PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

PEO 1: Preparation: To prepare students to excel in undergraduate programs and to succeed in industry / technical profession through global, rigorous education.

PEO 2: Core Competence: To provide students with a solid foundation in mathematical, scientific and engineering fundamentals required to solve engineering problems and also to pursue higher studies.

PEO 3: Breadth: To train students with good scientific and engineering breadth so as to comprehend, analyze, design, and create novel products and solutions for the real life problems.

PEO 4: Professionalism: To inculcate in students professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach, and an ability to relate engineering issues to broader social context, additional courses with regard to physical, psychological and career growth.

PEO 5: Learning Environment: To provide student with an academic environment aware of excellence, outstanding leadership, written ethical codes and guidelines with moral values, and the life-long learning needed for a successful professional career.

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

DEPARTMENT INFORMATION

Name and Address of Department

Department of Electronics and Communication Engineering
IPS Academy , Institute of Engineering & Science,
Knowledge Village
Rajendra Nagar, A. B. Road, Indore (M. P.) PIN – 452012

Head of Department

Prof. Rupesh Dubey
HOD, Electronics and Communication Engineering
Phone No. 0731-4014610
e-mail: hod.telecom@ipsacademy.org

History of Department

Institute of Engineering & Science (IES) was established in the year 1999, with Electronics and Communication Engineering branch having an intake of 60 students. In the year 2004, BE (EC) intake was increased from 60 to 90 and further to 120 students in the year 2005 via approval from AICTE, New Delhi. The Department got the approval for starting ME degree course (Specialization- ECE) in the year 2007. In the year 2017, Department got accredited from National Board of Accreditation.

VISION AND MISSION OF DEPARTMENT

Vision

The vision of Department of Electronics and Communication Engineering is to provide higher education in the field of technology and reach status of a Nationally and Internationally reputed Institution which is based upon the culture and the values of universal science and contemporary education and a center of research which lay the groundwork in shaping the future in the field of Engineering.

Mission

To create world class facilities and environment for human resource development capable of contributing towards research and innovations in the field of Electronics and Communication Engineering with emphasis on development of Society.

DEPARTMENT FACULTY DETAILS

			
Dr. M.G. Sharma **Advisor**	**Prof. R.C. Dubey** **Prof.**	**Prof. Rupesh Dubey** **(Asso. Prof.)**	**Mr. Amiteshwar Bhalavi** **(Asso. Prof.)**
			
Ms. Angita Hirwe **(Asso. Prof.)**	**Dr. Dharmendra S. Yadav** **(Asso. Prof.)**	**Ms. Kavita Upadhyay** **(Asso. Prof.)**	**Mr. Nitin Jain** **(Asso. Prof.)**
			
Ms. Smita Patil **(Asso. Prof.)**	**Mr. Amit Pathak** **(Asst. Prof.)**	**Mr. Ashish Sharma** **(Asst. Prof.)**	**Mr. Deepak Bicholia** **(Asst. Prof.)**

 **Mr. Dharmendra Yadaw (Asst. Prof.)**	 **Mr. Gaurav Matange (Asst. Prof.)**	 **Mr. Gopal Gupta (Asst. Prof.)**	 **Mr. Harsh Gaud (Asst. Prof.)**
 **Mr. Indra Kumar Shah (Asst. Prof.)**	 **Mr. Nilesh Sharma (Asst. Prof.)**	 **Ms. Namrata Atre (Asst. Prof.)**	 **Ms. Poonam Lilhare (Asst. Prof.)**
 **Mr. Rahul Pal (Asst. Prof.)**	 **Mr. Rajesh B. Ahirwar (Asst. Prof.)**	 **Mr. Ritesh Gupta (Asst. Prof.)**	 **Mr. Roopesh Makwana (Asst. Prof.)**
 **Mr. Sunil Chavda (Asst. Prof.)**	 **Mr. Sharad Jain (Asst. Prof.)**	 **Ms. Vandana Dubey (Asst. Prof.)**	 **Dr. Vikas Vijayvargiya (Asst. Prof.)**

DEPARTMENT MEMBERSHIP

Department of Electronics and Communication Engineering has membership of Institution of Electronics and Telecommunication Engineering (IETE) student forum & IEEE Student chapter. Many Events and Expert Lecture are organized under the banner of IETE & IEEE Student chapter in 2016-17.

