 |
| 10 | 160619735010 | CHINTALA MANISHA | 7 |
| 11 | 160619735011 | CHOLLETI MANASWINI | 7 |
| 12 | 160619735012 | DEVUNI VAISHNAVI | 5 |
| 13 | 160619735013 | G SANDHYA | 6 |
| 14 | 160619735014 | GANDLA JAYA SREE | 8 |
| 15 | 160619735015 | GINNE VARSHA | 7 |
| 16 | 160619735016 | GODHA NIKHITHA | 7 |
| 17 | 160619735017 | GUDISEVA BHAVANA | 7 |
| 18 | 160619735018 | GULLEPELLI SRUJA | 0 |
| 19 | 160619735019 | HAJERA FATHIMA | 6 |
| 20 | 160619735020 | JANNAMARAJU SRIPURNA | 5 |

Is > Target%
 5.5
 0
 1
 0
 1
 1
 1
 1
 1
 1
 1
 1
 0
 1
 1
 1
 1
 1
 0
 0
 1
 0

Scanned with CamScanner

| | | | |
|-----|--------------|-----------------------------|-----------|
| 21 | 160619735021 | JELLAPURAM SUSHSMITHA | 7 |
| 22 | 160619735022 | KOPPULA SAI SATHI | 0 |
| 23 | 160619735023 | KANDULA SAI SATHI | 7 |
| 24 | 160619735024 | KANKANALA SIVAKAVANI | 7 |
| 25 | 160619735025 | KATTUPALLI PRAAGNA ANGELINE | 5 |
| 26 | 160619735026 | KONDURI BHAVANI | 6 |
| 27 | 160619735027 | MUCHARLA SAI SREE | 6 |
| 28 | 160619735028 | MUTHE SRITEJA | 6 |
| 29 | 160619735029 | NALLI ELENA SHERENE | 0 |
| 30 | 160619735030 | NALUMACHU MAHALAKSHMI | 5 |
| 31 | 160619735031 | PABBA SHRAVANTHI | 6 |
| 32 | 160619735032 | PALREDDY VAISHNAVI | 6 |
| 33 | 160619735033 | PATHLAVATHI DEJA SRI | 6 |
| 34 | 160619735034 | RAJEERKULA KHYATHI | 6 |
| 35 | 160619735035 | RAVADA MOUNIKA | 7 |
| 36 | 160619735036 | SAMREEN | 5 |
| 37 | 160619735037 | SATHELLI SHRUTHI | 7 |
| 38 | 160619735038 | SHAIK HADIYA | 7 |
| 39 | 160619735039 | SIRIPURAPU SUNIDHI | 7 |
| 40 | 160619735040 | SRIKARI SAYARWAR | 6 |
| 41 | 160619735041 | SYEDA FAYEZA ALI | 7 |
| 42 | 160619735042 | THINETI BINDU | 6 |
| 43 | 160619735043 | TIRUMALA PALANANJANI | 6 |
| 44 | 160619735044 | V SAI CHANDANA | 7 |
| 45 | 160619735045 | VADLA SWATHI | 6 |
| 46 | 160619735046 | VATTIKUTI RAMYA | 6 |
| 47 | 160619735047 | VILLURI LAKSHMI SIVANI | 6 |
| 48 | 160619735048 | VODELA APOORVA | 6 |
| 49 | 160619735049 | YELE SRIVANI | 5 |
| 50 | 160619735050 | VEMULA MOUNIKA REDDY | 6 |
| 51 | 160618735077 | G.Mounika | 5 |
| Sum | | | 298 |
| Avg | | | 5.2280702 |

SUM 39
 Count 51

Scanned with CamScanner

% 76%

| | |
|--|----------|
| No. of students scored more than target % | 39 |
| No. of students present | 51 |
| Percentage of students scored more than target % | 76% |
| Attainment level | 2 |

| Attainment | Percentage |
|------------|------------|
| 1 | >= 40 % |
| 2 | >= 60 % |
| 3 | >= 80 % |

Scanned with CamScanner

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
 Department of Information Technology
Course Outcome Attainment

Name of the Faculty : Ms. Anjum Fathima
 Branch & Section: ECE
 Subject: IAFM
 Subject Code: HS701ME
 AY: 2022-23
 Year: AICTE
 Sem: VII SEM

| Course Outcomes | Exam | Internal | Exam | University Exam |
|-----------------|------|----------|------|-----------------|
| CO1 | 3 | | 3 | 2 |
| CO2 | 3 | | 3 | 2 |
| CO3 | 3 | 3 | 3 | 2 |
| CO4 | | 3 | 3 | 2 |
| CO5 | | 3 | 3 | 2 |

| Attainment level of Course Outcomes | | Attainment Level |
|-------------------------------------|--|------------------|
| CO1 | To demonstrate various organization structures and design various plant and product layouts. [BLT 3, 6] | 2.30 |
| CO2 | To analyze the principles of work study, method study, and importance of performance appraisal in the work | 2.30 |
| CO3 | To demonstrate quality of work and quality control systems through SOC tools. [BLT 3] | 2.30 |
| CO4 | To evaluate PERT/CPM techniques for projects of an enterprise and understand the concepts of various | 2.30 |
| CO5 | To understand the different techniques of capital budgeting and various types of costs and leverages | 2.30 |

Average 2.30

Overall course attainment level 2

Faculty Signature
 23/09/23

HOD 23/09/23

Scanned with CamScanner

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
Department of Information Technology
Program Outcome Attainment

Name of the Faculty: Ms. Anjum Fathima
 Branch & Section: ECE
 Subject: IAFM
 Subject Code: HS701ME

AY: 2022-23
 Year: IV
 Sem: VII SEM

Course outcome attainment

| CO | Ist Mid | IInd Mid | Int | Univ |
|-----|---------|----------|-----|------|
| CO1 | 3 | | 3 | 2 |
| CO2 | 3 | | 3 | 2 |
| CO3 | 3 | 3 | 3 | 2 |
| CO4 | | 3 | 3 | 2 |
| CO5 | | 3 | 3 | 2 |

CO-PO mapping

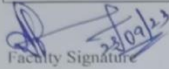
| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|-----|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|
| CO1 | 2 | 3 | 3 | | | | | | 2 | | | 3 | 2 | |
| CO2 | 2 | 3 | 3 | | | 2 | | | 3 | | | 3 | | |
| CO3 | 3 | 2 | 3 | | 3 | | | | 3 | | | 3 | | |
| CO4 | | 3 | 3 | | | | | | | | 3 | | | |
| CO5 | | 3 | 2 | 3 | | | 2 | | | | 3 | | | |
| Avg | 2.33 | 2.80 | 2.80 | 3.00 | 3.00 | 2.00 | 2.00 | | 2.67 | | 3.00 | 3.00 | 2.00 | |

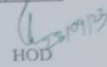
PO-ATTAINMENT

| | CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| INTERNAL | CO1 | 6 | 9 | 9 | | | | | | 6 | | | 9 | 6 | |
| | CO2 | 6 | 9 | 9 | | | 6 | | | 9 | | | 9 | | |
| | CO3 | 9 | 6 | 9 | | 9 | | | | 9 | | | 9 | | |
| | CO4 | | 9 | 9 | | | | | | | | 9 | | | |
| | CO5 | | 9 | 6 | 9 | | | 6 | | | | 9 | | | |
| | CO1 | 4 | 6 | 6 | | | | | | 4 | | | 6 | 4 | |

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| OVERALL UNIVERSITY | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 | Attainment |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| | 6 | 6 | | | 4 | | | | | 2.30 |
| | 4 | 6 | | 6 | | | | | | 2.30 |
| | 6 | 6 | | | | | | | | 2.30 |
| | 6 | 4 | 6 | | | 4 | | | | 2.30 |
| | 2 | 2 | | | | | | | | 2.30 |
| | 2 | 2 | | | 2 | | | | | 2.30 |
| | 2 | 2 | | 2 | | | | | | 2.30 |
| | 2 | 2 | | | | | | 2 | | 2.30 |
| | 2 | 2 | 2 | | | 2 | | | | 2.30 |


 Faculty Signature


 HOD

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Sample Question paper with Bloom's Taxonomy

Hall Ticket No-

Code: R412723

Stanley College of Engineering and Technology for Women (A)

MBA- II Semester (Main) Examinations July-2023

Business Research Methods

Time: 3 hours

Max. Marks:60

PART-A

Note: Answer all questions (Compulsory)

5 X 2=10M

1. Explain exploratory research. L2 CO1
2. Calculate Mean deviation for the following data by using Arithmetic mean.
X : 68 ,49 ,32, 21, 54, 38, 59, 66, 41 L3 CO2
3. What is Stratified Random Sampling? L1 CO3
4. Explain Confidential Interval L1 CO4
5. Discuss the concept of Correlation Analysis. L2 CO5

PART-B

Note: Answer all questions (Compulsory)

5 X 10= 50M

- 6 a. What is research design? Explain the criteria of a good research design. L2 CO1

OR

- b. Find out the Mode for the data given below: L3 CO1

| Class Interval | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 |
|----------------|-----|------|-------|-------|-------|-------|-------|
| Frequency | 2 | 4 | 20 | 8 | 20 | 18 | 4 |

- 7 a. Define Kurtosis. What are the different types of Kurtosis? Explain. L2 CO2

OR

- b. Calculate the Quartile Deviation and it's co-efficient. L3 CO2

| Value | 15-25 | 25-35 | 35-45 | 45-55 | 55-65 | 65-75 | 75-85 | 85-95 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency | 32 | 38 | 45 | 98 | 122 | 80 | 50 | 25 |

- 8 a. Define Data. Discuss the various methods of data collection. L4 CO3

OR

- b. Explain various Probabilistic sampling methods. L5 CO3

- 9 a. A group of 5 patients treated with medicine A weigh 42, 39, 48, 60, and 41 kgs. Second group of 7 patients from the same hospital treated with medicine B weigh 38,42,56,64, 68, 69, and 62 kgs. Do you agree with the claim that medicine B increases the weight significantly? (Use $\alpha=5\%$) L3 CO4

OR

- b. Write briefly about the various concepts used in hypothesis testing. L5 CO4

- 10 a. Find both regression lines to the following L4 CO5

Mean (X)=15
Mean (Y)=110
Variance (X) =25
Variance (Y) =625 and $r=0.81$

OR

- b. Find Karl Pearson's coefficient correlation to the following: L3 CO5

| | | | | | | | |
|---|----|----|----|----|----|----|----|
| X | 48 | 39 | 65 | 80 | 73 | 60 | 52 |
| Y | 10 | 50 | 12 | 25 | 90 | 60 | 55 |

Hall Ticket No.

