

ATHEENAPANDIAN'S



INTERNATIONAL CERTIFICATE COURSE

Certificate Course on Biomedical Technician

COURSE

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biomedical
technician with
hands-on training.

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CERTIFICATE COURSE ON BIOMEDICAL TECHNICIAN

Course Name: BIOMEDICAL TECHNICIAN

Course Duration: 30 Hours

Course Eligibility:

- This course is eligibility for Students, Faculty, Biomedical Professionals and Other Professional.

Course Fee: Rs 999/11.9 USD

Course Objectives:

- Understand the Fundamentals of Biomedical Engineering
- Gain Knowledge of Electrical & Electronic Principles in Medical Devices
- To get knowledge about Biomedical Instrumentation and Sensors
- Explore Biomaterials and Their Applications:
- Understand Drug Delivery Systems and Nanomedicine
- Learn the Basics of Tissue Engineering and Regenerative Medicine
- Explore Biomedical Data and Digital Health
- Ensure Understanding of Regulatory Compliance and Quality Control
- Explore Emerging Technologies in Biomedical Engineering

Course Benefits:

- Comprehensive Foundation in Biomedical Engineering
- Deep Understanding Concept of biomedical engineering
- Get Knowledge about biomedical recent technology and its applications
- Understanding of Regulatory and Quality Control Standards
- Career Advancement Opportunities

Course Coverage:

1. Introduction to Biomedical Equipment

- Overview of Biomedical Engineering
- Key areas of biomedical engineering
- Roles and responsibilities of a Biomedical Technician
- Ethics and regulations in biomedical practice
- Types of biomedical equipment used in hospitals
- Career opportunities and industry trend

2. Electrical & Electronic Principles for Medical Devices

- Basic electrical circuits and components
- Troubleshooting techniques for electronic components
- Electrical safety standards and best practices in a hospital setting

3. Biomedical Instrumentation and Sensors

- Sensors in Biomedical Devices: Types of sensors (pressure, temperature, optical, biosensors) used in diagnostics and monitoring.
- Signal Processing and Instrumentation: Principles of data acquisition, filtering, and analysis in biomedical systems.
- Wearable and Portable Medical Devices: Trends in miniaturization and IoT-based healthcare monitoring.

4. Biomaterials

- Introduction to biomaterials
- Types of biomaterials (metals, polymers, ceramics, composites)
- Applications in medical devices, implants, and tissue engineering

5. Tissue Engineering and Regenerative Medicine

- Basics of tissue engineering and scaffold design
- Cell culture techniques
- 3D bioprinting of tissues

6. Drug Delivery Systems

- Controlled and targeted drug delivery methods
- Nanomedicine and nanoparticles for drug delivery
- Hydrogels, microchips, and implantable devices
- Applications in cancer therapy and chronic disease management.