SPORTS ACTIVITIES

Students had received winner and runner up awards in different sports activities such as Cricket (Female), Volley Ball (Female), Table Tennis (Female), Badminton (Female), Basket Ball (Female), Volley Ball (Male) at Institute level, State and National level.

Mobile Phone Selection based on requirements

Now a day market is being flooded with claims of companies for features of mobile phones. Here in this article a light has been put upon different features of modern day phones making it smarter. Also at the end optimal specifications are being concluded as available for a phone.

RAM: Random Access memory is one of the important criterions for selection of phone required by people with a demand to have fast phone. Their demand can range from gaming to high speed downloads. RAM is the memory where phone stores temporary data. Having more RAM means having more and more speed although this is only virtually true as speed of operation of device also depends upon processor clock frequency. Now a day phone with two to eight Giga bit RAM is common.

PROCESSOR: Processor makes the mind of phone. Again people with requirement of a non hanging phone while doing multiple operations like downloading/uploading high memory files and at the same time gaming with the phone requires multi tasking processor. The processors are being rated as fast or slow by their processing speed ie the clock rate. Higher the processing speed of processor faster is the system but again it should be supported by memory. Right now in market deca core processor with 2.3 GHz frequency is available, which provides fast system, but it is followed by high heat dissipation rate.

ROM: This is the storage element of the system, where in all data be it videos, images or other type of files are stored. In market previously devices were available with externally expanded memory but now this expansion is there at the cost of one sim slot which manufacturer calls it as hybrid. So people with higher memory requirements should go cautious while making a selection of phone on this point. Right now having 64 Gb as internal storage in phone is common seen.

BATTERY: This is the power element of phone and since android operating systems drain out quickly so it is required to have a higher battery rating. Available in user replaceable and non replaceable modes batteries contributes to the major portion of phone's weight. They are now available either as lithium ion or lithium polymer and are equally reliable and popular. Batteries are available in ranges of 4000mA hour to 5000mA hour. Since the battery is very high power rated so people's choice is of availability of quick charging mode so that charging time is reduced.

SCREEN: This is one of the major part on mobile phone which is greatly ignored during selection. There are many types of screens available in phones like Oled, super amoled, Amoled, retina etc.
Oled screen does not requires any light to produce colors so power consumed is very low but their cells grow older quickly.
Amoled screen is light emitting diode which is one step ahead of Oled. This has nearly all features like quality colors, quick reaction, broader viewing angle etc, comes along with light weight.
Super Amoled screen is higher version of basic amoled with correction in touch capabilities specially suited for HD viewing.
Retina screen has more than 300ppi pic cell density. It is most quality display screen designed after smoothening each pic cell corner. This gives it better viewing angle along with LED back light features etc.

Since being handy device slipping of phone from hands during operation or screen getting damaged due to higher heating makes it necessary to go for gorilla glass in mobile screen. Also as our emails are now available handy on mobiles so it is important to have a screen with best touch typing capabilities. Right selection of screen also safeguards our eyes as we remain gazing phone for quite a longer period of time.

CAMERA: Due to extinction of handy Cameras having a high zooming, high pic cell rate, extra camera for catching detailed image are becoming popular.
The mobiles with 13Mp camera rating as the main camera and 13Mp as the front camera are common on mobile phones.

FINGERPRINT SENSOR: Previously mobiles were launched with only connectivity purpose but now a mobile is everything for a user. Finger print sensor makes mobile extra safer and quicker to operate. Also many banking applications run the banking transactions based upon finger print identifications on phone devices. One should prefer to choose phone with finger print sensor.

