



Yashwantrao Chavan College of Science, Karad

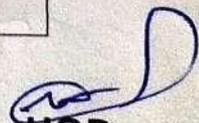
Department of Electronics

Student Seminar -B.Sc.III

Academic Year - 2024-25

INDEX

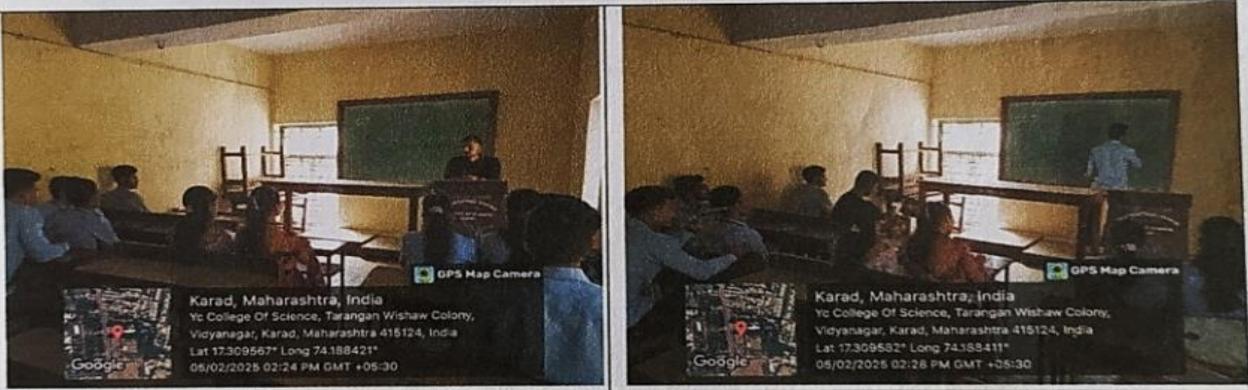
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HOD

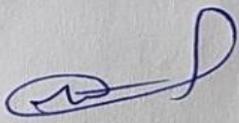
Head
Department of Electronics
Yashwantrao Chavan College Of Science, Karad

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

ACTIVITY REPORT

Name of the Department: Electronics		Academic Year – 2024-25 Date :- 14/3/2024
Name of the activity	B.Sc. III Electronics Students Seminar	
Purpose of Program	To impose presentation skill in a student. To impose stage daring in a student.	
No. of Students Participated	12	
No. of Teachers Participated	02	
Program outcomes	1) Personality development: stage daring, presentation skill, communication skill, explanation ability, courage etc. 2) Developing leadership skill. 3) A well trained students.	
Program Photo		


Teacher In charge


Signature
Head of the Department
Head
Department of Electronics
Yashwantrao Chavan College of Science,
Karad


Signature
Principal
Yashwantrao Chavan College of Science,
Karad





Yashwantrao Chavan College of Science, Karad

Department of Electronics

Student Seminar 2024-25

Class: -B.Sc.III

Notice

Date : 8/03/2024

All students of the B.Sc. III class are informed that, a student seminar is arranged on 14/03/2024 at 12:00 pm. It is compulsory for all students. All should note and follow.



Head
Department of Electronics
Yashwantrao Chavan College Of Science, Karad

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE KARAD

DEPARTMENT OF ELECTRONICS

Seminar Report List

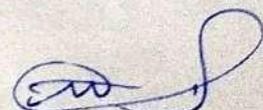
B.Sc.III

Academic Year 2024 -25



Sr.No.	Name of student	Seminar Title
1.	Ghadge Shivaji Satish	5G Technology
2.	Kashid Dhanashri Gurunath	Biomedical electronics
3.	Nande Vishwajeet Abaso	Electronics Skin
4.	Pawar Anjali Ganpat	Electronics Nose
5.	Pisal Siddhesh Dipak	Wi MAX Technology
6.	Ram Prashant Kumar Sunil	Solar Tree
7.	Reur Sufian Mohammad	Li-Fi Technology
8.	Mali Omkar Mahadev	Wireless Charging
9.	Thorat Rohan Dadaso	AI Technology
10.	Yadav Suraj Arun	Arduino
11.	Chavan Harsad Subhash	Li-Fi
12.	Mulik Akshay Eknath	WiGig (wireless Gigabit)
13.	Dabade Sumedh Pandurang	Blue tooth