Code: 223104/I

STANLEY COLLEGE OF ENGINEERING AND TECHNOLOGY FOR WOMEN (A)
Chapel Road, Abids

MBA-I-Semester (Main) Semester End Examinations, March-2022

Business Law and Ethics

Time: 3 Hrs

Max. Marks: 60

PART-A

5 X2=10 M

Note: Answer all questions (Compulsory)

Write short notes on the following.

1. Legality of object.
2. Offer.
3. Article of association.
4. Quasi contracts.
5. Consumer Redressal commission.

PART-B

5X10=50 M

Note: Answer all questions

6. a) How would you express that Contract without consideration is void?

OR

- b) How can you sort the Difference between coercion and undue influence?

7. a) How can you sort the difference between the duties of bailor and bailee?

OR

- b) What are the essential features of contract of guarantee?

8. a) What are the features of a company?

OR

b) Rani is a wealthy lady enjoying large dividend and interest income she has informed 3 private companies in agreed with each of them to hold a block of investment as an agent for it income received was credited in the accounts of a company but the company founded back the amount to her as a pretended loan. This way she divided her income into three parts in a bit to reduce her tax liability. Discuss the legality of the purpose for which the three companies were formed.

9. a) How would you express the law relating to IPR ?

OR

- b) How would you sort the difference between Arbitration and Conciliation?

10. a) What are ethical considerations?

OR

- b) What are the possible outcomes of principles of corporate governance?

Sample copy of a course showing all Course Objectives and Course Outcomes

| Course Code | Course Title | | | | Core/Elective | | |
|--------------|---------------------------------------|---|---|---|---------------|-----|---------|
| MB101 | Management & Organizational Behaviour | | | | Core | | |
| Prerequisite | Contact hours per week | | | | CIE | SEE | Credits |
| | L | T | D | P | | | |
| - | 5 | - | - | - | 40 | 60 | 5 |

Course Objectives:

1. To provide an understanding about individual and group behavior.
2. To understand the implications of organizational behavior on the process of management.
3. To evaluate the appropriateness of various Leadership styles towards Conflict Management

Course Outcomes:

1. Imbibe the key management process and various Approaches to Organization Structure
2. Impart knowledge on Decision-making, its models and importance of planning in the organizations
3. Analyze the psychological states of an employees and motivation theories towards their rate of success in the organizations
4. Identify various models of OB and the conflict models in the organization
5. Ideologize the organization design, culture and climate including the emerging aspects of Organizational Behaviour

Unit – I: Introduction to Management

Management Process and Functions, Scientific and Modern Management, 3D Model of Managerial Behavior – MBO – MBWA – Line and Staff – The Peter’s Principle – Parkinson’s Law – Main Approaches to Organisation Structure-Management – Classical, Human Relations, Systems and Contingency Approaches, Hawthorne’s Experiments – Human Engineering.

Unit – II: Planning and Decision Making

Decision Making and Negotiations: Approaches to Decision making – Rational, Behavioral, Practical, and Personal Approaches – Open and Closed Models of Decision Making, Types and steps in planning, Authority, Responsibility, Centralisation, Decentralisation and Recentralisation, Bureaucracy.

Unit – III: Organization Behaviour

Psychological contract – Personality Traits, Big 5 personality traits, MBTI inventory, the Process of Perception – Perceptual distortions and errors, Kelly's personal construct Theory, Motivation – Content Theories: Maslow, Alderfer, Herzberg, McClelland. Process Theories: Vroom, Porter and Lawler, Equity Theory – Goal Theory – Attribution Theory.

Unit – IV: Group Dynamics and Leadership

Models of OB – Autocratic, Custodial, Supportive, Collegial and System Models, Transactional Analysis, Johari Window, Group Dynamics: Typology of Groups – Conflicts in groups – The nature of conflict – Reactions to conflict – A model of conflict. Trait and Behavioral Approaches to Leadership, Managerial Grid, Path-Goal Theory, Vroom's Decision Tree Approach to Leadership – Hersey and Blanchard Model

Unit – V: Emerging aspects of OB

Organisation Design, organisation culture and organisation climate, Stress Management and Psychological Counseling for Pandemics, Job loss, Mergers & Acquisitions Management of change and organisation development, Organization Citizenship Behaviour, Communication – Emerging aspects of OB in Industrial Scenario.

Essential Books:

1. Harold Koontz and Heinz Weihrich, 2010, Essentials of Management, TMH.
2. Michael A. Hitt, J. Stewart Black, and Lyman W. Porter 2010, Management, Pearson.

Suggested Books:

1. Curtis W. Cook and Phillip L. Hunsaker, 2010, Management and Organizational Behaviour, Mc Graw – Hill Irwin.
2. Robbins & Judge, 2010, Organisational Behaviour, Prentice Hall of India.
3. Gregory Moorhead and Ricky W. Griffin 2010, Organisation Behaviour, Biztantra.
4. VSP Rao, V. Harikrishna 2010, Management – Text and Cases, Excel Books.
5. K. Aswathama 2010, Organisational Behaviour – Text, Cases and Games, Himalaya Publishing House.
6. Udai Pareek 2010, Understanding Organisational Behaviour, Oxford University Press.
7. Lauriel J Mullins, 2010, Management & Organisational Behaviour, Pearson.
8. Robin Finchem and Peter Rhodes 2010, Principles of Organisational Behaviour, Oxford University Press.
9. B.R. Virmani, 2010, Managing People in Organisations, Response Books.

2.6.1 The institution has stated learning outcomes (programme and course outcome)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution.

List of PO's,PSO's,PEO's

Program Outcomes as defined by NBA (PO)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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 Abids, Hyderabad, Telangana – 500001

Department of Artificial Intelligence & Data Science
Department PEO's and PSO's

Program Educational Objectives: (PEO's)

PEO1: To provide graduates with the proficiency to utilize the fundamental knowledge of basic sciences, mathematics, artificial intelligence, data science and statistics to build systems that require management and analysis of large volume of data.

PEO2: To enrich graduates with necessary technical skills to pursue pioneering research in the field of AI

PEO3: To encourage students to think critically, develop innovative skills, expose them to an array of ideas and information through numerous technical events, hackathons and quality internships.

Program Specific Outcomes: (PSO's)

PSO1: To instill interest and curiosity in students in the field of AI and Data Science through project based learning.

PSO2: To provide a concrete foundation and enrich their abilities to qualify for Employment, Higher studies and pursue Research in Artificial Intelligence and Data science with ethical values.

PSO3: To promote ethical and responsible AI practices for the benefit of humanity; and to harness AI for a positive societal impact & meet global standards.

CO-PO Mapping

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
 Department of Artificial Intelligence & Data Science
 Program Outcome Attainment

Name of Faculty: S.Sandhya Rani Academic Year: 2022-23
 Branch & Section: AI&DS Year:III Sem: I
 Course Name: DBMS
 Course Outcome Attainment:

| CO | Ist Mid | IInd Mid | Int | Univ |
|-----|---------|----------|-----|------|
| CO1 | 3 | | 3 | 2 |
| CO2 | 3 | 2 | 3 | 2 |
| CO3 | 3 | | 3 | 2 |
| CO4 | | 2 | 2 | 2 |
| CO5 | 3 | 3 | 3 | 2 |

CO-PO MAPPING:

| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
|-----|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| CO1 | 2 | | | | 1 | | | | 2 | | | 2 | 2 | |
| CO2 | 3 | 2 | | | | | | | 2 | | | 2 | 2 | 1 |
| CO3 | 3 | 2 | 2 | | | | | | 2 | | | 2 | 2 | 1 |
| CO4 | 3 | 2 | | 1 | | | | | 1 | | | 2 | 1 | 1 |
| CO5 | 3 | 2 | 2 | | | | | | 2 | | | 1 | 2 | 2 |

PO-ATTAINMENT:

| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
|------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| INTERNAL | CO 1 | 6 | | | 3 | | | | 6 | | | 6 | 6 | |
| | CO 2 | 7.5 | 5 | | | | | | 5 | | | 5 | 5 | 2.5 |
| | CO 3 | 9 | 6 | 6 | | | | | 6 | | | 6 | 6 | 3 |
| | CO 4 | 6 | 4 | | 2 | | | | 2 | | | 4 | 2 | 2 |
| | CO 5 | 9 | 6 | 6 | | | | | 6 | | | 3 | 6 | 6 |
| UNIVERSITY | CO 1 | 4 | | | 2 | | | | 4 | | | 4 | 4 | |
| | CO 2 | 6 | 4 | | | | | | 4 | | | 4 | 4 | 2 |
| | CO 3 | 6 | 4 | 4 | | | | | 4 | | | 4 | 4 | 2 |
| | CO 4 | 6 | 4 | | 2 | | | | 2 | | | 4 | 2 | 2 |
| | CO 5 | 6 | 4 | 4 | | | | | 4 | | | 2 | 4 | 4 |
| OVERALL | 1 | 2 | | | 2 | | | | 2 | | | 2 | 2 | |

Sample copy of a course showing all Course Objectives and Course Outcomes

2.6 Students Performance and Learning Outcomes

2.6.1 - Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students.