NETWORK CONNECTIVITY: The market is flooded with latest technology go mobile network ie 4G phones. People choose 4 G technology to get faster network coverage, but tower distance is also one of the major criterions for a phone to have a high speed Internet. But due to more laying of towers in area of 4G so coverage of 4G is rapidly increasing. May be still from 2G to 4G phones are available but people prefer either 2G with nearly no internet requirement or 4G with high data rate requirement.

OPERATING SYSTEM: Operating system is the software that works on processor to run phone. Applications are designed to work on particular operating system. Since application designer's targets popular operating system so that their application fetches most downloads, people must also make selection based upon same.
Android is the most popular OS among phones with competitors like iphone, blackberry, windows, symbian etc. Since user requirement decides which OS be the best for him. But selection must be made taking into considerations availability of applications, economics, safety, speed, easy updates, simplicity of operation, flexibility of customization, size occupied by OS in phone memory etc.

Other features like splash proof, USB OTG connectivity, wify, Bluetooth can be selected as per requirement of customer. While deciding phone, launch date also plays an important role as with the advancement, more features are getting included in mobile phones at cheap prices. After all filtering, it important to check for user reviews available on most of internet sites so as to know experience of users using the phone. Problems like overheating touch sensitivity, camera quality, quick draining battery, non cooperation of service centers, low speed charging, hanging of mobiles, poor connectivity, unclear audio etc comes into picture by user reviews.
Before making phone selection people should zero out their own requirements and then they should check for features in the phone. Well said that about 60% of the features of phone are left unutilized by users, so people must choose phone economically. Availability of phone finder features on many mobile selection sites makes it easy for buyers to filter out best phone as suitable matching requirements.

(Prof. Rupesh Dubey, HOD EC)

Paul Allen Wants to Teach Machines Common Sense

Microsoft's co-founder Paul Allen said Wednesday that he was pumping an additional $125 million into his nonprofit computer research lab for an ambitious new effort to teach machines "common sense."
The money for the Allen Institute for Artificial Intelligence will about double the lab's budget over the next three years, helping to fund existing research as well as the new effort, called Project Alexandria. In the years and decades to come, the lab hopes to create a database of fundamental knowledge that humans take for granted but machines have always lacked.

"To make real progress in A.I., we have to overcome the big challenges in the area of common sense," said Mr. Allen, who founded the software giant Microsoft in the 1970s with Bill Gates.

Today, machines can recognize nearby objects, identify spoken words, translate one language into another and mimic other human tasks with an accuracy that was not possible just a few years ago. These talents are readily apparent in the new wave of autonomous vehicles, warehouse robotics, smartphones and digital assistants.

But these machines struggle with other basic tasks. Though Amazon's Alexa does a good job of recognizing what you say, it cannot respond to anything more than basic commands and questions. When confronted with heavy traffic or unexpected situations, driverless cars just sit there.

A.I. "recognizes objects, but can't explain what it sees. It can't read a textbook and understand the questions in the back of the book," said Oren Etzioni, a former University of Washington professor who oversees the Allen Institute for Artificial Intelligence. "It is devoid of common sense."

Success may require years or even decades of work — if it comes at all. Others have tried to digitize common sense, and the task has always proved too large.

In the mid-1980s, Doug Lenat, a former Stanford University professor, with backing from the government and several of the country's largest tech companies, started a project called Cyc. He and his team of researchers worked to codify all the simple truths that we learn as children, from "you can't be in two places at the same time" to "when drinking from a cup, hold the open end up."

Thirty years later, Mr. Lenat and his team are still at work on this "common sense engine" — with no end in sight.

Mr. Allen helped fund Cyc, and he believes it is time to take a fresh approach, he said, because modern technologies make it easier to build this kind of system.

Mr. Lenat welcomed the new project. But he also warned of challenges: Cyc has burned through hundreds of millions of dollars in funding, running into countless problems that were not evident when the project began. He called them "buzz saws."