Teacher In-charge


HOD
Head
Department of Electronics
Yashwantrao Chavan College Of Science, Karad

Yashwantrao Chavan College of Science, Karad

Department of Electronics

Seminar Registration (Attendance) -B.Sc.III

Academic Year - 2024-25

Sr.No.	Roll No	Name of student	Sign
1.	3131	Ghadge Shivaji Satish	<u>S.S.Ghadge</u>
2.	3132	Kashid Dhanashri Gurunath	<u>Dk</u>
3.	3133	Nande Vishwajeet Abaso	<u>V. Nande</u>
4.	3134	Pawar Anjali Ganpat	<u>Ap</u>
5.	3136	Pisal Siddhesh Dipak	<u>Sid</u>
6.	3137	Ram Prashant Kumar Sunil	<u>R. Prashant</u>
7.	3138	Reur Sufian Mohammad	<u>(SMR)</u>
8.	3139	Mali Omkar Mahadev	<u>O. Mali</u>
9.	3140	Thorat Rohan Dadaso	<u>Thorat</u>
10.	3141	Yadav Suraj Arun	<u>S. Yadav</u>
11	3142	Chavan Harsad Subhash	<u>H. Chavan</u>
12	3143	Mulik Akshay Eknath	<u>A. Mulik</u>
13	3144	Dabade Sumedh Pandurang	<u>S. Dabade</u>

[Signature]
Teacher In-charge



[Signature]
HOD
Head
Department of Electronics
Yashwantrao Chavan College of Science, Karad

**yashwantrao Chavan college
of science Karad**

Name :- Kashid Dhanashri Gurunath

Roll No :- 3132 Bsc - III

Department of :- Electronics

Seminar on :- Biomedical electronics

Abh

Teacher
in charge

Kashid

Examiner

[Signature]

Head of
Department

Head

Department of Electronics
Yashwantrao Chavan College Of Science, Karad



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- What it is needed ?
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Introduction

Biomedical electronics is an interdisciplinary field that combines principles of electronics, biomedical engineering, and healthcare. It focuses on designing, developing, & maintaining electronic devices used in medical applications for diagnosis, treatment, & monitoring of patients.

Key areas of Biomedical electronics: **Instrumentation**.

Electrocardiogram (ECG), Electroencephalogram (EEG), Electromyogram (EMG) are used for monitoring electrical activity in the body.

2) **Biomedical sensors & Transducers** :-

Sensors detect physiological parameters like heart rate, temperature, & oxygen levels.

eg. include biosensors, piezoelectric sensors, and photodetectors.

3) **Medical Imaging System** - Includes X-ray, MRI, CT-scan, & ultrasound, which use electronic circuits to capture & process images for diagnosis.

What is biomedical electronics ?

Biomedical electronics is a specialized field that merges electronics, biomedical engineering, and healthcare to develop electronic devices used in medical applications. These devices help in diagnosis, treatment, monitoring, and rehabilitation of patients.

Medical Diagnosis - Devices like ECG, MRI & ultra-sound help doctors detect diseases.

patient Monitoring - Wearable sensors and ICU monitoring systems track vital signs like heart rate & oxygen levels.

Medical imaging - X-rays, CT scans, and MRI machines provide detailed internal body images.

Hospital automation - Systems like ventilators, robotic surgery, and infusion pumps enhance healthcare efficiency.

What it is needed ?

Biomedical electronics is essential in modern healthcare due to its significant contributions to patient care & medical advancement.

Key reasons for its necessity include :

- 1) **Enhanced Diagnostic capabilities** - Biomedical electronics have led to the development of advanced diagnostic tools, such as CT imaging systems and intensive care unit monitoring systems, which are crucial in healthcare setting.
- 2) **Advancement in medical imaging** : Biomedical engineers leverage their electrical expertise to pioneer developments in medical imaging systems, enhancing the ability to visualize internal body structures and improving diagnostic accuracy.
- 3) **Support for medical research and innovation** :
The field of biomedical electronics fosters innovation leading to the creation of new medical devices and technologies that address ongoing healthcare challenges & improve patient care.

Construction

The construction of biomedical electronics involves designing & developing electronic device and system for medical applications. These device range from diagnostic tools and therapeutic equipment to wearable health monitors and implantable medical device.

Key aspects of biomedical electronic construction.

