



# DRONACHARYA COLLEGE OF ENGINEERING

## JULY NEWSLETTER, 2009

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ISSUE OF ELECTRONICS & COMMUNICATION ENGINEERING

From Editor's Desk :

***"The heart abounds in thousand desires-each suspending the trepidation, Many of them got an utterance, yet few of them have attained fulfillment."***



July is a jewel in the Academic Calendar of a college and so it is in the case of DCE, a well established professional Institute that will confidently ascend in the year running to the twelfth rung of the upward spiralling ladder of Time that has the proud privilege of leading thousands of its alumni to the most desired dream destinations in the region where it is firmly rooted, across the country and across the foreign shores.

We have never looked back except for the holistic historical reasons to assess, to evaluate and scan our progress on the parameters which we set in front of us at the time of inception in the year 1998. By the grace of God, by the aroma that surrounds the name of Guru Dronacharya by the philanthropic intentions of the Management, and above all by the dedication of the Principal and the Faculties of various Departments we have succeeded in carving out a niche that has enabled us to have an edge above the top-notch Institutions of the region. Honestly, we have been fortunate in attracting students from far and wide because of our steadily growing reputation. Whatever we are and wherever we are today is because of our dedication and a disciplined environment.

In fact, DCE, discipline and dedication have become synonymous, each becoming an inseparable component of the other. The heat of the Examinations will be soon over and we are sure the graph of our University Results will register a further escalation with myriad Merits. The Placement Cell of the college has sleepless nights to see almost all our students well placed. We are fully alert even towards the careers of our students who will be upgraded to Pre-Final and Final Year. We are making all out endeavours to fulfill our commitments to our students and their parents who have entrusted upon us, with blind faith, the future of their wards. We are as sensitive to the careers of our students as their parents are. We are getting ready with a zeal greater than ever before to take care of the new aspirants whose presence will enhance the glory of our beautiful campus in the session 2009-10.

The following are the key-notes of our developmental policies:

- Never say never
- Each student is gifted in some sphere.
- Teaching is the noblest profession and the best teachers are teachers by choice and not by chance.
- At DCE "***guru-shishya parampara***" is maintained in word and spirit.

At the turn of the session, we re-dedicate ourselves to our glorious mission to serve society and the nation at large.

 Editor, (Dr. R. C. Narula)



## From HOD's Desk :

The July-09 issue of the NewsLetter is aimed at acquainting our students, the alumni as well as staff of the college with the progress being made in various fields for the growth of this Institution and keep them abreast of the activities being undertaken at the Department level. The University Results declared last month have been very good and have shown a rising trend due to untiring efforts of our faculty.

The ECE Department is striving hard towards the goal of providing innovative and quality education with high standard to achieve academic excellence. **The Department is being guided under the vision of Dr. Satish Yadav, Hon'ble Chairman Dronacharya Group of Institutions and Dr. B. M. K. Prasad, Principal DCE.**



The college is taking all the necessary steps to upgrade the knowledge of faculty too so that they become more proficient in imparting knowledge to their students. Three faculty members from the Department attended a **summer school on "APPLICATIONS OF ICT FOR HARDWARE LABORATORY" at IIT Kharagpur from 17-23 May, 09**. Another faculty member is attending a **2 week faculty development program at NIT Calicut on RESEARCH METHODS IN SCIENCE ENGINEERING AND MANAGEMENT (Sponsored by MHRD, Govt. of India)**.

The college is also starting a number of clubs like the Innovation club, Robotics Club, Music Club etc. so as to develop creative abilities and add up to the talent of our students. The Electronics & Communication Engineering Department will continue its sincere efforts towards producing ECE Engineers, who will prove not only as good confident technocrats but also very good human beings of the society.

 Head of the Department, (Prof. H. S. Dua)

## Live Projects Undertaken By Students :

### HEART BEAT MONITOR

The Project "**Heart Beat Monitor**" fabricated by the following students of final year ECE under the guidance of **Prof (Mrs.) A. N. Mahajan was awarded first prize by Faridabad Industries Association (FIA)**.

The project "**Heart Beat Monitor**" is a very useful project especially for medical field. This can be used to monitor the heart beat in digital display format. In this project two electrodes were used to sense the blood pumping done by heart which is proportional to heartbeats. The sensing electrodes sense the blood pumping cycles and send the signal to current amplifier. The amplified signals are processed to extract the number of cycles of blood through our body. The average value of sensed cycles of blood pumps are displayed per minute interval. Microcontroller AT89S51 is used to process and displayed on 16x2 LCD display.

#### Team Members

-  Kartik Mohan
-  Anmol Mahani
-  Aashish Dhoundiyal
-  Naveen Goyal
-  Arun Verma

### OPTICAL FIBRE CONTROL SYSTEM

In this project we show how we control multiple systems using one wire system. To control with one wire system is a smart control system. There is only one wire between transmitter and receiver circuit. It is possible to control the electrical appliances with the help of mobile control also. In this we use one DTMF generator circuit and one receiver circuit. DTMF generator circuit transmits the signal to the receiver circuit. Receiver circuit receives this signal and then controls the electrical appliances circuit with the help of relay coil.

This project was fabricated by the final year ECE students.