I&II SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|-------------------------------------|-------------|---|
| Programming for Problem Solving | SES101CS | <p>SES101CS 1. Describe the concept of a computer system, analyze a given problem, an algorithm, fundamental programming constructs, identify data representation formats, and describe operators and their precedence, associativity.</p> <p>SES101CS 2. Understand branching and loop statements.</p> <p>SES101CS 3. Describe the concept of homogeneous derived data types, strings, and functions.</p> <p>SES101CS 4. Understand pointers and heterogeneous data types.</p> <p>SES101CS 5. Describe the concept of file system.</p> |
| Programming for Problem-Solving Lab | SES111CS | <p>SES111CS.1. Understand the concept of basics of C, data types and variables.</p> <p>SES111CS.2. Understand the concept of operators, precedence of operators, conditional statements, looping statements.</p> <p>SES111CS.3. Explore the concept of strings, functions, recursive functions and differences between call by value and call by reference.</p> <p>SES111CS.4. Explore the concept of storage classes, preprocessor directives, pointers and files.</p> <p>SES111CS.5. Understand the concept of file handling functions, searching and sorting methods and real time applications of C.</p> |
| Data Structures using C | SES202CS | <p>SES202CS.1. Carryout the analysis of a range of algorithms in terms of algorithm analysis and express algorithm complexity using the O notation (Understand).</p> <p>SES202CS .2. Make use of recursive algorithm design technique in appropriate contexts (Apply).</p> <p>SES202CS.3. Represent standard ADTs by means of appropriate data structures (Understand).</p> <p>SES202CS.4. Select appropriate sorting technique for given problem (Understand).</p> <p>SES202CS.5. Select appropriate searching technique for given problem (Understand).</p> <p>SES202CS.6. Implement standard searching and sorting algorithms; including binary search; merge sort and quick sort; and their complexities (Apply).</p> <p>SES202CS.7. Design and implement linked lists, stacks and queues in C (Apply).</p> <p>SES202CS.8. Explain the use of basic data structures such as arrays, stacks, queues and linked lists in program design</p> |


| | | |
|---------------------|----------|---|
| | | <p>(Understand).</p> <p>SES202CS.9. Extend their knowledge of data structures to solve problems involving balanced binary search trees, AVL Trees, B-trees and B+ trees, hashing, and basic graphs.</p> <p>SES202CS.10. Design and implement tree structures in C (Apply)..</p> <p>SES202CS.11. Compare and contrast the benefits of dynamic and static data structures implementations and choose appropriate data structure for specified problem domain (Understand).</p> <p>SES202CS.12. Quickly determine and explain how efficient an algorithm or data structure will be apply appropriate data structures for solving computing problems with respect to performance (Analyze).</p> |
| Data Structures Lab | SES212CS | <ol style="list-style-type: none"> 1. Understand the concept of data structures, C Programming and apply algorithm for solving problems like Sorting, searching, insertion and deletion of data. 2. Understand linear data structures for processing of ordered or unordered data. 3. Explore various operations on dynamic data structures like single linked list, circular linked list and doubly linked list. 4. Explore the concept of non linear data structures such as trees and graphs. 5. Understand the binary search trees, hash function, and concepts of collision and its resolution methods. |

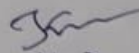
III SEM

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|--|-------------|---|
| Mathematics -III (Probability and Statistics) | SBS301MT | <p>SBS301MT.1. Apply probability theory to solve practical problems.</p> <p>SBS301MT.2. Apply various probability distributions to solve practical problems, to estimate unknown parameters and apply tests of hypothesis.</p> <p>SBS301MT.3. Apply continuous probability distributions like normal to solve the practical problems.</p> <p>SBS301MT.4. Perform a regression analysis and to compute and interpret the coefficient of correlation.</p> <p>SBS301MT.5. Apply Chi-square test for goodness of fit and independent attributes.</p> |
| DISCRETE MATHEMATICS | SES301AD | <p>SES301AD.1. Understand sets, functions, groups and relations.</p> <p>SES301AD.2. Apply permutation and combination to handle different types of problems.</p> <p>SES301AD.3. Apply propositional logic and predicate logic to solve logical statements.</p> <p>SES301AD.4. Evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra.</p> <p>SES301AD.5. Develop the given problem as graph networks and solve with techniques of graph theory.</p> |

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|-----------------------------------|-------------|---|
| Software Engineering | PC501AD | <p>PC501AD.1. Define different software development processes and their usability in different problem domains.</p> <p>PC501AD.2. Explain the process of requirements collection, analyzing, and modeling requirements for effective understanding and communication with stakeholders.</p> <p>PC501AD.3. Building the analysis models and design engineering concepts.</p> <p>PC501AD.4. Develop the architecture of real world problems towards developing a blueprint for implementation.</p> <p>PC501AD.5. Understand the concepts of testing, debugging and quality assurance.</p> |
| Database Management | PC502AD | <p>PC502AD.1. Understand the basics of database management system</p> <p>PC502AD.2. Define queries for preserving the integrity of the database</p> <p>PC502AD.3. Build ER models for database</p> <p>PC502AD.4. Organize the data to prevent redundancy</p> <p>PC502AD.5. Pose queries to retrieve the information from the database</p> |
| Artificial Intelligence | PC503AD | <p>PC503AD.1. Formalize a problem in the language/framework of different AI methods.</p> <p>PC503AD.2. Illustrate basic principles of AI in solutions that require problem solving, search, Inference.</p> <p>PC503AD.3. Represent natural language/English using Predicate Logic to build knowledge through various representation mechanisms.</p> <p>PC503AD.4. Demonstrate understanding of steps involved in building of intelligent agents, expert systems, Bayesian networks. Differentiate between learning paradigms to be applied for an application.</p> |
| Automata Language and Computation | PC504AD | <p>PC504AD.1. Write a formal notation for strings, languages, and machines.</p> <p>PC504AD.2. Design finite automata to accept a set of strings of a language.</p> <p>PC504AD.3. Design context free grammars to generate strings of context free languages.</p> <p>PC504AD.4. Understand the turing machine computation.</p> <p>PC504AD.5. Distinguish between computability and non-computability and Decidability and undecidability.</p> |
| Forecasting Techniques | PC505AD | <p>PC505AD.1. Knowledge of basic concepts in time series analysis and forecasting Understanding the use of time series models for forecasting and the limitations of the methods.</p> <p>PC505AD.2. Ability to criticize and judge time series regression models.</p> <p>PC505AD.3. Distinguish the ARIMA modelling of stationary and non-stationary time series Compare with multivariate times series and other methods of applications</p> |
| Web Technologies | PE514AD | <p>PE514AD.1. Construct a basic website using HTML and Cascading Style Sheets.</p> <p>PE514AD.2. Build dynamic web page with validation using Java</p> |

| | | |
|-----------------------------|---------|--|
| | | <p>Script objects and by applying different eve handling mechanisms.</p> <p>PE514AD.3. Develop server side programs using Servlets and JSP.</p> <p>PE514AD.4. Construct simple web pages in PHP and represent data in XML format.</p> <p>PE514AD.5. Utilize AJAX and web services to develop interactive web applications.</p> |
| Artificial Intelligence Lab | PC551AD | <p>PC551AD.1. Explain artificial intelligence, its characteristics and its application areas.</p> <p>PC551AD.2. Formulate real-world problems as state space problems, optimization problems or constraint satisfaction problems.</p> <p>PC551AD.3. Select and apply appropriate algorithms and AI techniques to solve complex problems.</p> <p>PC551AD.4. Design and develop an expert system by using appropriate tools and techniques</p> |
| DBMS Lab | PC552AD | <p>PC552AD.1. Design database for any real world problem</p> <p>PC552AD.2. Implement PL/SQL programs</p> <p>PC552AD.3. Define SQL queries</p> <p>PC552AD.4. Decide the constraints</p> |


Incharge.


HOD

2.6.1 The institution has stated learning outcomes (programme and course outcome)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution.

List of POs, PSOs PEOs

Program Outcomes as defined by NBA (PO)

Engineering Graduates will be able to:

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3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
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12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



Stanley College of Engineering and Technology for Women

(Approved by AICTE, Accredited by NBA, NAAC 'A', UGC Autonomous)

Abids, Hyderabad, Telangana – 500001

Department of Computer Engineering Department PSO's and PEO's

Program educational objectives: (PEOs)

PEO1: Our graduates shall have enhanced skills and comprehensive knowledge in software and hardware, networking technologies for professional excellence, towards successful self-employment, advanced learning, entrepreneurship and research.

