



# Dronacharya College of Engineering

## ISSUE

Vol vii issue LXXII

## Mechanical Engineering

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### From Editor's Desk :

The newsletter of this month is dedicated to **Hon'ble Babuji (Late) Shri Rao Dharampal**, Founder of **Dronacharya Group of Institutions** who left for heavenly abode on **21st July 2012**. With profound grief and sorrow, we pay our heart-felt tribute to him. Throughout his life, Babuji has been a man of vision, commitment and dedication with a great sense of philanthropy. He taught us the road-map of success and socio-moral values. His role and contribution to the upliftment of all classes of society has been unique. May God rest his soul in peace!



It is my privilege to warmly welcome the aspirants of Engineering into the portals of **Dronacharya College of Engineering**, one of the leading colleges dedicated to the cause of top-quality technical education with the motto of "**Shiksha Evam Sahayata**". With well-measured steps in the right direction with noble intention, we are scaling grand heights year after year. Determination, zeal, go-ahead temperament, an unflinching faith in Gurukul tradition and equal excellence in modern facilities are the strengths of every Dronacharyan.

The exemplary infrastructural facilities, the team of highly qualified, experienced & dedicated faculty and the exhilarating atmosphere with independent Placement Cell in the campus will surely take the students to enviable heights in terms of academia and industry. With the globalization of economy, opportunities for scientist-engineers are immense. Engineers must therefore pursue and enhance their engineering career, to realize the opportunities that the globalized world is presenting. **Dronacharya College of Engineering, Gurgaon** provides the opportunity for you to make the right choice, which will lead you to a successful and satisfying profession as a useful and responsible citizen of our great nation, India. In addition to this, we keep ourselves a step-ahead of others to provide our students a better platform to compete the professional world.

**Editor, (Dr. Sunil K. Mishra)**

### From HOD's Desk :

**"ACHIEVEMENT REQUIRES CHARACTER, DISCIPLINE, UNITED ACTION AND READINESS TO SACRIFICE THE INDIVIDUAL SELF FOR THE LARGER CAUSE."**



We, at **Dronacharya College of Engineering, Gurgaon** believe that true education exists not by words and ink but by an atmosphere. Proper development of faculty is essential not for themselves, but more for students, industry and the nation. With the help of education the students can cultivate critical thinking, action (creativity) and leadership qualities. We also encourage the faculty members to know the basic difference between the **Capability to work** and **Desire to work** and practice in work.

Faculty and students of our department have been working on research, innovative and application oriented projects. A number of research papers are published in National & International Journals.

I am grateful to the management, principal, dean academic, faculty and staff of the department of mechanical engineering for giving their invaluable suggestions, help and guidance from time to time for the development of the department.

*Head of Department, (Prof. S. K. Bagga)*

### Professional Trainings & FDP Conducted :

#### **Pro-Engineer wildfire Foundation + Advanced Course by CADD Center, Gurgaon**

Mechanical Engineering department organized a Pro / Engineer wildfire Foundation + Advanced course (Theory+ Practical) in lieu of Practical training for 60 students of IV and VI semester of Mechanical Engineering branch, during **18th June to 18th July 2012**. The topics covered in the training include solid editing, interface, creating sketcher geometry using sketcher tools, sketches for features, advanced sketching advanced patterns, relations and parameters, assembly with constraints. Assembly structures and skeletons sheet metal design etc. All the students were provided the course materials. The skill proficiency of the students was evaluated through conducting weekly tests.

#### **C++ Course by NIIT, Gurgaon**

30 students of ECE (IV & VI Sem) attended summer training course on C++ by NIIT, Gurgaon during **16th Jun to 30th Jun 12**. The topics covered in the training include Object oriented approach, creation of objects, Encapsulation and abstraction, Operators and decision making, Construct arrays, Linked list, Operation on single linked list, File Input and Output, Exception handling and Templates etc. The students were given practical exposure on programming skills. This training has added a new dimension to the programming skills for the students.

#### **Mobile Communication Course by Rawelcom**

38 students from ECE Department (IV & VI Sem) attended **Mobile Communication training course by Rawelcom, New Delhi** during **2nd Jul to 27th Jul 12**. 90 hours theory for the first three weeks was conducted in the campus premises of DCE and the 30 hours of practicals were conducted at RITT location in Dwarka. The topics like Basic Telecom Engineering, GSM & CDMA, RF & LOS survey, Site Elements, Quality Management, General Telecom Equipments were covered. The course has been found to be extremely useful for the students as per the feedback given by them.