#### Team Members

-  Anshuman Singla
-  Narender Kumar
-  Adarsh
-  Naveen Bansal
-  Nitin Gupta

## GSM CONTROLLED DOOR LATCH OPENER WITH SECURITY AUTODIAL

The project is designed on the DTMF decoding. Our modern telephone and even our mobile phone uses DTMF coding for number dialing. These DTMF codes can be decoded and utilised for useful purposes. The circuit utilizes IC8870 for DTMF decoding. Microcontroller 89C51 reads these codes and takes necessary action. Door latch can be opened by entering the correct password; we can also connect security sensors of our choice. In case of any breach of security, the device will dial out the pre-stored number and deliver an emergency message.

This project was fabricated by the final year ECE students.

### Team Members

- Amit Kumar
- Anuj Dhanuka
- Anuj Kumar
- Sumit sharma

## Technology Focus :

### GENERAL PACKET RADIO SERVICE

**General packet radio service (GPRS)** is a packet-oriented mobile data service available to users of the cellular communication system, global system for mobile communications (GSM), as well as in the 3G systems.

GPRS data transfer is typically charged per megabyte of traffic transferred, while data communication via traditional circuit switching is billed per minute of connection time, independent of whether the user is actually using the capacity or is in an idle state. GPRS is a best-effort packet switched service, as opposed to circuit switching, wherein a certain quality of service (QoS) is guaranteed during the connection for non-mobile users.

#### Services:

GPRS upgrades GSM data services providing:

- Multimedia Messaging Service (MMS)
- Short Message Service (SMS)
- Push to talk over cellular
- Instant Messaging
- Internet applications for smart devices through Wireless Application Protocol (WAP)
- Point-to-Point (P2P) service: Inter-Networking with the Internet (IP)
- Future enhancement: flexibility to add new functions, such as more capacity, more users, new accesses, new protocols and new radio networks.

If SMS over GPRS is used, an SMS transmission speed of about 30 SMS messages per minute may be achieved. This is much faster than using the ordinary SMS over GSM, whose SMS transmission speed is about 6 to 10 SMS messages per minute.

### ENHANCED DATA RATES FOR GSM EVOLUTION (EDGE) TECHNOLOGY

**Enhanced Data rates for GSM Evolution (EDGE)**, also known as **Enhanced GPRS (E-GPRS)**, or **IMT Single Carrier (IMT-SC)** is a backward-compatible digital mobile phone technology that allows improved data transmission rates, as an extension on top of standard GSM. EDGE is considered a 3G radio technology. EDGE was deployed on GSM networks beginning in 2003-initially by Singular (now AT&T) in the United States.

EDGE is standardized by 3GPP as part of the GSM family, and it is an upgrade that provides more than three-fold increase in both the capacity and performance of GSM/GPRS networks. It does this by introducing sophisticated methods of coding of transmitted data, delivering higher bit-rates per radio channel.

EDGE can be used for any packet switched application, such as an Internet connection. EDGE delivered data services create a broadband internet-like experience for the mobile phone user. High speed data applications such as video services and other multimedia benefits from E-GPRS delivers increased data capacity.

EDGE requires no hardware or software changes to be made in GSM core networks. EDGE compatible transceiver units must be installed and the base station subsystem needs to be upgraded to support EDGE. If the operators already have this in place, which is often the case today, the network can be upgraded to EDGE by activating, an optional software feature. Today EDGE is supported by all major chip vendors for both GSM and WCDMA/HSPA.

**EDGE Evolution:**

EDGE Evolution improves on EDGE in a number of ways. Latencies are reduced by lowering the transmission Time Interval by half (from 20ms to 10 ms). Bit rates are increased up to 1 MBit/s peak speed and latencies down to 800 ms using dual carriers, higher symbol rate and higher order modulation (32QAM and 16QAM instead of 8- PSK and turbo codes to improve error correction. Signal quality is also improved using dual antennas improving average bit- rates and spectrum efficiency. EDGE Evolution can be gradually introduced as software upgrades, taking advantage of the installed base. With EDGE Evolution, end-user will be able to experience mobile internet connections corresponding to a 500 kbit/ADSL service.

*Student's Viewpoint About The Department :*



DCE is an institution with traditional values having modern touch. It is a Technical Institution imparting modern technologies as well as good human values. It gives a platform where students can well tackle the emerging technologies. The students graduate from this college with flying colours, and in the sphere of their progress sky is the limit.

**Rahul Gupta**  
(Roll No. 8173)



The college is situated in a well planned location having high quality infrastructure in a wide area of land and has completed eleven glorious years. It imparts quality technical education. It focuses in the right direction for betterment of each student. The students are being provided with excellent education as well as the all-round development of their personality by the time they pass out of this Institution. The young Engineers come back with flying colours in various fields.

**Malavika Tangry**  
(Roll No. 8141)



It is a technical Gurukul providing future "**TECHNOCRATS**" to the society. The motto of this technical hub is truly '**SHIKSHA EVEM SAHAYATA**'. The Institute provides a breakthrough for inspiring engineers. The modernity with traditional touch balances the personality of the students. The faculty focuses on individual monitoring of the students which helps the students for doing well in the society.

**Aashish Dhoundyal**  
(Roll No. 8116)