

## DEPARTMENT MISSION

To Create & achieve an educational environment by which students can meet the challenges of modern Industrial society by giving them:

- Sound Technical Knowledge
- Analytical and Practical skills
- Innovative Ideas to work

## DEPARTMENT VISION

To Create professionals & to provide developed and testing environment to meet ever changing and ever demanding needs of the Electronic Industry in particular, along with IT & other inter disciplinary fields in general so as to strengthen social economy.

## PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

1. Identify, define and solve problems in the fields of electronics & communication engineering.
2. Employ necessary techniques and tools for advanced engineering applications, engage themselves in research and development and take up higher education.
3. Use their skills in ethical & professional manner to raise the satisfaction level of the stakeholders.

## PROGRAMME OUTCOME

- a) Apply knowledge of mathematics, science, engineering fundamentals and core engineering specialization to the define and apply engineering procedures, processes, systems or methodologies to electronics & telecommunication engineering.
- b) Identify, formulate & study literature to analyses electronics and telecommunication engineering problems in reaching substantiated conclusions using analytical tools.

- c) Designing solutions for electronics and telecommunication engineering problems which helps in the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, social, and environmental considerations.
- d) Conduct investigations of problems, locate, search and select relevant data from datasheets, standard databases and literature review & open ended experiments.
- e) Select and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modeling to electronics and telecommunication engineering activities with an understanding of the limitations.
- f) Demonstrate understanding of the social, health, safety, legal and cultural issues through awareness among the society about environmental aspects, pollution control, conservation of resources and bio diversity.
- g) Understand the impact of electronics and telecommunication engineering on the environment and possible remedies or precautions needs to be taken to protect the environment.
- h) Demonstrate knowledge & understanding of engineering management principles, professional and ethical responsibilities.
- i) Demonstrate and develop the abilities and skills to perform at highest degree of quality as an individual as well as a member of core group or team, which helps to enhance capabilities in the field of searching, assimilating information, managing task, handling people effectively.
- j) Communicate effectively with engineering community and society at large through technical report writing, design documentation, project reports, and effective presentations and to give and receive clear instructions.

- k) Demonstrate knowledge and understanding technologies of electronics and telecommunication engineering which are thrown up new opportunities that transforming talented and enterprising personalities by exploring their capabilities into business ventures.
- l) Develop confidence in lifelong learning by adapting to rapidly changing technologies of electronics and telecommunication engineering and allied areas.

We review and refocus our efforts in order to continually bring the best possible, relevant and robust education to our students. Today there is widespread knowledge everywhere with newer technologies, skills and avenues emerging. The horizons of professional activities are expanding and hence today there is much more scope for the younger generations to uncap their talents and touch greater heights of achievement. I welcome you all to this unique family and look towards helping you develop as engineer, creating a better future.

**FROM H.O.D.'s DESK**



It gives me immense pleasure to put forward the vision of Electronics & Telecommunication Engineering Department. Our goal is to provide students with a balance of intellectual and the practical experience that enable them to serve a variety of societal needs. Learning is a continuous process and does not end with the acquisition of a degree, especially because steady and rapid advances in Computing Technologies shorten the life of tools and techniques prevalent today. Therefore, they are given a strong foundation in E & TC and problem solving techniques and are made adaptable to changes. As H.O.D. I wish to take the opportunity to assure you that I will try my best to maximize students participation in the department

**ARTICLE SECTION:**

**Internet of things (IoT)**

The **internet of things (IoT)** is the network of physical devices, vehicles, buildings and other items—embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data.

The Internet of Things (IoT) will alter everything - including ourselves. This may look like a bold statement, but consider the impact the Internet already has had on communication, business, science, education, government and humanity.

Obviously, the Internet is one of the most significant and influential creations in all of human history. Now believe that IoT represents the next evolution of the Internet, taking a huge leap in its ability to gather, analyze, and distribute data that we can turn into information, knowledge, and, ultimately, wisdom.

In this context, IoT becomes immensely important. ‘Smart’ objects play a key role in the Internet of Things vision, since embedded communication and information technology would have the potential to revolutionize the utility of these objects.

Using sensors, they are able to perceive their context, and via built-in networking capabilities they would be able to communicate with each other, access Internet services and interact with people. ‘Digitally upgrading’ conventional object in this way enhances their physical function by adding the capabilities of digital objects, thus generating substantial added value. Forerunners of this development are already apparent today - more and more devices such as sewing machines, exercise bikes, electric toothbrushes, washing machines, electricity meters and photocopiers are being ‘computerized’ and equipped with network interfaces.

Imagine a scenario where a patient’s medical profile, vital parameters, and dialysis machine inputs are captured with the help of medical devices attached to his body.

