



St. JOSEPH'S DEGREE & PG COLLEGE

(A Catholic Christian Minority **Co-Education** Institution, Managed by HAES)

An **AUTONOMOUS** College - Affiliated to Osmania University

Re-Accredited by NAAC with 'A' Grade with CGPA of 3.49

DEPARTMENT OF SCIENCE

Course Structure for B.Sc. (MECs)

COURSE OBJECTIVES:

- To enhance the students reasoning, analytical and problem solving skills
- To identify and solve significant problems across a broad range of application areas.
- To help students gain the ability to analyze and design electronic circuits & electronic appliances
- To enable the identification of new computing trends and understanding of emerging technologies

I Year

SEMESTER - I	SEMESTER - II
Maths-I: Differential Calculus Theory	Maths-II: Differential Equations Theory
Maths-I: Differential Calculus Practical	Maths-II: Differential Equations Practical
Electronics-I: Circuit Analysis Theory	Electronics-II: Electronic Devices & Circuits Theory
Electronics-I: Circuit Analysis Practical	Electronics-II: Electronic Devices & Circuits Practical
Computer Science-I: Object Oriented Programming using C++ Theory	Computer Science-II: Data Structures and fileprocessing Theory
Computer Science-I: Object Oriented Programming using C++ Practical	Computer Science-II: Data Structures and fileprocessing Practical
Human Values and Professional Ethics	Indian Heritage and Culture
English - I	English - II
Second Language	Second Language

II Year

SEMESTER - III	SEMESTER - IV
Maths-III: Real Analysis Theory	Maths-IV: Algebra Theory
Maths-III: Real Analysis Practical	Maths-IV: Algebra Practical
Electronics-III: Analog Circuit Theory	Electronics-IV: Linear Integrated Circuits & Basic Communication Electronics Theory
Electronics-III: Analog Circuit Practical	Electronics-IV: Linear Integrated Circuits & Basic Communication Electronics Practical
Computer Science-III: Computer Networks Theory	Computer Science-IV: Modern Database Management System Theory
Computer Science-III: Computer Networks Practical	Computer Science-IV: Modern Database Management System Practical
Skill Enhancement Course: HTML	Skill Enhancement Course: 1. Vector Calculus
SciLab	2. Linear Programming
English - III	English - IV
Second Language	Second Language

III Year

SEMESTER - V	SEMESTER - VI
Maths-V: Linear Algebra Theory	Maths-VII: Numerical Analysis Theory
Maths-V: Linear Algebra Practical	Maths-VII: Numerical Analysis Practical
Maths-VI: (Elective) Theory 1. Integral Calculus 2. Complex Analysis	Maths-VIII: (Elective) Theory 1. Solid Geometry 2. Number Theory
Maths-VI: (Elective) Practical 1. Integral Calculus 2. Complex Analysis	Maths-VIII: (Elective) Practical 1. Solid Geometry 2. Number Theory
Electronics-V: Digital Electronics Theory	Electronics-VII: Digital Communication Theory
Electronics-V: Digital Electronics Practical	Electronics-VII: Digital Communication Practical
Electronics-VI: (Elective) 1. 8051 Microcontroller Theory 2. Lasers & Fibre Optic Communication Theory 3. Microprocessor 8086 Theory.	Electronics-VIII: (Elective) Theory 1. Digital Design Using VHDL 2. AVR Microcontroller 3. Basic VLSI Design
Electronics-VI: (Elective) 1. 8051 Microcontroller Practical 2. Lasers & Fibre Optic Communication Practical 3. Microprocessor 8086 Theory.	Electronics-VIII: (Elective) Practical 1. Digital Design Using VHDL 2. AVR Microcontroller 3. Basic VLSI Design
Computer Science-V: System Analysis and Design Theory	Computer Science-VII: Programming in Java Theory
Computer Science-V: System Analysis and Design Practical	Computer Science-VII: Programming in Java Practical
Computer Science-VI: (Elective) 1. PHP with MySQL Theory 2. Operating System Theory 3. Programming in Python Theory	Computer Science-VIII: (Elective) 1. Data Analytics with R Theory 2. GUI Programming Theory 3. Web Technologies Theory
Computer Science-VI: (Elective) 1. PHP with MySQL Practical 2. Operating System Practical 3. Programming in Python Practical	Computer Science-VIII: (Elective) 1. R Programming Practical 2. GUI Programming Practical 3. Web Technologies Practical
Skill Enhancement Course 1. Basic Arduino Programming 2. Fundamentals of Robotics 3. Basics of PCB Design	Project (Mathematics/Electronics/Computer Science)

ELIGIBILITY CRITERIA:

- 0000

SCOPE FOR HIGHER STUDIES / CAREER OPTIONS:

- **Higher Studies:** 000
- **Career Options:** 000