



Newsletter March 2006

DRONACHARYA COLLEGE OF ENGINEERING

Special Edition by Department of Electronics & Communication

From Editor's Desk:

Here comes the third issue of Dronacharya News Letter bringing to you the news, views and reviews of worthy HOD E.C.E. Department, Prof. H.S. Dua, sterling staff and students. I seize the opportunity of congratulating all concerned for E.C.E. Department's enviable achievements on all fronts-academic, sports and cultural. We place on record our very-very special accolades for our illustrious alumni Miss Deepti Bawa and Mr. Amar Singh both of VIII Semester E.C.E. for receiving the First Cash Prize of Rs. 5000/- and Second Cash Prize of Rs. 3000/- respectively for their overall best performance from the auspicious hands of our **Hon'ble Chief Guest Ch. Virender Singh**, Minister for Finance, Institutional Finance, Planning, Labour and Employment. Apart from achieving academic excellence, our students won laurels on sports and cultural fronts. In the sphere of placement too DCEians have made us proud. A company as distinctive, sterling and sky-soaring as IBM, Bangalore has identified several aspirants from E.C.E. Department. Our grateful thanks are due to our Hon'ble Chairman, Principal and Dean Academics for their ceaseless encouragement, inspiration and motivation. It is the month of March and all the DCEians, in different capacities, are on the march spearheading to attain tantalizing targets.

Editor
(Dr.R.C. Narula)

From HOD's Desk:

We in Electronics & Communication Department are working towards the goal of providing quality education to the students, so as to turn them to in excellent technocrats second to none in their field.

The mission of this News Letter is to convey to staff, students and alumni the achievements of the Department and recordable events of the month. This will keep the students as well as alumni abreast of various activities at the Department and the College.

Endeavor is also to create an environment in which Faculty is treated as service provider and students as its clients. Service provider is to provide his best services to clients. Under this pursuit, other than improving academic services, new initiatives like regular classes on Personality Development and Seminars have taken place. Personality Development classes have been introduced in the current Semester. Senior Faculty has been entrusted with this task of teaching various attributes of Personality Development. Sports periods have been introduced keeping in mind the fact "*A healthy mind in a healthy body*" and also an established fact that the reactions and decisions of a player are quicker and better when compared to a non player. To ensure that regular academic classes are not hampered, six days a week system has been adopted so as to ensure timely completion of the laid down syllabus.

Wishing a bright future for staff, students and alumni.

Head of the Department
(Prof.H.S.DUA)

Live Projects Undertaken by students:

RAILWAY MISHAP PREVENTION SYSTEM :

Railways have been struggling to get a fool proof accident prevention system since long. Our students of final year ECE branch did a brain storming session and designed a system to prevent possible accidents. They came out with a model using state of art technology to prevent possible train collision which can take place.

1. Automatic Control of Opening and Closing of Gate at Railway Crossing:- In our country a large number of railway crossings are unmanned. The system adopted in the project is a strong magnet fitted at the nose of engine facing ground which attracts a reed fitted between the railway tracks on the ground and as a result circuit of a motor is completed. The motor closes the gate. Position of the reed is at reasonable distance before the gate. Similarly, second reed is at a reasonable distance ahead of the gate, thus senses passes out of the engine and the motor opens the gate.

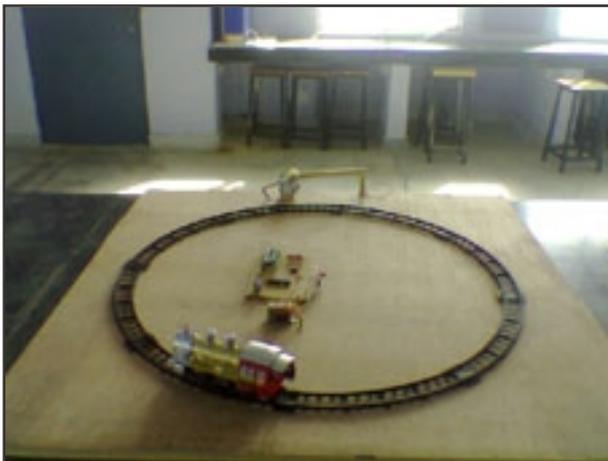
2. Ensuring Prevention of Collision of Trains:- Passing of engine over the reed fitted between the tracks on the ground gives signal as a pulse to microcontroller 8051 installed in the control room, about the train on a particular track. Same is displayed on a display board in the control room. Arrival of second train on the same track, before the first has left the station, will feed the second pulse to microcontroller. The microcontroller will raise the alarm in the control room on receiving second pulse, asking for appropriate preventive action.

3. Ensuring Prevention of Derailment :- Opening of fish plate on the railway track will disconnect a 12V circuit which is operating a relay in the control room. Opening of the circuit will deactivate the relay in the control room and will raise an alarm for taking appropriate preventive action.

The above said system can be used by railways with appropriate modification to make a fool proof accident prevention system.