#### **A Three-Day Faculty Development Program**

A three-day Faculty Development Program in partnership with software giant IBM was organized in **Dronacharya College of Engineering, Gurgaon** campus during **25th July to 27th July 2012**. In this program, the trainers from IBM enlightened and shared ideas on latest technical prospects as required by the corporate world under database technologies like DB2.

IBM corporate trainer, Mr. Anubhav imparted the various dimensions of technical concepts under DB2. The FDP was genuinely appreciated by the peer team of faculty which has invariably provided opportunity to understand the values and importance of DB2. Mr. Anubhav also highlighted the practical know-how of various applications under DB2. The participants exchanged their opinions on various issues related to DB2. FDP was attended by all the faculty members from each department of **DCE, Gurgaon and Dronacharya Group of Institutions, Greater Noida**. The training schedule for 3 days was successfully completed on **27th July 2012**.



**Mr. Anubhav corporate trainer, IBM delivering a talk on Db2**



**Faculty Members Attending Db2**

### **AICTE-CII University-Industry Congress 2012 :**

A Congress was organized by AICTE-CII in collaboration with **Mahamaya Technical University at Stein Auditorium, India Habitat Centre, New Delhi - 110003** on **27th July 2012**. **Prof. (Dr.) H. S. Dua, Head, Dept. of ECE & Prof. (Dr.) Jitender Kumar, Head, Dept. of IT** represented **Dronacharya College of Engineering, Gurgaon** at this national level symposium. The seminar was organized with the objective of bridging the gap between Academia & Industry. The entire program was divided into three sessions. More than 150 esteemed delegates from academia and industry came to attend the congress from various faraway places like Kanpur, Jaipur, Chandigarh etc. The house felt the vibrant presence **Prof. Dr. S. S. Mantha** (Chairman AICTE), **Prof S. K. Kak** (Vice Chancellor-Mahamaya Technical University) and **Ms. Kamna Aggarwalla** (Director-GDPA Fastners and Co - Chair CII Task Force).













**Hon'ble Dignitaries at the AICTE-CII Congress-2012**

**Prof. R. G. Mendiratta** (Director General ABES College, Ghaziabad), **Prof. Om Vikas** (Former Director ABV IITM Gwalior), **Prof. B. K. Gupta** (CPC Coordinator, MTU, Noida), **Mr. Amit Garg** (Asia Pacific Collections Leader, GE Capital & Chairman of Board, Satyug Darshan Technical Campus), **Mr. Lokesh Mehra** (Director, Education Initiatives, Microsoft India) & **Mr. Amit Chatterjee** (ASQ India) were the scholars and industry representatives present on the stage for the final session.

## Placement :

A large number of students got placed in various organizations. The details are given below:

Sr. No.	Photograph	Name & Roll No.	Organization
1.		Rahul Kumar Roll No. 11313	M/s i-Gate Patni
2.		Dheeraj Roll No. 11275	M/s i-Gate Patni
3.		Rahil Andleeb Roll No. 11312	M/s i-Gate Patni
4.		Mohit Yadav Roll No. 11298	M/s Mitsuba Sical Ltd.
5.		Hemant Khandelwal Roll No. 11281	M/s Mitsuba Sical Ltd.
6.		Kavita Gambhir Roll No. 11288	M/s Mitsuba Sical Ltd.
7.		Paramjeet Roll No. 11305	M/s Sandhar Technology Ltd.
8.		Harish Pal Sharma Roll No. 11279	M/s Sandhar Technology Ltd.
9.		Himanshu Singh Roll No. 11283	Indian Army
10.		Gaurav Verma Roll No. 11278	M/s Agilent Technology India Pvt. Ltd.

## Live Projects Undertaken By Students :

### 360cc DIESEL BIKE

It is well known fact that the fuels (petrol, diesel) are going to be depleted day by day and the cost is spirally increasing. A high fuel efficient, low fuel consumption and sturdy diesel bike is to be developed and produced. In this project a four stroke diesel engine is used and mounted on the bike chassis. It has some specific characteristics:

- ✦ Less vibrations
- ✦ Air cooling system for engine
- ✦ Fuel injection pump

#### 360cc single cylinder 4-stroke diesel engine is

- ✦ Connected to a wet multi-plate clutch and a synchromesh 4-speed gearbox for power transmission.
- ✦ A fuel injection pump is provided that spray diesel at high pressure into the combustion chamber.
- ✦ The power from crank shaft is transmitted through clutch to gear box. A multi-link chain is used for final drive.
- ✦ Telescopic fork is used at the front and a mono-shock suspension system is used at the rear so that vibrations could be absorbed.
- ✦ A 280mm disk with twin port single caliper is used for fast and comfort braking.