(Ref: ACM Tech News, March 2, 2018 Edition)

EVENTS

Following Eight workshops have been organized by department –

1. Project Competition for 2nd and 3rd year students has been organized on 19/02/2018.
2. Refresher Course on "RF Engg. Part 1 Electromagnetic field & wave theory" has been organized from 09/12/2017 to 30/12/2017.
3. "Entrepreneurship Awareness Camp" has been organized from 30/10/2017 to 01/11/2017 for students.
4. RGPV annual event "Convolution 2018" zonal round has been organized on 07/02/2018.

Following is the list of Expert lecture organized in the department –

1. Expert lecture on "Digital communication" by Dr. Raksha Upadhyay on 15/09/17.
2. Expert lecture on "Challenges in E waste" by Dr. Fazal Hussain on 13/11/17.
3. Expert lecture on "Application of Fractional Transform" by Dr. K. K. Sharma on 23/12/17.
4. Expert lecture on "Entrepreneurship" by Mr. Jay K. Jain on 23/12/17.

Following is the list of Industrial visits organized in the department –

1. Rural outreach of village rangwasa for first year students.
2. Industrial Visit to Mohini Fiber Pvt. Ltd. is organized on 01/09/2017.
3. Industrial Visit to Scientech Indore is organized on 06/02/2018.

Following is the list of Industrial visits organized in the department –

1. Local awareness Tour to Kota from 19/02/2018 to 23/02/2018
2. Industrial Tour to SCL Chandigarh (Department of Space, Govt. of India) is organized from 27/10/2017 to 04/11/2017.

FACULTY ACHIEVEMENTS

Following are the research papers published by Faulty members of department of ECE.

1. "Quasi Path Restoration: A Post failure recovery scheme over pre allocated backup resource for elastic optical networks" by Dr. Dharmendra S. Yadav in Jan – 2018 in Elsevier (OFT).
2. "Least loaded and route fragmentation aware RSA strategies for elastic optical networks" by Dr. Dharmendra S. Yadav in Oct – 2017 in Elsevier (OFT).
3. "Performance evaluation of MC-CDMA System over Rayleigh Fading Channel" by Ms. Angeeta Hirwe in Oct – 2016.
4. "Comparative Study of Different types of Relay Selection Scheme for Cooperative Wireless Communication" by Mr. Nitin Jain in Aug – 2017 in IEEE conference.

Following is the list of workshops attended by Faculty members of Dept. of ECE-

1. Prof. Rupesh Dubey attended workshop on "Advances in Automation" from 18/12/2017 to 23/12/2017.
2. Ms. Namrata Atre attended Seminar on "Machine Learning Basic and Emerging Trends" from 01/09/2017 to 06/09/2017.
3. Ms. Smita Patil attended Seminar on "Machine Learning Basic and Emerging Trends" from 01/09/2017 to 06/09/2017.
4. Ms. Poonam Lilhare attended Seminar on "Machine Learning Basic and Emerging Trends" from 01/09/2017 to 06/09/2017.
5. Dr. Dharmendra S. Yadav attended Seminar on "Machine Learning Basic and Emerging Trends" from 01/09/2017 to 06/09/2017.
6. Mr. Indra K. Shah attended workshop on "Wireless Sensor Network" from 18/12/2017 to 21/12/2017.
7. Ms. Vandana Dubey attended workshop on "Entrepreneurship" from 21/08/2017 to 02/09/2017.
8. Mr. Nilesh Sharma attended Seminar series "Bombay Information Theory Seminar - 2018" from 11/01/2018 to 14/01/2018.

STUDENT ACHIEVEMENTS

1. Ms. Riya Jain, Mr. Sahil Jain and Mr. Yash Jaiswal awarded by scholarship of Rs.10000/- at runner position in e- Yantra Ideas Competition (eYIC-2018) held at IIT RAM, Ahmadabad.
2. ECE Department has won in Badminton (Girls), Table Tennis (Girls) and runner up in volley ball (Boys) and LAN Gaming.
3. Ms. Swarnim Prasad Played at National level in Badminton.
4. Ms. Deeksha Mishra Played at State level in Basket ball.
5. Ms. Deeksha Mishra Played at National level in Net ball.
6. Ms. Deeksha Mishra Played at State level in Net ball.