RAKESH DUHAN



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E & CE VIII Semester

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INTERNET CONTROLLED ROBOT :

There have been a number of airborne systems for spying on enemy territory. Our students of final year Electronics and Communication branch have organized a successful effort of fabricating a robot which can move on land in hostile territory and do a spying task. Its movement and actions are controlled through internet remotely from friendly territory. Following are the features of Robot :-

- Robot is a micro controller based device. It can move in any direction depending on the signal received through internet from master computer operating in friendly territory.
- The robot is equipped with a web camera to take pictures in hostile area and transmit picture information through internet to master computer for analysis of pictures and subsequent action.
- The Robot also has a proximity sensor module. Microcontroller used in robot is 8051, an 8-bit microcontroller. This also carries a slave computer which gets instructions from master computer through internet.

The system with necessary modifications can be successfully used by the Armed Forces for reconnaissance purposes. The size of robot being so small, it gives an impression of being a toy and cannot be suspected by the enemy. The project was displayed at **ELECRAMA 2006**, held at Bombay Exhibition Centre, Mumbai and it was well appreciated by visitors.



DURGESH CHOPRA



Project being displayed at ELECRAMA'2006 held at Bombay Exhibition Center, Mumbai.

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E & CE VIII Semester

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Technology Update :

Wi Fi AND WIMAX TECHNOLOGIES FOR METRO ACCESS SOLUTIONS

Wireless Internet Service Providers (WISPs) have been striving for wireless technologies that make wireless metro access possible. Accesses to areas that are too remote, too difficult or too expensive to reach with the traditional wired infrastructures (such as fiber) require new technologies and a different approach.

The three key deployment types that make up wireless metro access are backhaul, last mile and large area coverage (referred to as hot zones). Wireless last mile coverage typically uses the Institute of Electrical and Electronics Engineers (IEEE) 802.11 equipment in a mesh deployment.

Wireless Fidelity (Wi Fi) has already revolutionized the market for unlicensed client- access radios in a wide variety of applications. The recent development in this field is , worldwide Interoperability for Microwave Access (WiMAX) Certification of the IEEE802.16- 2004 standard for fixed position radios which will do the same for point to point (P2P) and point to multi point (P2MP) wireless broadband equipment in both the licensed and unlicensed bands. The cost and limited flexibility of wired backhaul limits wireless access growth. In the face of the technical challenges, WISPs have begun to look ahead at WiMAX certified solutions. WISPs modified existing wireless technology, typically based on the IEEE802.11 standard, to patch last mile gaps. Limitations in these deployments surfaced, however, because wired backhaul solutions can be too expensive for establishing widespread wireless access.

WiMAX is a wireless metropolitan area network technology that provides interoperable broadband wireless connectivity to fixed, portable and nomadic users. It provides up to 50 kilometers of service area, allows users to get broadband connectivity without the need of direct line of sight to the base station, and provides total data rates up to 75 Mbps enough bandwidth to simultaneously support hundreds of businesses and homes with a single base station

Student's Viewpoint About The Department :

DCE has helped me to carve up my dreams and ambition to that level of success where sky is the limit. Being a part of DCE culture and family, I've started living into it and if ever in life I would get a chance to help my institution in any form, I'll never give a second thought. The Faculty members in the E & CE dept. are not just the guiding people but they are "the Gurus". They motivate us from time to time and are always there to guide us through difficult times and even in finding the solutions to our problems. They simply treat us as their own family members. The labs in the E & CE Dept. are well -equipped. Lab staff is very helpful and cooperative. The frequently asked Questions (FAQ'S) series help a lot while preparing for the University Examination. Lab instructors provide experiment details that help us in preparing the practical files easily. 'Discipline' is the key word followed in our College which is a plus point for this Institution.

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"Miracles Work on Faith; Science Breeds on Practical"- Mooney

Believing in this fact that the growth in Electronics and Communications will be the vital spark, which will actuate and direct the evaluation of the technology in the 21st century. Our Department gives more stress on practicals and essential industry exposure for the attainment of the knowledge. Going by this policy, the ECE Department in the college has all the required Electronics and Communication labs, including the Project labs which are well - equipped with the latest equipment. Also the Department has highly capable and experienced Faculty members who act as mentors for students and try building the technology acumen of the students in tune with the requirement of industry, in a span of 4 yrs. The numbers of Guest Seminars by outside Faculty have increased as a result of which the students are aware of the current market trends and latest technologies. Compared to the last two years, the number of placements this year in the ECE Department has increased multifold. In addition to the required curriculum on technical subjects, we do get our share of co-curricular activities to groom us in other facets of our life. Thus the ECE department envisages the vision of preparing the students to be well - equipped to take up challenging positions in the electronic industry.

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Placement Achievements :

The following four final year students from the Department have been selected by a highly reputed enterprise **IBM Bangalore**.

- Astha Sindhwani
- Arun Dalal
- Manju Lata
- Navjeet Singh

Well done ECEians! The Department Placement Committee is keeping a constant liaison with the College Training and Placement Officer so as to explore new ventures in and around Gurgaon to improve placement results.

Faculties of E & CE Department :



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