PEO2: Our graduates shall have life-long learning attitude, innovation and creativity to master the state of the art technologies with inclination towards research, devising pragmatic solutions for realistic and social issues in the society.

PEO3: Our graduates shall have optimistic attitude and vibrant personality skills, high ethical values, individuality, excellent teamwork, leadership and entrepreneurial skills towards computer professionalism and ethical practices within the organization and the society.

Program specific outcomes: (PSOs)

PSO1: Problem-Solving Skills: The ability to apply industry standard practices and pragmatic strategies in software and hardware and network project development using open-ended programming environments to deliver a quality product within time and budget for the benefit of students.

PSO2: Design, Implement, Test and Evaluate a computer system, software, hardware, networks, component or innovative algorithm to meet desired needs and to solve a computational problem within time and space.

COPO Mapping

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN

Department of Computer Engineering
Program Outcome Attainment

Name of Faculty: R.Sirisha

Academic Year: 2022-23

Branch & Section: CME

Year: III Sem: V

Course Name: Design and Analysis of Algorithms

Course Outcome Attainment:

| CO | 1st Mid | 11nd Mid | Int | Unlv |
|-----|---------|----------|-----|------|
| CO1 | 3 | | 3 | 3 |
| CO2 | 1 | 3 | 2 | 3 |
| CO3 | 3 | | 3 | 3 |
| CO4 | | 3 | 3 | 3 |
| CO5 | | 3 | 3 | 3 |

CO-PO MAPPING

| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 | |
|-----|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|---|
| CO1 | 1 | 3 | 3 | 1 | | | | | | 1 | | | 1 | 3 | 3 |
| CO2 | 2 | 3 | 2 | 1 | | | | | | 1 | | | 1 | 3 | 3 |
| CO3 | 2 | 3 | 3 | 1 | | | | | | 1 | | | 1 | 3 | 3 |
| CO4 | 2 | 3 | 3 | 1 | | | | | | 1 | | | 1 | 3 | 3 |
| CO5 | 2 | 2 | 2 | 1 | | | | | | 1 | | | 1 | 3 | 3 |

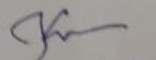
PO ATTAINMENT:

| | | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 | |
|------------|-----|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|---|
| INTERNAL | CO1 | 3 | 9 | 9 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO2 | 4 | 6 | 4 | 2 | | | | | 2 | | | | 2 | 6 | 6 |
| | CO3 | 6 | 9 | 9 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO4 | 6 | 9 | 9 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO5 | 6 | 6 | 6 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| UNIVERSITY | CO1 | 3 | 9 | 9 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO2 | 6 | 9 | 6 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO3 | 6 | 9 | 9 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO4 | 6 | 9 | 9 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| | CO5 | 6 | 6 | 6 | 3 | | | | | 3 | | | | 3 | 9 | 9 |
| OVERALL | CO1 | 3 | 3 | 3 | 3 | | | | | 3 | | | | 3 | 3 | 3 |
| | CO2 | 3 | 3 | 3 | 3 | | | | | 3 | | | | 3 | 3 | 3 |
| | CO3 | 3 | 3 | 3 | 3 | | | | | 3 | | | | 3 | 3 | 3 |
| | CO4 | 3 | 3 | 3 | 3 | | | | | 3 | | | | 3 | 3 | 3 |
| | CO5 | 3 | 3 | 3 | 3 | | | | | 3 | | | | 3 | 3 | 3 |
| Attainment | | 3 | 3 | 3 | 3 | | | | | 3 | | | | 3 | 3 | 3 |

Subject Handler

R. Sirisha




HOD-ARCE

Sample copy of a course showing all Course Objectives and Course Outcomes

2.6 Students Performance and Learning Outcomes

2.6.1 - Programme and course outcomes for all Programmes offered by the Institution are stated and displayed on website and communicated to teachers and students.

| NAME OF COURSE | COURSE CODE | COURSE OUTCOMES |
|--|-------------|--|
| Mathematics -III (Probability and Statistics) | SBS301MT | <p>SBS301MT.1. Apply probability theory to solve practical problems.</p> <p>SBS301MT.2. Apply various probability distributions to solve practical problems, to estimate unknown parameters and apply tests of hypothesis.</p> <p>SBS301MT.3. Apply continuous probability distributions like normal to solve the practical problems.</p> <p>SBS301MT.4. Perform a regression analysis and to compute and interpret the coefficient of correlation.</p> <p>SBS301MT.5. Apply Chi-square test for goodness of fit and independent attributes.</p> |
| DISCRETE MATHEMATICS | SES301AD | <p>SES301AD.1. Understand sets, functions, groups and relations.</p> <p>SES301AD.2. Apply permutation and combination to handle different types of problems.</p> <p>SES301AD.3. Apply propositional logic and predicate logic to solve logical statements.</p> <p>SES301AD.4. Evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra.</p> <p>SES301AD.5. Develop the given problem as graph networks and solve with techniques of graph theory.</p> |
| OOPS USING JAVA | SPC301AD | <p>SPC301AD.1. Identify classes, objects, members of a class and the relationships needed to solve a problem.</p> <p>SPC301AD.2. Use interfaces and creating user-defined packages.</p> <p>SPC301AD.3. Utilize exception handling and Multithreading concepts to develop Java programs.</p> <p>SPC301AD.4. Compose programs using the Java Collection API.</p> <p>SPC301AD.5. Design a GUI using GUI components with the integration of event handling.</p> |
| Digital Electronics | SES302EC | <p>SES302EC.1. Understand the design process of digital hardware, use Boolean algebra to minimize the logical expressions and optimize the implementation of logical functions.</p> <p>SES302EC.2. Understand the number representation and design combinational circuits like adders, MUX etc.</p> <p>SES302EC.3. Design Combinational circuits using PLDS and write Verilog HDL code for basic gates and combinational circuits.</p> <p>SES302EC.4. Analyze sequential circuits using flip-flops and design registers, counters.</p> <p>SES302EC.5. Represent a sequential circuit using Finite State machine and apply state minimization techniques to design a FSM.</p> |

| | | |
|--|----------|---|
| CONCEPTS IN COMPUTER ORGANIZATION AND MICROPROCESSOR | SPC303AD | <p>SPC303AD.1. Understand the Instruction Set Architecture: Instruction format, types, various addressing modes</p> <p>SPC303AD.2. Understand the basic components of the CPU</p> <p>SPC303AD.3. Understand the parallelism both in terms of a single processor and multiple processors</p> <p>SPC303AD.4. Understand the 8085 and 8051 architectures</p> <p>SPC303AD.5. Apply interfacing with I/O Organization, Interrupt-driven I/O, DMA.</p> |
| Electrical Technology | SAC902EE | <p>SAC902EE.1. Gain knowledge of construction and operation of conventional and non-conventional sources of energy</p> <p>SAC902EE.2. Understand the working principle of single phase and three phase transformers</p> <p>SAC902EE.3. Understand the Working principle of generator and motor</p> <p>SAC902EE.4. Know the working of inverter and rectifier operation</p> <p>SAC902EE.5. Understand the concept of Electrical vehicles.</p> |
| Python Programming Lab | SES311CM | <p>SES311CM.1. Develop and execute simple programs using Python.</p> <p>SES311CM.2. Use conditional control structures for problem solving</p> <p>SES311CM.3. Decompose a problem using functions.</p> <p>SES311CM.4. Represent compound data using lists, tuples, dictionaries using Python</p> <p>SES311CM.5. Solve the complex problems using advanced Python concepts and design GUI.</p> |
| OOPS USING JAVA LAB | SPC311AD | <p>SPC311AD.1. Understand object-oriented programming fundamental and java programming fundamentals such as classes, inheritance, abstract classes, interfaces, packages.</p> <p>SPC311AD.2. Apply exception handling, multithreading, input output basics and string handling</p> <p>SPC311AD.3. Design and apply collection framework.</p> <p>SPC311AD.4. Design AWT and Swings concept.</p> <p>SPC311AD.5. Apply input-output operations through IO package.</p> |
| CONCEPTS IN COMPUTER ORGANIZATION AND MICROPROCESSOR LAB | SPC313AD | <p>SPC313AD Interpret the principles of Assembly Language Programming, instruction set in developing microprocessor based applications.</p> <p>SPC313AD Develop Applications such as: 8-bit Addition, Multiplication, Division, array operations, swapping, negative and positive numbers.</p> <p>SPC313AD Analyse the interfaces like serial ports, digital-to-analog Converters and analog-to-digital converters etc</p> <p>SPC313AD Build interfaces of Input-output and other units like stepper motor.</p> <p>SPC313AD Analyse the function of traffic light controller.</p> |


Incharge.

[Signature]

SR
HOD

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

Department of Electronics and Communication Engineering



STANLEY COLLEGE OF ENGINEERING AND TECHNOLOGY FOR WOMEN (AUTONOMOUS)
Hyderabad – 500 001
(Affiliated to Osmania University & Approved by AICTE)
(All eligible UG Courses are accredited by NBA & Accredited by NAAC with 'A' Grade)

Department of Electronics and Communication Engineering

Vision of the Institute
Empowering girl students through professional education integrated with values and character to make an impact in the World.