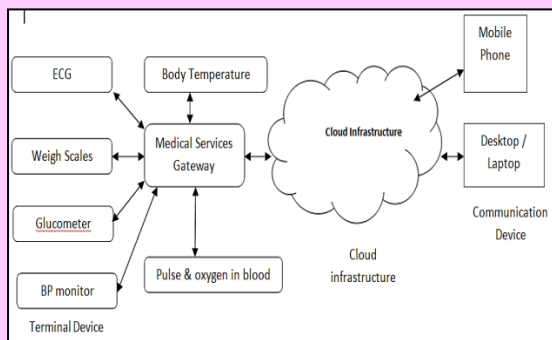
The patient does not even have to move from facility to facility to receive treatment. Rather, he can get his dialysis done with the help of a portable/home machine designed for the purpose.

**EDITORIAL**



Data gathered from this device is analyzed and stored, and the aggregation from multiple sensors and medical devices helps make informed decisions in a timely manner. Caregivers can monitor the patient from any location and respond appropriately, based on the alert received.

Advanced treatment of this nature can drastically improve a patient's quality of life. Different components of IoT for the application of healthcare are highlighted in Figure below. IoT has become an important part of the healthcare domain due to its huge scope of applications to monitor a patient's health in remote areas. Numerous medical devices used previously were completely isolated and stand alone but now a day's these devices are also getting connected to the internet for the sake of communication. The concept of interconnected healthcare components generates more accurate and instantaneous reports about the health parameters of a patient.



*Fig. : The Generalized Architecture of IoT.*

### Advantages of IOT

- Real time collection, correlation and analysis of numerous parameters including patient's medical condition, activities, environment, physiological and psychological status.
- Correlation of data from different sources, case history as well as different similar case studies can improve the patient outcome and accuracy of treatment.
- Verification for compliance of prescribed treatment and other parameters, and hence proactive treatment will bring wellness.
- Continuous fine-tuning, optimization and personalization of treatment
- Remote monitoring and single point of service will reduce cost of healthcare by avoiding visiting doctors and facilities.

### Blue Brain

"BLUE BRAIN"- The name of the world's first virtual brain. That means a machine that can function as human brain. Human brain, the most valuable

creation of God. The man is called intelligent because of the brain. Today we are developed because we can think, that other animals can not do .But we loss the knowledge of a brain when the body is destroyed after the death of man. That knowledge might have been used for the development of the human society. What happen if we create a brain and up load the contents of natural brain into it.

Today scientists are in research to create an artificial brain that can think, response, take decision, and keep anything in memory.The main aim is to upload human brain into machine. So that man can think, take decision without any effort. After the death of the body, the virtual brain will act as the man .So, even after the death of a person we will not loose the knowledge, intelligence, personalities, feelings and memories of that man that can be used for the development of the human society. No one has ever understood the complexity of human brain. It is complex than any circuitry in the world. When man does not have a device called computer, it was a big question for all .But today it is possible due to the technology. Technology is growing faster than every thing. IBM is now in research to create a virtual brain. It is called "Blue brain ".If possible, this would be the first virtual brain of the world.



### What is Virtual Brain?

We can say Virtual brain is an artificial brain, which does not actually the natural brain, but can act as the brain .It can think like brain, take decisions based on the past experience, and response as the natural brain can. It is possible by using a super computer, with a huge amount of storage capacity, processing power and an interface between the human brain and this artificial one .

### Benefits of Blue Brain

- It acts as a supercomputer.
- Improvements in processing, speed and memory could make entire human brain simulated.
- Things could be remembered without any effort.
- Use the intelligence of the person after death.
- It can make decisions entirely of its own.
- Allowing the deaf to hear via direct nerve stimulation.

- Blue brain is an approach to store and utilize human intelligence and information present in the mind even after human demise.
- It is an important move towards self - decision making by the computer or machine that holds a Blue brain.
- Business analysis, attending conferences, reporting, etc. are very significant functions that an intelligent machine can do consistently.
- It can be used as an interface between human and animal minds. The BBP has become successful in rat and some other animals which is a sign of success.

## Gi-Fi Technology

**Gi-Fi** or gigabit wireless refers to a wireless communication at a data rate of more than one billion bits (gigabit) per second. By 2004 some trade press used the term "**Gi-Fi**" to refer to faster versions of the IEEE 802.11 standards marketed under the trademark **Wi-Fi**. **Wi-Fi** ( IEEE – 802.11b) & **Wi-Max** ( IEEE.16e) have captured our attention, as there are no recent developments in the above technologies which can not transfer data & video information at a faster rate & led to introduction of Gi – Fi technology.