- ① Components & materials sensors :- Measure physiological signals, eg. heart rate, temp, glucose level)
- **Microcontrollers & processors** - process data and control device function.
- **power source** - Batteries, wireless power transfer or energy harvesting
- **Communication modules** - Bluetooth, Wi-Fi, RF for data transmission.
- **Actuators** - for therapeutic devices like pacemakers or prosthetics

Working

Biomedical electronics refers to the application to electronic device and systems to monitor, diagnose and treat medical conditions. These device are designed to interact with biological systems, capturing physiological data and performing therapeutic tasks.

① Signal sensing and Detection biomedical device typically being with sensors that detect biological signal. These sensors measure various physiological parameters, including

- ECG (Electrocardiogram) for heart rate monitoring
- EEG (Electroencephalogram) for brain activity.
- EMG (Electromyography) for muscle activity.
- pulse oximeters for blood oxygen levels.
- Thermometer for body temperature.

Advantages

Biomedical electronics have revolutionized healthcare by providing tools that improve diagnostics, treatment, and patient monitoring

- ① Early Diagnosis and detection improved detection
- ② Accurate Monitoring Continuous Monitoring
- ③ personalized healthcare customized treatments
- ④ Minimally invasive treatment reduced recovery time.
- ⑤ Remote Monitoring and Telemedicine.
- ⑥ Therapeutic benefits treatment of chronic diseases
- ⑦ Enhanced Quality of life prosthetics and assistive device.
- ⑧ Reduced healthcare costs preventative care

Disadvantages

While biomedical electronics have greatly advanced healthcare, there are also some challenges and disadvantages associated with their use

- High initial cost Expensive equipment
- Dependence on technology technical failure
- privacy and security Risks data privacy
- Risk of misuse incorrect use by Non-professionals
- Limited accessibility
- Environmental impact waste generation.

Applications

Biomedical electronics play a crucial role in modern healthcare by enabling improved diagnosis, treatment, patient monitoring, and management. Here are the key applications of biomedical electronics:

1) Diagnostic equipment

- **ECG**: used to measure the electrical activity of the heart. It helps diagnose heart-related issues like arrhythmias, heart attacks, and other cardiovascular conditions.
- **EEG**: measure the electrical activity in the brain, used to diagnose conditions like epilepsy, sleep disorders, and brain injuries.
- **Magnetic Resonance Imaging (MRI)**: A non-invasive imaging technique that provides detailed images of internal organs and tissues. It is widely used to diagnose brain, spinal cord, and soft tissue conditions.

Conclusion

Biomedical electronics has revolutionized healthcare by integrating advanced electronic technology into medical practice. It plays a pivotal role in diagnostics, patient monitoring, treatment, and rehabilitation. These innovations have not only improved the quality of healthcare but also made it more accessible and efficient.

With the continuous advancement of biomedical electronics, new devices and technologies are being developed that offer better precision, ease of use, and more personalized care. From diagnostic equipment like ECG & MRI to therapeutic devices like pacemakers and insulin pumps, the applications of biomedical electronics are vast & varied.

Reference

Here are some general reference for biomedical electronics that can be useful for a deeper understanding

Books:

- Introduction of Biomedical engineering.
- Biomedical electronics and instrumentation.
- Biomedical Technology and application.

Journals and research paper

- Journal of Biomedical electronics and device.
- Biomedical Engineering online

Yashwantrao Chavan College of Science, Karad

Department of Electronics

Feedback form

Name of the Activity – Student Seminar

Roll No :- 3140

Class : B.Sc - III

		Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1	How would you rate the seminar's organization	✓				
2	How would you rate the Knowledge & expertise of the presenters	✓				
3	Subject interest generated by the departmental staff	✓				
4	Providing the facilities ICT, books, hardware tools etc. during seminar & seminar preparation by department	✓				
5	Support by department during seminar	✓				

Any Other suggestion if any No

Name of the Students Tharal Behan Dadara

Date : 05/02/2025

Sign : Tharal



Yashwantrao Chavan College of Science, Karad

Department of Electronics

Feedback form

Name of the Activity – Student Seminar

Roll No :- 3132

Class : B.Sc III

		Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1	How would you rate the seminar's organization		✓			
2	How would you rate the Knowledge & expertise of the presenters		✓			
3	Subject interest generated by the departmental staff	✓				
4	Providing the facilities ICT, books, hardware tools etc. during seminar & seminar preparation by department		✓			
5	Support by department during seminar	✓				