Mission of the Institute
M1: Providing quality engineering education for girl students to make them competent and confident to succeed in professional practice and advanced learning.
M2: Establish state-of-art-facilities and resources to facilitate world class education.
M3: Integrating qualities like humanity, social values, ethics, leadership in order to encourage contribution to society.

Vision of the Department
Empowering girl students with the contemporary knowledge in Electronics and Communication Engineering for their success in life.


Mission of the Department
M1: To impart rationalized and high quality technical education and knowledge.
M2: To achieve self-sustainability and overall development through Research and Consultancy activities.
M3: To provide education for life by focusing on the inculcation of human and moral values through an honest and scientific approach
M4: To groom students with good attitude and personality skills.

Program Educational Objectives:

PEO-1: Graduate shall have skills to excel in professional career and in applied research through innovative design by acquiring the knowledge in Electronics and Communication Engineering principles

PEO-2: Graduate shall pursue higher education and participate in research and development activities or entrepreneurship to integrate engineering work in the environmental, ethical and broader societal contexts.

PEO-3: Graduate shall exhibit effective communication, good team building and leadership qualities to design socially accepted and economically feasible solutions through multidisciplinary and interdisciplinary approaches for analysis of real-life problems.



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Department of Electronics and Communication Engineering

Program Outcomes:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment & sustainability:** Understand the impact of professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team works:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes:

PSO1: Appertain to Communication and Automation Principles: To apply principles of Communication Engineering and Signal Processing both in private and public organizations.

PSO2: Adaptability to Productive Environment: To be well equipped with Management skills, interdisciplinary and modern technologies.

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

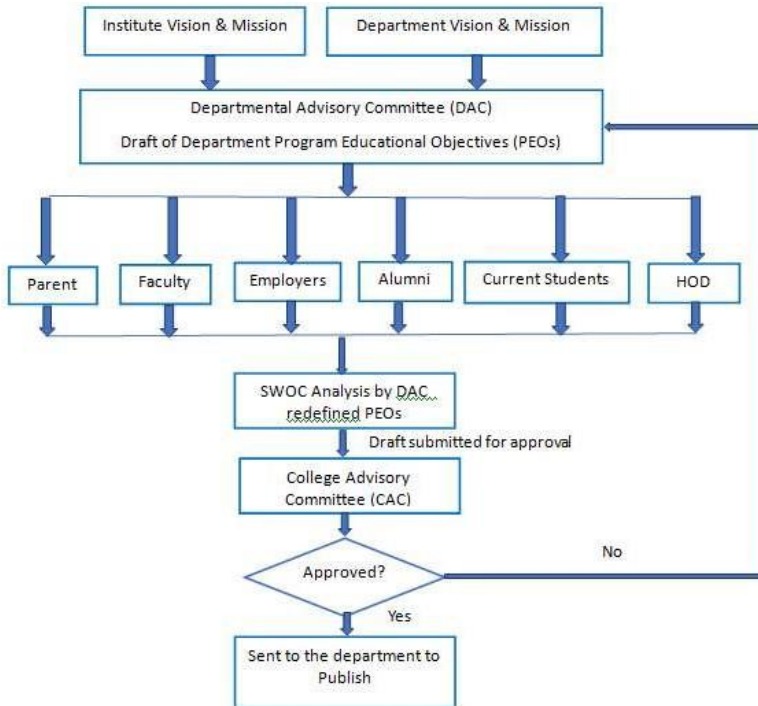
Department of Electronics and Communication Engineering

| Department of Electronics & Communication Engineering COURSE OUTCOMES | | | |
|--|-------------|-------------|--|
| Sl. No | COURSE CODE | VI Semester | DESCRIPTION |
| 1 | EC 701 EE | EC 701 EE | Understand the fundamentals of the embedded system design (20.1.1) |
| | | | Understand the Programming model and architecture of a ARM Processor (20.1.2) |
| | | | Acquire knowledge on the serial, parallel and network communication protocols (20.1.3) |
| | | | Apply the embedded system design lab work and on-chip design (20.1.4) |
| 2 | EC 702 EC | EC 702 EC | Understand the operation of various software circuits (20.2.1) |
| | | | Understand the operation of various software circuits (20.2.2) |
| | | | Understand the operation of various software circuits using CMOS technology (20.2.3) |
| | | | Understand the operation of various software circuits using CMOS technology (20.2.4) |
| 3 | EC 703 EC | EC 703 EC | Understand the operation of various software circuits (20.3.1) |
| | | | Understand the operation of various software circuits (20.3.2) |
| | | | Understand the operation of various software circuits (20.3.3) |
| | | | Understand the operation of various software circuits (20.3.4) |
| 4 | EC 704 EC | EC 704 EC | Understand the operation of various software circuits (20.4.1) |
| | | | Understand the operation of various software circuits (20.4.2) |
| | | | Understand the operation of various software circuits (20.4.3) |
| | | | Understand the operation of various software circuits (20.4.4) |
| 5 | EC 705 EC | EC 705 EC | Understand the operation of various software circuits (20.5.1) |
| | | | Understand the operation of various software circuits (20.5.2) |
| | | | Understand the operation of various software circuits (20.5.3) |
| | | | Understand the operation of various software circuits (20.5.4) |
| 6 | EC 706 EC | EC 706 EC | Understand the operation of various software circuits (20.6.1) |
| | | | Understand the operation of various software circuits (20.6.2) |
| | | | Understand the operation of various software circuits (20.6.3) |
| | | | Understand the operation of various software circuits (20.6.4) |
| 7 | EC 707 EC | EC 707 EC | Understand the operation of various software circuits (20.7.1) |
| | | | Understand the operation of various software circuits (20.7.2) |
| | | | Understand the operation of various software circuits (20.7.3) |
| | | | Understand the operation of various software circuits (20.7.4) |
| 8 | EC 708 EC | EC 708 EC | Understand the operation of various software circuits (20.8.1) |
| | | | Understand the operation of various software circuits (20.8.2) |
| | | | Understand the operation of various software circuits (20.8.3) |
| | | | Understand the operation of various software circuits (20.8.4) |
| 9 | EC 709 EC | EC 709 EC | Understand the operation of various software circuits (20.9.1) |
| | | | Understand the operation of various software circuits (20.9.2) |
| | | | Understand the operation of various software circuits (20.9.3) |
| | | | Understand the operation of various software circuits (20.9.4) |
| 10 | EC 710 EC | EC 710 EC | Understand the operation of various software circuits (20.10.1) |
| | | | Understand the operation of various software circuits (20.10.2) |
| | | | Understand the operation of various software circuits (20.10.3) |
| | | | Understand the operation of various software circuits (20.10.4) |

| Department of Electronics & Communication Engineering COURSE OUTCOMES | | | |
|--|-------------|-------------|--|
| Sl. No | COURSE CODE | VI Semester | DESCRIPTION |
| 1 | EC 701 EE | EC 701 EE | Understand the fundamentals of the embedded system design (20.1.1) |
| | | | Understand the Programming model and architecture of a ARM Processor (20.1.2) |
| | | | Acquire knowledge on the serial, parallel and network communication protocols (20.1.3) |
| | | | Apply the embedded system design lab work and on-chip design (20.1.4) |
| 2 | EC 702 EC | EC 702 EC | Understand the operation of various software circuits (20.2.1) |
| | | | Understand the operation of various software circuits (20.2.2) |
| | | | Understand the operation of various software circuits using CMOS technology (20.2.3) |
| | | | Understand the operation of various software circuits using CMOS technology (20.2.4) |
| 3 | EC 703 EC | EC 703 EC | Understand the operation of various software circuits (20.3.1) |
| | | | Understand the operation of various software circuits (20.3.2) |
| | | | Understand the operation of various software circuits (20.3.3) |
| | | | Understand the operation of various software circuits (20.3.4) |
| 4 | EC 704 EC | EC 704 EC | Understand the operation of various software circuits (20.4.1) |
| | | | Understand the operation of various software circuits (20.4.2) |
| | | | Understand the operation of various software circuits (20.4.3) |
| | | | Understand the operation of various software circuits (20.4.4) |
| 5 | EC 705 EC | EC 705 EC | Understand the operation of various software circuits (20.5.1) |
| | | | Understand the operation of various software circuits (20.5.2) |
| | | | Understand the operation of various software circuits (20.5.3) |
| | | | Understand the operation of various software circuits (20.5.4) |
| 6 | EC 706 EC | EC 706 EC | Understand the operation of various software circuits (20.6.1) |
| | | | Understand the operation of various software circuits (20.6.2) |
| | | | Understand the operation of various software circuits (20.6.3) |
| | | | Understand the operation of various software circuits (20.6.4) |
| 7 | EC 707 EE | EC 707 EE | Understand the operation of various software circuits (20.7.1) |
| | | | Understand the operation of various software circuits (20.7.2) |
| | | | Understand the operation of various software circuits (20.7.3) |
| | | | Understand the operation of various software circuits (20.7.4) |
| 8 | EC 708 EC | EC 708 EC | Understand the operation of various software circuits (20.8.1) |
| | | | Understand the operation of various software circuits (20.8.2) |
| | | | Understand the operation of various software circuits (20.8.3) |
| | | | Understand the operation of various software circuits (20.8.4) |
| 9 | EC 709 EC | EC 709 EC | Understand the operation of various software circuits (20.9.1) |
| | | | Understand the operation of various software circuits (20.9.2) |
| | | | Understand the operation of various software circuits (20.9.3) |
| | | | Understand the operation of various software circuits (20.9.4) |
| 10 | EC 710 EC | EC 710 EC | Understand the operation of various software circuits (20.10.1) |
| | | | Understand the operation of various software circuits (20.10.2) |
| | | | Understand the operation of various software circuits (20.10.3) |
| | | | Understand the operation of various software circuits (20.10.4) |

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

Department of Electronics and Communication Engineering



Process for Program Educational Objectives (PEOs)

As a result of this feedback, two major changes have been made: Approval of CAC is required for Department Vision and Mission and Program Educational Objectives (PEOs). If not approved, the Vision- Mission restructuring is done through the DAC. In the case of PEOs, a revised draft based on the CAC feedback is framed by the DAC and then the stakeholders are involved in redefining them. This process is followed by SWOC analysis and finally, submission to the CAC for approval.