Certificate Course on Biomedical Technician			
S.No	Date	Day	Topics
1	11/4/2024	Monday	Objectives: Understand the Basics of Biomedical Engineering (2 hours)
			Introduction to Biomedical Equipment -
			Overview of Biomedical Engineering
			Key areas of biomedical engineering
			Roles and responsibilities of a Biomedical Technician
			Activities: Analyze real-life scenarios where biomedical engineers/technicians resolved equipment failures.
			Assesments: Mcq Test through online
2	11/5/2024	Tuesday	Objectives: Explore Biomedical Equipment (2 hours)
			Ethics and regulations in biomedical practice
			Types of biomedical equipment used in hospitals
			Career opportunities and industry trends
			Activities: Facilitate discussions on the evolution of biomedical engineering and its impact on patient care.
			Assesments: Quiz competition
			Objectives: Explore Electronic components (2 hours)
3	11/6/2024	Wednesday	Basic Electrical and Electronics circuits and components
			Electrical & Electronic Principles for Medical Devices
			Activities: Facilitate discussions on Definition and understanding the basics.
			Assesments: Mcq Test through online
			Objectives: Practices on Hospital setting (2 hours)
4	11/7/2024	Thursday	Troubleshooting techniques for electronic components
			Electrical safety standards
			Best practices in a hospital setting
			Activities: Recognize various types of biomedical equipment and their applications
			Assesments: Quiz competition
			Objectives: Understanding Instrumental view behind the systems (2 hours)
5	11/8/2024	Friday	Biomedical Instrumentation and Sensors-Sensors in Biomedical Devices
			Types of sensors (pressure, temperature, optical, biosensors) used in diagnostics and monitoring
			Signal Processing and Instrumentation
			Principles of data acquisition, filtering, and analysis in biomedical systems
			Activities: Analyze real-life scenarios where biomedical engineers/technicians resolved equipment failures
			Assesments: Mcq Test through online
			Objectives: Explore Wearable medical devices (2 hours)
6	11/11/2024	Monday	Wearable and Portable Medical Devices:
			Trends in miniaturization and IoT-based healthcare monitoring
			Activities: Analyze real-life scenarios where biomedical engineers/technicians resolved equipment failures
			Assesments: Quiz competition
			Objectives: Explore Wearable medical devices (2 hours)
7	11/12/2024	Tuesday	Introduction to biomaterials
			Types of biomaterials (metals, polymers, ceramics, composites)
			Activities: Analyze real-life scenarios, how the Biomaterials play an vital role in Healthcare market
			Assesments: Mcq Test through online
			Objectives: Explore Wearable medical devices (2 hours)

8	11/13/2024	Wednesday	Objectives: Explore Wearable medical devices (2 hours)
			Applications in medical devices
			Implants
			Tissue engineering
			Activities: Gaining the industrial Tissue engineering market upgradation and its overview
			Assesments: Mcq Test through online
9	11/14/2024	Thursday	Objectives: Explore Wearable medical devices (2 hours)
			Basics of Tissue Engineering
			Scaffold design
			Regenerative Medicine
			Cell culture techniques
			Activities: Analyze real-life scenarios, how the Biomaterials play an vital role in Healthcare market
10	11/15/2024	Friday	Objectives: Overview behind Industrial 3D Bioprinting (2 hours)
			3D Bioprinting of Tissues
			Activities: Get an industrial updates and technical updations behind current and future innovations
			Assesments: Mcq Test through online
11	11/18/2024	Monday	Objectives: Get an industrial behind Drug delivery devices (2 hours)
			Drug Delivery Systems
			Controlled and targeted drug delivery method
			Nanomedicine and nanoparticles for drug delivery
			Activities: Analyze real-life scenarios, how the Biomaterials play an vital role in Healthcare market
12	11/19/2024	Tuesday	Objectives: Overview of Advanced implantable devices (2 hours)
			Hydrogels, microchips, and implantable devices-
			Applications in cancer therapy and chronic disease management
			Activities: Analyze real-life scenarios, how the Biomaterials play an vital role in Healthcare market
			Assesments: Mcq Test through online
13	11/20/2024	Wednesday	Objectives: Learn and update on Biomedical Data analysis (2 hours)
			Biomedical Data and Digital Health
			Basics of biomedical data analysis
			Data security and patient privacy in healthcare
			Telemedicine and remote monitoring
			Activities: Analyze real-life scenarios, how the Biomedical data analysis works
			Assesments: Quiz competition

14	11/21/2024	Thursday	Objectives: Medical Device Industrial ethics on Regulatory Compliance (2 hours)
			Regulatory Compliance & Quality Control in Healthcare
			Introduction to FDA, CE Marking
			ISO standards for medical devices
			Quality control measures for biomedical equipment
			Legal and ethical considerations in biomedical equipment management
			Activities: Discussions on current Regulatory standards and market approvals for Medical device
			Assesments: Mcq Test through online
15	11/22/2024	Friday	Objectives: Medical Device Industrial ethics on Regulatory Compliance (2 hours)
			Emerging Technologies in Biomedical Engineering
			Innovations in biomedical engineering
			Future trends and challenges in healthcare technology
			Organ-on-chip
			CRISPR, and gene editing
			Activities: Get an industrial knowledge on current and future trends
			Assesments: Final Assessment test