



BACHELOR OF BIOMEDICAL INSTRUMENTATION

In Association With Shri Vithalrao Joshi Charities Trust's
Samarth Educational Institute (SVJCT's, SEI)



DURATION: THREE YEARS FULL TIME (6 SEMESTERS)

ELIGIBILITY: H.S.C. science subjects- Physics, Chemistry, Mathematics (PCM) / Physics, Chemistry, Biology (PCB)/PCMB/vocational electronics or IT at F.Y.J.C. & S.Y.J.C.

ADMISSION PROCEDURE: WRITTEN TEST FOLLOWED BY AN INTERVIEW

OBJECTIVE:

- To prepare the students for taking responsibility of procuring new equipment, finding resources.
- To prepare the students for installation and commissioning & everyday reporting and documentation.

JOB OPPORTUNITIES:

- Laboratory instrument technical assistant
- Technology manager
- Laboratory manager
- Research associate
- Medical record technician
- Laboratory assistant

COURSE CONTENTS:

SEMESTER 1

- Foundation course – I
- Chemical Science – I
- Physical Science – I
- Biological Science – I
- Mathematical Science – I
- Computer Science – I
- Analog Devices and Circuits
- Physical Sc. And Mathematical Sc, Practical
- Biological Sc and Chemical Sc Practical
- Computer Sc. And Instrumentation Sc. Practical

SEMESTER 2

- Foundation course – II
- Chemical Science – II
- Physical Science – II
- Biological Science – II
- Mathematical Science – II
- Computer Science – II
- Sensors and transducers
- Physical Sc. And Mathematical Sc. Practical
- Biological Sc and Chemical Sc, Practical
- Computer Sc. And Instrumentation Sc. Practical

SEMESTER 3

- Foundation course – III
- Chemical Science – III (BioMaterials-I)
- Physical Science – III (Medical Biophysics)
- Biological Science – III (Anatomy-II)
- Mathematical Science – III
- Computer Science – III (Concepts of Networking and OS)
- Operational Amplifiers
- Physical Sc. And Mathematical Sc. Practical
- Biological Sc and Chemical Sc, Practical
- Computer Sc. And Instrumentation Sc. Practical

SEMESTER 4

- Foundation course – IV
- Chemical Science – IV (BioMaterials-II)
- Physical Science – IV (Photonics in Biomedical instruments)
- Biological Science – IV (Physiology-II)
- Mathematical Science – IV (BioStatistics)
- Computer Science – IV (Biomedical Image Analysis)
- Power Electronics
- Physical Sc. And Mathematical Sc. Practical
- Biological Sc and Chemical Sc. Practical
- Computer Sc. And Instrumentation Sc. Practical

SEMESTER 5

- Medical Instrumentation For Vital signs
- Principles of Diagnostic and therapeutic equipments-I
- Instrumentation of Imaging techniques-I
- X-Ray Techniques-I
- Embedded systems in medicine
- Fundamentals of troubleshooting techniques
- General Proficiency
- Project Like experiments I
- Project Like experiments II
- Project Like experiments III

SEMESTER 6

- Robotics and Automation in Biomedical Instrumentation
- Principles of Diagnostic and therapeutic equipments-II
- Instrumentation of Imaging Techniques-II
- X-Ray Techniques-II
- Instrumentation of Artificial Organs
- Wireless communication assisted Medical Instrumentation
- Reliability and Quality Control techniques
- **Activities:** Project, Field Visits, Short term internship, Seminar, Group discussions



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