Drafting, Validation, Approval and Decimation of Vision, Mission and PEOs: The department established the draft Vision and Mission through a consultative process involving the stakeholders, faculty of the department and the Department Advisory Committee through Multi-level meetings. The stakeholders include parents, faculty, employers, alumni, current students, Head of the department.

The process flow was initiated through a Department Advisory Committee (DAC) meeting for establishing the first draft of the Vision and Mission statements, with an Industry Expert, a University Expert, HOD (ECE) and senior faculty, in alignment to the Institute Vision-Mission. The statements were refined by DAC after a through brainstorming session by the stakeholders. The draft is then submitted to the College Advisory Committee (CAC) consisting of the experts from academia and industry. The document (on Department Vision-Mission) is submitted to the department for publishing upon approval. If not approved, the DAC reiterates the exercise based on the stakeholders' input in the initial stages.

The Department Vision-Mission was disseminated at various locations, during various meets like

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

Department of Electronics and Communication Engineering

Orientation Day, Parents' Meet, etc. and to all the stakeholders through post/e-mail.

The principles to establish a common foundation for developing practices that carry out the mission and vision of the department were benchmarked and validated in global context. These would govern the Program Educational Objectives (PEOs) that the graduate would achieve within 3 to 5 years after graduation. The final draft was approved and finalized by the CAC and sent to the department for publishing. The approved PEOs were disseminated to the stakeholders. In the process, if these PEOs were not approved, the exercise would be repeated after another draft based on the feedback from the CAC is prepared by the DAC. The draft is revisited in meetings including the interactions with the stakeholders before the final submission for approval to the CAC.

The consistency of the Department Mission with the Institute Mission, PEOs with Institute Mission, PEOs with Department Mission, PEOs with Program Outcomes (POs) and Program Specific Outcomes (PSOs) is identified.

The Assessment of the achievement of the PEOs through various forms of data collection and academic components is defined.

The meetings conducted at every stage are documented through the dispatch of invitation letters to the stakeholders, their approval to attend the meetings, the meeting minutes and the attendance.

PSOs:

- To apply principles of Communication engineering and Signal processing both in private and public organizations.
- To be well equipped with Management skills, interdisciplinary and modern technologies.

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

Department of Electronics and Communication Engineering

CO-PO MAPPING:

Stanley College of Engineering & Technology for Women(Autonomous)

Department of Electronics & Communication Engineering

COURSE OUTCOMES

AY:2022-23

IV Semester

| S.No | COURSE | COURSE CODE | COs | DESCRIPTION |
|------|--|-------------|------------|--|
| 1 | ANALOG ELECTRONIC CIRCUITS | SPC 401 EC | SPC401EC.1 | Analyze frequency response of Amplifiers.(BLT 4) |
| | | | SPC401EC.2 | Compare and analyse the types of feedback amplifiers.((BLT 4) |
| | | | SPC401EC.3 | Design and analyze oscillators at audio and radio frequencies. (BLT 5) |
| | | | SPC401EC.4 | Distinguish and design various classes of power amplifiers.. (BLT 4) |
| | | | SPC401EC.5 | Compare the performance of single, double and stagger tuned amplifiers. (BLT 4) |
| 2 | SIGNALS AND SYSTEMS | SPC 402 EC | SPC402EC.1 | Define and differentiate types of signals and systems in continuous and discrete time domains (BLT-1 Remember) |
| | | | SPC402EC.2 | Explain the properties of Fourier transform for continuous time signals (BLT-2 Understand) |
| | | | SPC402EC.3 | Apply continuous time Fourier Transform and Laplace Transform for analysis of system behavior. (BLT-3 Apply) |
| | | | SPC402EC.4 | Perform Fourier analysis of discrete time signals (BLT-4 Analyze) |
| | | | SPC402EC.5 | Construct Z-transforms for discrete time signals to solve difference equations (BLT-5 Create) |
| 3 | INTEGRATED CIRCUITS AND APPLICATIONS | SPC 403 EC | SPC403EC.1 | Construct different linear and non linear networks and analyse their response to different input signals |
| | | | SPC403EC.2 | Design and analyze multi vibrators and sweep circuits using transistors |
| | | | SPC403EC.3 | Analyze DC and AC characteristics for Single/Dual input Balanced/Unbalanced output configurations using BJTs |
| | | | SPC403EC.4 | Understand the applications of OPAMP |
| | | | SPC403EC.5 | Experiment with the applications of 555 timer, D/A and A/D converter types |
| 4 | COMPUTER ORGANIZATION AND ARCHITECTURE | SPC 404 EC | SPC404EC.1 | Perform mathematical operations on fixed and floating point digital data(BLT 4) |
| | | | SPC404EC.2 | Illustrate the operation of a digital computer. (BLT 2) |
| | | | SPC404EC.3 | Understand I/O interfacing of a computer. (BLT 1) |
| | | | SPC404EC.4 | Interface microprocessor with memory devices. (BLT 4) |
| | | | SPC404EC.5 | Understand latest trends in microprocessors. (BLT 4) |
| | | | SPC405EC.1 | Understand the basic principles of antennas and learn the antenna terminology. (BLT 2) |


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Department of Electronics and Communication Engineering

| Stanley College of Engineering & Technology for Women(Autonomous) | | | | | | | | | | | | | | | | | | |
|---|--|------------|------------|------|------|------|------|------|------|------|-----|------|------|-----|------|------|------|------|
| Department of Electronics & Communication Engineering | | | | | | | | | | | | | | | | | | |
| PROGRAM OUTCOMES | | | | | | | | | | | | | | | | | | |
| AY :2022-23 | | | | | | | | | | | | | | | | | | |
| IV Semester | | | | | | | | | | | | | | | | | | |
| S.N | COURSE | COURSE | SNO | PO1 | PO2 | PO3 | PO | PO | PO | PO | PO8 | PO9 | PO10 | PO1 | PO12 | PSO1 | PSO | |
| 1 | ANALOG ELECTRONIC CIRCUITS | SPC 401 EC | PC401EC.1 | 3 | 3 | 3 | | 3 | | | | | | | | 2 | 3 | |
| | | | PC401EC.2 | 3 | 3 | 3 | | 3 | | | | | | | | | 2 | 3 |
| | | | PC401EC.3 | 3 | 3 | 3 | | 3 | | | | | | | | | 3 | 3 |
| | | | PC401EC.4 | 3 | 3 | 3 | 2 | 3 | | | | | | | | | 2 | 3 |
| | | | PC401EC.5 | 3 | 3 | 3 | 2 | 3 | | | | | | | | | 2 | 3 |
| | | | AVG | 3.00 | 3.00 | 3.00 | 2.00 | 3.00 | | | | | | | | | | 2.20 |
| 2 | SIGNALS AND SYSTEMS | SPC 402 EC | SPC402EC.1 | 3 | 3 | | | 1 | | | | | | | 2 | 2 | 3 | |
| | | | SPC402EC.2 | 3 | 3 | 3 | 3 | 1 | | | | | | | 2 | 2 | 3 | |
| | | | SPC402EC.3 | 3 | 3 | 3 | 3 | 3 | | | | 1 | | | 1 | 2 | 3 | |
| | | | SPC402EC.4 | 3 | 3 | 3 | 3 | 3 | | | | 1 | | | 1 | 2 | 3 | |
| | | | SPC402EC.5 | 3 | 3 | 3 | 3 | 3 | | | | 1 | | | 2 | 2 | 3 | |
| | | | AVG | 3.00 | 3.00 | 3.00 | 3.00 | 2.20 | | | | 1.00 | | | | 1.60 | 2.00 | 3.00 |
| 3 | INTEGRATED CIRCUITS AND APPLICATIONS | SPC 403 EC | SPC403EC.1 | 3 | 3 | | 2 | | | | | | | | | 3 | | |
| | | | SPC403EC.2 | 3 | 3 | 3 | 2 | | | | | | | | | 3 | | |
| | | | SPC403EC.3 | 3 | 3 | 3 | 3 | | | | | | | | | 3 | | |
| | | | SPC403EC.4 | 3 | 1 | 3 | | | | | | | | | 2 | 3 | | |
| | | | SPC403EC.5 | 3 | | 2 | 2 | | | | | | | | 3 | 3 | | |
| | | | AVG | 3.00 | 2.00 | 2.20 | 1.80 | | | | | | | | | 1.00 | 3.00 | |
| 4 | COMPUTER ORGANIZATION AND ARCHITECTURE | SPC 404 EC | SPC404EC.1 | 3 | 3 | 3 | 3 | | 3 | 3 | | | | | 3 | 3 | 3 | |
| | | | SPC404EC.2 | 3 | 3 | 3 | 3 | | 3 | 3 | | | | | 3 | 3 | 3 | |
| | | | SPC404EC.3 | 3 | 3 | 3 | 3 | | 3 | 3 | | | | | 3 | 3 | 3 | |
| | | | SPC404EC.4 | 3 | 3 | 3 | 3 | | 3 | 3 | | | | | 3 | 3 | 3 | |
| | | | SPC404EC.5 | 3 | 3 | 3 | 3 | | 3 | 3 | | | | | 3 | 3 | 3 | |
| | | | AVG | 3.00 | 3.00 | 3.00 | 3.00 | | 3.00 | 3.00 | | | | | | 3.00 | 3.00 | 3.00 |