**Gi-Fi** ( Gigabit fidelity ) or Gigabit wireless is the world's first transceiver integrated on a single chip that operates at 60GHZ on the CMOS process. It will allow wireless transfer of audio & video data up to 5 gigabit per second (5 Gbps). Gi – Fi speed is ten times greater than WI-fi, ten times the current maximum wireless transfer rate at one – tenth of the cost, usually within a range of ten meters. It utilize the 5mm square chip & 1mm antenna burning less than 2 watt of power to transmit data wirelessly over short distance, much like Bluetooth. As the integrated transceiver is extremely small, it can be embedded into devices. The development will enable the truly wireless office & home of the future.

### Features of Gi-Fi –

- High speed of data transfer
- Low power consumption
- High security
- Small size
- Cost effective.

Within five years, we expect Gi-Fi to be the dominant technology for wireless networking which will develop the wireless home & office in future.

Nikita Uttam Kadlag.  
SYEJ

## List of Video Lectures on Spoken Tutorial

### Engineering

1. **Java:** Free and open source, high level, simple as well as object-oriented

programming language. Included in the curriculum of schools and colleges offering Computer Science and IT subjects.

2. **Netbeans :** NetBeans IDE is an open-source integrated development environment. NetBeans IDE supports development of all Java application types (Java SE including JavaFX, (Java ME, web, EJB and mobile applications) With Netbeans IDE, one can quickly and easily develop desktop, mobile and web applications with Java, HTML5, PHP, C/C++ and more
3. **PHP and MySQL :** Package for developing interactive websites and establishing back-end connectivity with a database - Famous websites using PHP include Facebook, Google, and Wikipedia.
4. **Python :** Numerical computational software for Science and Engineering Education - used in 3D animation and Gaming industry, Artificial Intelligence, YouTube, NASA, CERN, Yahoo and so on.
5. **Qcad :** QCAD is a free, open source application for computer aided drafting (CAD) in two dimensions (2D). Learn to create technical drawings such as plans for buildings, interiors, mechanical parts or schematics and diagrams using QCAD.
6. **Scilab :** Mathematical and scientific calculation software, open source substitute for MATLAB, very useful for all science and engineering students, in academics particularly.
7. **Thunderbird :** Learn to configure and use Thunderbird, a free email application that's easy to set-up and customize.
8. **Ruby :** Dynamic, open source, general-purpose, interpreted, true object-oriented programming language. It is a server-side scripting language similar to Python and PERL. Large programs written in Ruby are easily maintainable. It can be easily connected to DB2, MySQL, Oracle, and Sybase.
9. **Perl :** Practical Extraction and Reporting Language commonly known as PERL is a high level, general purpose and dynamic programming language. PERL has been used in graphics, web and network programming etc and you can find it's footprints in finance and bioinformatics domain, too.
10. **C and CPP :** Powerful features, simple syntax, and portability make C a preferred language among programmers, for business and industrial applications. Widely used in the development of operating systems.
11. **Advanced CPP :** For Advanced C++ series, learner should necessarily go through C and C++ series beforehand.
12. **BASH :** Bash is a "Unix shell" command-line interface for interacting with the

operating system. Bash has the ability to run an entire script of commands, known as a "Bash Shell script" or "Shell script".

13. **Advanced C** : For Advanced C series, learner should necessarily go through C and C++ series beforehand.
14. **GIT** : Git is a distributed version control software. It is a free and open source software. It keeps track of changes made to a file or set of files. It helps in tracking the project progress history.

#### **NEWS AT GLANCE**

- Congratulations to Mr.S.B Bendre for winning second position in state level football held at SGFI Solapur.
- Congratulations to Mr.S.B Bendre for participating in statelevel athletic event held at Wadia park.
- Congratulations to Mr.S.B Bendre for winning 2<sup>nd</sup> position in National level "Drop Ball competition" at BPS Hariyana.
- Congratulations Gangwal Sanket for winning first position in "Zonal Volley Ball" at Kopargaon.
- Congratulations Jha Nidhi for winning 2<sup>nd</sup> prize in zonal Badminton matches held at P.D.V.V Patil Pravara Nagar.

#### **Class Toppers**

	Name of Student	Percentage
F.Y.	Miss. Singar Pranjali	81.29%
S.Y.	Miss.Patare Riddhi	85.38%
T.Y.	Miss.Khalkar Harshada	87.22%

#### **Editorial board**

Prof.V.V.Zalke	H.O.D
Prof.D.B.Borse	Editor
Prof.P.B.Khatkale	Staff member
Ashpak. M Pathan	Student Member
Mangesh B Shirshat	Student Member