Any Other suggestion if any No

Name of the Students Kushid Dhanashri Gurunath

Date : 05/02/25

Sign : Dhanashri





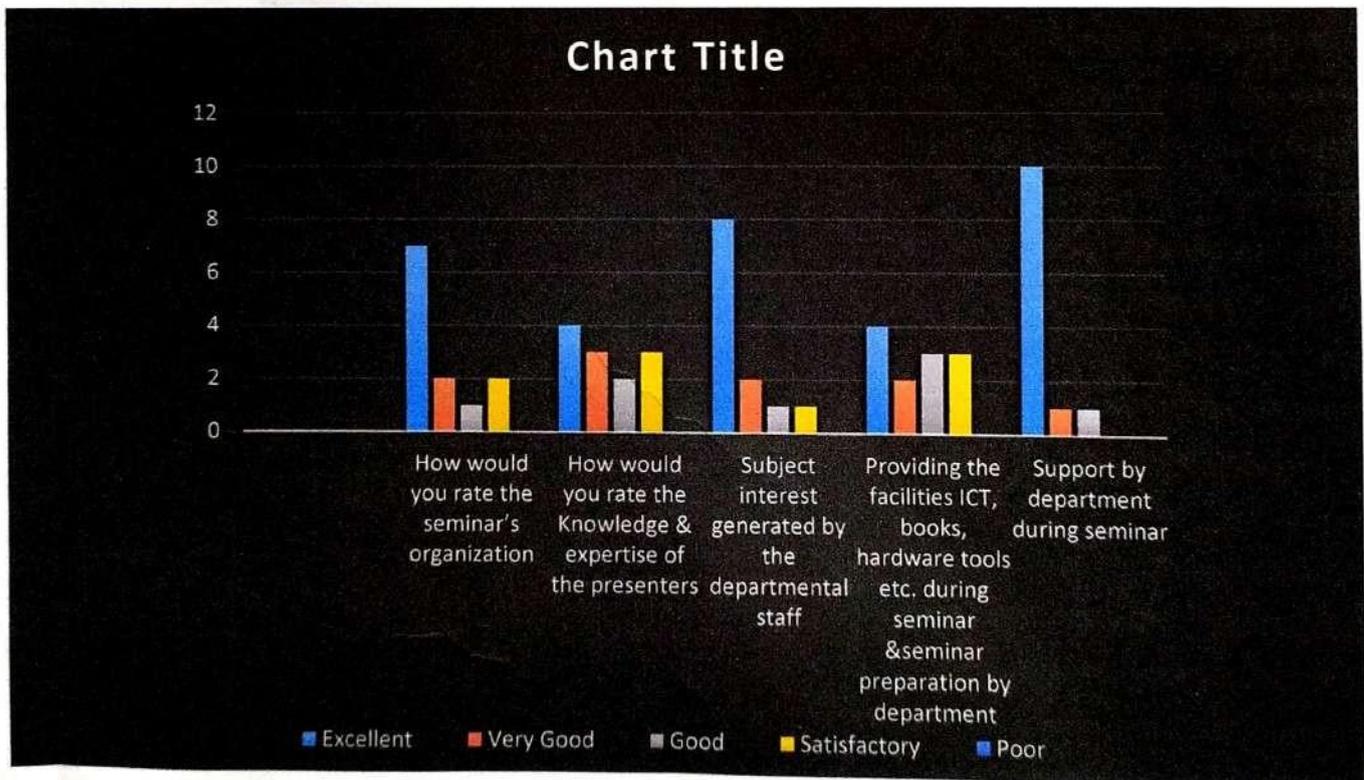
Department of Electronics

Name of the Activity :- Student Seminar

B.Sc.III

Feedback Analysis – 2024-25

		Excellent	Very Good	Good	Satisfactory	Poor
1	How would you rate the seminar's organization	7	2	1	2	
2	How would you rate the Knowledge & expertise of the presenters	4	3	2	3	
3	Subject interest generated by the departmental staff	8	2	1	1	
4	Providing the facilities ICT, books, hardware tools etc. during seminar & seminar preparation by department	4	2	3	3	
5	Support by department during seminar	10	1	1		



Ahu
Teacher-in charge

[Signature]
HOD
Head

[Signature]
Principal
Principal