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

Department of Electronics and Communication Engineering



STANLEY

COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
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(All eligible UG courses are accredited by NBA & NAAC with 'A' grade)
Affiliated to O.P.J.S. University and Approved by AICTE

B.E (ECE) III Sem Internal Examination- III, A.Y- 2022-23
Electronic Devices and Circuits (SPC301EC)

Time: 1 Hour 15 Min Date: 27th December , 2022 Max Marks: 25

Part – A

(Answer all Questions) (5*2= 10 Marks)

1. Distinguish between drift and diffusion currents. [2M]
2. Compare half wave, Full wave center tapped and bridge rectifier? [2M]
3. Define is thermal run away? Specify the conditions to prevent thermal runaway? [2M]
4. Draw an approximate model for Common Base Configuration. [2M]
5. Differentiate between BJT and JFET. [2M]

Part – B

(Answer any three out of four Questions) (3*5= 15 Marks)

1. In a bridge rectifier the transformer is connected to 220V, 60Hz mains and the turns ratio of the step down transformer is 5:1. Assuming the diode to be ideal and load resistance to be $1k\Omega$, calculate: [5M]
i) I_{DC} ii) V_{DC} iii) I_{rms} iv) P_{AV} v) Ripple factor
2. Sketch the input and output characteristics in CE configuration, mark different operating regions on it and define h-parameters. [5M]
3. A junction transistor amplifier has the following h-parameters $h_{ie} = 1000\Omega$, $h_{re} = 2 \times 10^{-4}$, $h_{fe} = 100$, $h_{oe} = 25\mu A/V$. Determine the A_i , A_v , Z_i , Z_o , A_{vs} , A_{is} , Z_{is} , and Z_{os} of the CE amplifier using exact analysis. Take load resistance R_L as $1K\Omega$, source resistance as 600Ω . [5M]
4. Illustrate the operation of n – channel JFET? Draw the drain and transfer characteristics. [5M]

Blooms Taxonomy & CO, PO Mapping

| Question | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 |
|------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------|--------------------------------|
| Course Outcome No | SPC301EC.1 | SPC301EC.2 | SPC301EC.3 | SPC301EC.4 | SPC301EC.5 | SPC301EC.2 | SPC301EC.3 | SPC301EC.4 | SPC301EC.5 |
| PO Mapping | PO 1,2,3,4,6,8,9,12 PSO 1,2 | PO 1,2,3,4,6,8,9,12 PSO 1,2 | PO 1,2,3,4,6,7,8,9,12 PSO 1,2 | PO 1,2,3,4,6,8,9,12 PSO 1,2 | PO 1,2,3,4,6,8,9,12 PSO 1,2 | PO 1,2,3,4,6,8,9,12 PSO 1,2 | PO 1,2,3,4,6,7,8,9,12 PSO 1,2 | PO 1,2,3,4,6,8,9,12 PSO 1,2 | PO 1,2,3,4,6,8,9,12 PSO 1,2 |
| Bloom's Taxonomy Level | Understanding (BLT2) | Understanding (BLT2) | Understanding (BLT2) | Knowledge (BLT1) | Application (BLT 3) | Analyzing (BLT 4) | Application (BLT 3) | Application (BLT 3) | Application (BLT 3) |

Paper Set by: Mrs. T. Prasanna

(Signature)
20/11/22

2.6.1 The institution has stated learning outcomes (programme and course outcome) /graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution

Department of Electronics and Communication Engineering

Scheme of Instruction & Detailed Syllabus

| Course Code | Course Title | | | | | Core / Elective | |
|--------------|---------------------------------|---|---|---|-----|-----------------|---------|
| SPC301EC | Electronic Devices and Circuits | | | | | Core | |
| Prerequisite | Contact hours per week | | | | CIE | SEE | Credits |
| | L | T | D | P | | | |
| - | 3 | - | - | - | 40 | 60 | 3 |

Course Objectives:

1. To familiarize basic concepts of semiconductor devices.
2. To comprehend the applications of diodes as rectifiers and filters.
3. To give insights of V-I characteristics of BJT configurations.
4. To comprehend amplifier configurations using h-parameter model.
5. To illustrate V-I characteristics of FETs and MOSFETs and their applications.

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

1. Interpret the characteristics of diodes using models for analysis of various applications.
2. Compare performance characteristics of various filters.
3. Discriminate the BJT configurations and design a stable biasing circuit.
4. Analyse and design BJT amplifiers.
5. Distinguish the operations of FETs & MOSFETs.

UNIT-I:

Basics of Semiconductors: Review of semiconductors and their properties, Poisson and continuity equations, Hall Effect, Fermi level in P- and N-type semiconductors.

Junction Diode : PN Junction formation, Characteristics, biasing- band diagrams and current flow, Diode current equation, Diode as a circuit element, small signal diode models, Diode switching characteristics, effect of temperature on diode characteristics, Breakdown mechanisms in diodes, Zener Diodes and Zener voltage regulator.

UNIT-II

PN Diode Applications: Half wave, Full wave and Bridge rectifiers - their operation, performance characteristics, and analysis; Filters-L, C, LC and CLC filters, used in power supplies with FWR and their ripple factor calculations, design of Rectifiers with and without Filters.

COURSE OUTCOMES:

| SNO | DESCRIPTION | PO(1..12) MAPPING | PSO(1..3) MAPPING |
|------------|---|----------------------|----------------------|
| SBS101MT.1 | Find the nature of series and sequences (Evaluate). | PO1,PO2,PO3,PO4,PO12 | PSO1,PSO2 |
| SBS101MT.2 | Analyze the consequences of the mean value Theorems for differentiable functions and Evaluate the Curvature (Analyze). | PO1,PO2,PO3,PO4,PO12 | PSO1,PSO2 |
| SBS101MT.3 | To explore the idea for finding the extreme values of Multi variable functions (Knowledge). | PO1,PO2,PO3,PO4,PO12 | PSO1,PSO2 |
| SBS101MT.4 | Understanding the concepts of vector and scalar fields and applying the concepts to solve the problems on Green's, Gauss and Stroke's (Understand). | PO1,PO2,PO3,PO4,PO12 | PSO1,PSO2 |
| SBS101MT.5 | Solve the engineering problems using Numerical methods (Application.) | PO1,PO2,PO3,PO4,PO12 | PSO1,PSO2 |

COURSE OUTCOMES VS POs MAPPING (DETAILED; HIGH:3; MEDIUM:2; LOW:1):

| SNO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|---|
| SBS101MT.1 | 3 | 3 | 2 | 2 | | | | | | | | | 2 | 3 | 1 |
| SBS101MT.2 | 3 | 3 | 2 | 2 | | | | | | | | | 2 | 3 | 1 |
| SBS101MT.3 | 3 | 3 | 2 | 2 | | | | | | | | | 2 | 3 | 1 |
| SBS101MT.4 | 3 | 3 | 2 | 2 | | | | | | | | | 2 | 3 | 1 |
| SBS101MT.5 | 3 | 3 | 2 | 2 | | | | | | | | | 2 | 3 | 1 |

* For Entire Course, PO & PSO Mapping

Note: Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low)