The prototype was tested and results are as below:

**Fuel consumption: 90 KMPL**

**Max. Speed : 85 KMPH.**



#### Project Guide:

Prof. (Dr.) S. K. Bagga

#### Team Members

- ✦ Gautam Prasad (Roll No. 10281)
- ✦ Gaurav Kataria (Roll No. 10280)
- ✦ Sharad Chauhan (Roll No. 10314)
- ✦ Praveen Kumar (Roll No. 11308)
- ✦ Manoj Kumar (Roll No. 11295)

### POWER GENERATION BY COMPRESSED AIR ENGINE

The aim of this project is to generate power through a modified internal combustion engine using compressed air as fuel. Compressed air is used as a fuel to drive the piston of the modified internal combustion engine. Efficiency of operation is achieved by the use of cold compressed air as there is no energy liberated in the form of heat. The non adiabatic expansion has the potential to enhance the efficiency of the engine. The rotating crankshaft is coupled to the dynamo to produce power.

A prototype of the system is fabricated using the following components:

- ✦ Compressed Air Tank: To store the compressed air from the compressor.
- ✦ 120cc, 4Stroke, Air Cooled, Single Cylinder, Horizontal Shaft, and Side Valves Engine.
- ✦ Cam: The integral part of the camshaft which requires to be modified.
- ✦ Dynamo: The device that is coupled to the engine to produce power.

The prototype is fabricated by modifying the camshaft of the engine. In order to suit the opening and closing timing of the valves the profile of the cam is modified from lobe shaped to the elliptical shape. By doing so the 4 stroke engine is converted into a 2 stroke engine eliminating the compression and expansion stroke. Compressed air is injected into the engine through the inlet thereby pushing the piston down. The reciprocating motion of the piston is converted into rotary motion of the crankshaft. The crankshaft is then coupled to the dynamo by means of a sprocket chain mechanism to obtain the desired speed.

Thus the power can be availed from the dynamo and can be utilized.



#### Project Guide:

- ✦ Prof. (Dr.) S. K. Bagga
- ✦ Mr. Surender Yadav

#### Team Members

- ✦ Aakriti Rupal (Roll No. 11267)
- ✦ M. Srikant (Roll No. 11292)
- ✦ Mahesh Yadav (Roll No. 11293)
- ✦ Neeraj Yadav (Roll No. 11302)
- ✦ Rakshit Sehgal (Roll No. 11316)

#### Students' Viewpoints :

**"The roots of education are bitter, But the fruits are sweet."**

I take pride on being a Student of Mechanical Engineering in **Dronacharya College of Engineering** which is imparting not only education but preparing us to face interviews and other competitive examinations. This is reflective of high caliber and commitment of the faculty and staff. I wish my college fraternity a bright future.



**Harsh Vardhan (Roll No. 11280)**

***"A Life of sacrifice is the pinnacle of art and is full of true joy."***

**Dronacharya College of Engineering** is one of the esteemed technical colleges in Haryana and the Department of Mechanical Engineering has state-of-art labs, dedicated faculty and staff members. The college not only imparts the technical knowledge but also teaches us how better we can serve the society & nation. After acquiring these attributes I have been selected in the Indian Army. I am really thankful to the faculty, staff and the HOD Mechanical Engg. Deptt. for shaping my personality.



**Himanshu (Roll No. 11283)**

***"Students life is like a river, we can't touch the same water twice because the flow that has passed will never pass again."***

Mechanical Engineering Department has given me not only education but also built my career and character. Faculty and invited HR personnel from reputed organizations groom us for communication skills, speaking power, group discussion and mock interview which helped me to achieve a good job with **M/s Sandhar Technology Pvt. Ltd. Gurgaon**. I am really very happy and express my deep sense of gratitude to the HOD, faculty and staff of the Department and the college.



**Paramjeet (Roll No. 11305)**

***"That country is the richest which nourishes the greatest number of noble and happy human beings."***

I am very happy to be associated with the Mechanical Engineering Branch of **Dronacharya College of Engineering**. The Faculty members groom us for personality development, communication skills, self esteem and confidence building etc. to enable us to have good jobs in reputed organizations. By acquiring these attributes I am placed with M/s Agilent Technology India Pvt. Ltd., Gurgaon.



**Gaurav Verma (Roll No. 11278)**