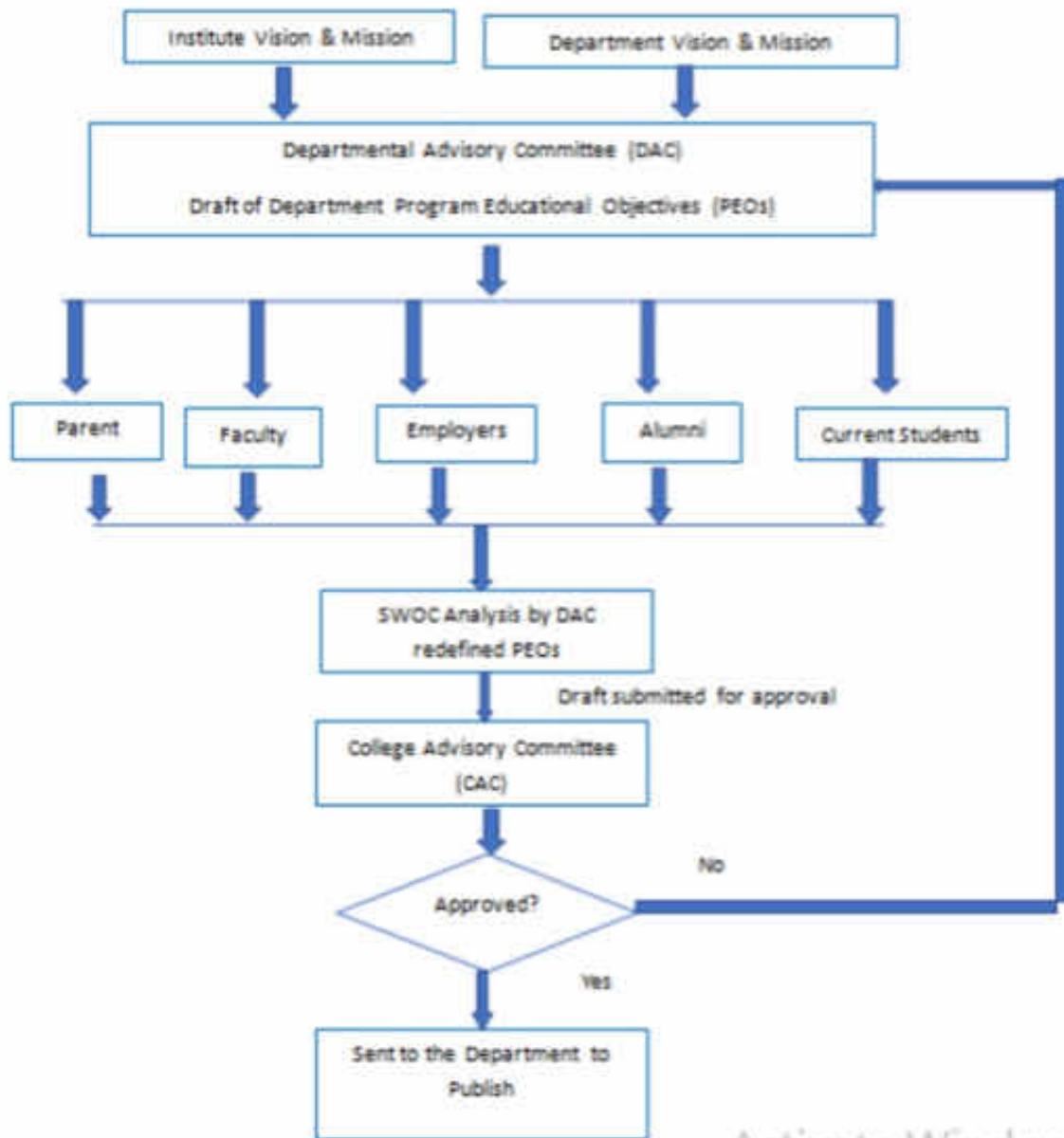
2: Moderate (Medium)

3:

Substantial (High)

Programme Outcomes:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics and natural sciences and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment & sustainability:** Understand the impact of professional engineering solutions in societal and environmental context, and demonstrate knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.



Activate Windows

Flow Chart of process for defining PEO's of the IT - department

1. **PSO1:** Acquire skills to design, analyze and implement algorithms using high-level programming languages.
2. **PSO2:** Contribute their engineering skills in information technology domains like operating systems, network design and web designing, database design, information security and cloud computing.
3. **PSO3:** An ability to design and implement knowledge-based discovery and machine learning by oncepts of mathematical models, digital system design, neural networks, internet of things

9. **Individual and Teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long Learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes:

PSO1: To instill interest and curiosity in students in the field of AI and Data Science through project based learning.

PSO2: To provide a concrete foundation and enrich their abilities to qualify for Employment, Higher studies and pursue Research in Artificial Intelligence and Data science with ethical values.

PSO3: To promote ethical and responsible AI practices for the benefit of humanity; and to harness AI for a positive societal impact & meet global standards.

Program Educational Objectives:

- PEO1:** To provide graduates with the proficiency to utilize the fundamental knowledge of basic sciences, mathematics, artificial intelligence, data science and statistics to build systems that require management and analysis of large volume of data.
- PEO2:** To enrich graduates with necessary technical skills to pursue pioneering research in the field of AI
- PEO3:** To encourage students to think critically, develop innovative skills, expose them to an array of ideas and information through numerous technical events, hackathons and quality internships.



**Department of Computer Science and
Engineering**

Program Outcomes:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment & sustainability:** Understand the impact of professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes:

1. **PSO1:** Acquire skills to design, analyze and implement algorithms using high-level programming languages.
2. **PSO2:** Contribute their engineering skills in information technology domains like operating systems, network design and web designing, database design, information security and cloud computing.
3. **PSO3:** An ability to design and implement knowledge-based discovery and machine learning by using the various concepts of mathematical models, digital system design, neural networks, internet of things.



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B.E (IT-A,B) I Sem Internal Examination- I,

January 2022

SET-1

Chemistry (SBS904CH)

[1.15 Hour]

[Max Marks: 25]

Part – A (5*2= 10 Marks)

(All Questions are compulsory)

1. Define Reverse osmosis and mention any one example? (2 M)
2. What is Pilling Bedworth rule and write its importance? (2 M)
3. Write any Five specifications of Potable water? (2 M)
4. Write the chemical reactions and Applications of Li ion Batteries? (2 M)
5. Define Fuel Cell? Give any two Examples? (2 M)

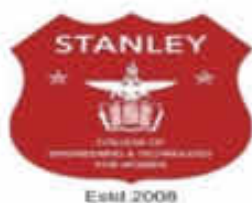
Part – B (3*5= 15 Marks)

(Three out of four have to be Answered)

6. Explain the Process of Determination of Temporary, Permanent and Total Hardness of water by Using EDTA method? (5M)
7. Define Hot dipping? Explain the method of Galvanisation with relevant diagram? (5M)
8. a) Calculate the permanent hardness of a given sample of water from the following data. A 250 ml of water sample is boiled and filtered. The filtrate is made upto 250 ml with distilled water. 50 ml of this water requires 3 ml of EDTA solution of N/50 Normality with Basic buffer and EBT indicator.
b) Calculate single electrode potential for copper metal in contact with 0.15M Cu^{+2} solution. E^0 for copper is 0.34V. ($R=8.314\text{JK}^{-1}\text{mol}^{-1}$, $T=298\text{K}$). (5M)
9. Derive the Nernst Equation and write its Applications? (5M)

| Q. No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------|-----|-------|---------|---------|---------|---------|-------|---------|----------|
| COs | CO1 | CO2 | CO2 | CO1 | CO1,2 | CO2 | CO2 | CO1,CO2 | CO1 |
| POs | PO1 | PO1,2 | PO1,2,4 | PO1,3,5 | PO1,2,5 | PO1,5,6 | PO1,2 | PO1,2,3 | PO1,2,6, |
| BT | | | | | | | | | |

Paper set by: R.Gangadhara, Asst. Professor of Chemistry



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B.E (IT) I Sem Internal Examination- II,(02-03-2023)

SET-1

Chemistry

(SBS903CH)

[1.15 Hour]

[Max Marks: 25]

Part – A (5*2= 10 Marks)

(All Question are compulsory)

1. Write any four Applications of Conducting polymers? (2M)
2. Discuss the preparation and properties of PET(Poly Ethylene Terephthalate)? (2M)
3. Define Octane and Cetane Number ? (2M)
4. Define quantum dots and write any four Applications? (2M)
5. Calculate Gross and Net Calorific values of Coal having compositions C =80%,H =7%,O =3%,S=3.5%,N=2.1% and Ash=4%. (2M)

Part – B (3*5= 15 Marks)

(Three out of four have to be Answered)

- 6.Explain the Energy Level Diagram of Oxygen Molecule? (5M)
- 7.Write Preparation, Properties and Uses of Bakelite? (5M)
- 8.Explain Proximate analysis of Coal and write its Significance? (5M)
- 9.Explain Briefly about twelve Principles of Green Chemistry? (5M)

| Q. No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------|-------------|-----------|-----------|-------------|----------|-----------|-----------|----------|-----------|
| Cos | CO3 | CO3 | CO4 | CO5 | CO4 | CO3 | CO3 | CO4 | CO5 |
| Pos | PO1 | PO1,2 | PO1,2,4 | PO1,3,5 | PO1,2,5 | PO1,5,6 | PO1,2 | PO1,2,3 | PO1,2,6, |
| BT | Application | knowledge | knowledge | Application | Analysis | knowledge | knowledge | Analysis | Knowledge |

Prepared by

Md.Sajeeda

MATHEMATICS-I

COURSE HANDOUT

SUBJECT CODE:
SBS101 MT

Year:2021-2022

Duration of University

Examination:

3 Hours

University Examination:

60 Marks

Sessionals:

40 Marks

Instruction

period:

3+1 (Tutorial) hours/Week

Course

Objective:

- To introduce the concepts of sequences, series and their properties
- To provide the knowledge of curve sketching
- To introduce the concepts of functions of several variables
- To study vector differential and Integral calculus
- To provide the overview of engineering problems using Numerical methods

Course Outcomes:

SBS101 MT .1 To examine the convergence or divergence of a given infinite series

SBS101 MT .2 To Evaluate the Radius of curvature, center, evaluate and envelope.

SBS101 MT.3 To explore the idea for finding the extreme values of functions

SBS101 MT .4 Apply fundamental theorems like Green's theorem, Stokes theorem and Gauss Divergence to evaluate Integrals.

SBS101 MT .5 To provide the overview of engineering problems using Numerical methods