



Dronacharya College of Engineering

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Mechanical Engineering

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From Editor's Desk :

Technical education and practical learning is one of the most productive elements of engineering education that advocates questioning which prompt analysis, test assumptions, and explore possibilities.

We at **Dronacharya College of Engineering, Gurgaon** prepare our students to meet the challenges of their professional worlds by teaching them various technical and non-technical skills needed for their career growth.



Today, highly skilled and productive workforce is the need of the hour. To grab the opportunity of employability, our future engineers require skills that are dynamic in nature and relevant to the demands of today's society. We, at **DCE, Gurgaon** provide inputs for personal and professional development of our students.

Editor, (Dr. Sunil K. Mishra)



From HOD's Desk :

"Knowledge will bring you the opportunity to make a difference." - C. Fagin

The Department of Mechanical Engineering has earned the reputation of being the most distinctive department offering a gamut of highly technology oriented programmes designed and delivered to students.

The department has proud privilege of having exceptionally qualified and dedicated faculty to impart knowledge not only in theoretical but also in practical and case study problems related to the subjects. We, at the Mechanical Engineering Department are committed to provide modern and industry-oriented education to meet the requirements of the industries. Our students and faculty members are motivated to undertake innovative research work and technical projects which can be subsequently patented.

We have an Innovation Club in the college that will be functional for Grassroots Innovation Augmentation Network (GIAN) also. I believe with will-power, skill and involvement in extra-curricular activities, our students will bring laurels and accolades to the college in the years to come.



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

Summer Practical Training by CMC Academy-A TATA Enterprise :

A Summer **Training/Internship** program was organized from **24th June** to **16th July 2013** in the college campus by **Electronics and Computer Engineering** Department in association with **CMC (Computer Maintenance Corporation)** Academy, A TATA Enterprise, New Delhi on **"Embedded Systems"**.

The trainer, **Mr. Prateek Prakash**, nicely blended the training to be a composite of Theoretical and Practical knowledge. The curriculum was divided into following major topics:

- ✚ Operating System Concepts
- ✚ C & C++ on Windows & Linux
- ✚ 8/32 Processors
- ✚ Networking Concepts
- ✚ Device Drivers
- ✚ Software Skills
- ✚ Project making

The whole batch of twenty three students was divided into five groups and each group was provided with a unique project. Following projects were completed by the students:

- ✚ **Metro Train Prototype.**
- ✚ **RFID based Attendance cum Security System.**
- ✚ **DTMF based Controlled Area.**
- ✚ **DTMF based Controlled Wireless Robot.**
- ✚ **RFID based Library Management System.**

Each training day was divided into four sessions with each session of approximately 1 hr 30 minutes duration. The program took 20 working days to get completed. During this, the students were exposed to programming skills and were made to work on **Keil** and **Proteus** software. Once the interfacing of components was simulated successfully the participants were allowed to fabricate their projects on **development boards**. CMC Academy also monitored the performance of every student with the help of regular tests and presentations. The process of evaluation was so designed that the mentor could easily identify the students who may work on **"Live Projects"**.

The closing ceremony conducted on **16th July** was graced with the presence of Honourable Principal, **Prof. (Dr.) Mir Nasser Hussain**, acting as the Chief Guest, respected Dean Academics, **Prof. (Dr.) Onkar Singh**, All HOD's, guests from CMC, **Ms. Deepika Yadav**, **Mr. Rupesh Mishra** and **Mr. Prateek Prakash**. Our student coordinator, **Sukhwinder Kaur** welcomed them all and Project Coordinator, **Anuj Yadav** threw some light on the course contents, evaluation process and projects undertaken through a beautifully made video and presentation.



Winners of the training program were announced who will be given an exclusive opportunity to work on **Live Projects** at CMC Academy, Dwarka free of cost. The winners were: **Ravi Ahuja, Anshul Patro** and **Anuj Yadav** from Electronics and Computer Engineering department and **Aayushi Agrawal** and **Abhi Tanwar** from Electronics and Communication Engineering department. Our Event Coordinator, **Anshul Patro** delivered Vote of Thanks.



MoU being signed between Ms. Deepika Yadav from CMC Dwarka and Prof. (Dr.) Mir Nasser Hussain, Principal DCE, Gurgaon.



Burning of Program on EEPROM



Hon'ble Principal Prof.(Dr.) Mir Nasser Hussain and Dean Academics Prof.(Dr.) Onkar Singh during the Closing Ceremony.



The participants receiving the Certificates from Principal



The Winners!! From Left : Abhi Tanwar, Ravi Ahuja, Aayushi Agarwal, Anshul Patro and Anuj Yadav.

QIP on "Mathematical Computation Using Software Tools":

A group of four faculty members **Mr. Nitesh Kumar**, Associate Professor; **Mrs. Rita Yadav**, Associate Professor; **Dr. Jyoti Anand**, Assistant Professor and **Mr. Prakash Chandra Mittal**, Assistant Professor from **Applied Sciences & Humanities Department** of **Dronacharya College of Engineering, Gurgaon** attended one-week **Quality Improvement Programme (QIP)** on "**Mathematical Computation using Software tools**" organized by **IIT Roorkee**, Uttarakhand from **01st July** to **05th July 2013**. The objective of this QIP was to provide a forum for dissemination of innovative ideas, approaches and developments in mathematical software tools.

The subject experts from IIT, Roorkee **Dr. Rama Bhargava**, QIP-Coordinator; **Dr. Sunita Gakkar**, Course coordinator, **Dr. Sanjeev Kumar**, **Dr. D. N. Pandey** enlightened the participants on different mathematical software viz.

- ✚ **Excel** which is a spreadsheet application developed by Microsoft for Microsoft Windows and Mac OS X. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications.
- ✚ **MATLAB** which allows matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs written in other languages, including C, C++, Java, and Fortran and
- ✚ **Mathematica** which is computational software used in scientific, engineering, and mathematical fields and other areas of technical computing.

The program ended with a lecture delivered by **Prof. Rama Bhargava**, QIP Coordinator on "**Solution of Partial differential equation**" wherein she explained various physical problems and solutions related to PDE. The QIP was very much useful as it helped upgrade the knowledge as well as teaching skills of the attendees.



The faculty members Mrs. Rita Yadav & Mr. P.C Mittal receiving the certificates at QIP, Roorkee



The faculty members Dr. Jyoti Anand & Mr. Nitesh Kumar being given certificates of participation

Statue of Hon'ble Babu Ji Late Shri Rao Dharmpal: Unveiled:

The statue of **Hon'ble Babuji-Late Rao Dharmpal** was unveiled by **Shri Akhilesh Yadav, Hon'ble Chief Minister, Uttar Pradesh** on **19th July 2013** at **Dronacharya College of Engineering, Gurgaon**. Speaking on the occasion, **Hon'ble Chief Minister** stated that as a philanthropist, visionary and scholar, Late Rao Dharmpal ji had a concept of equal status for every strata of society and laid the foundation of **Dronacharya College of Engineering, Gurgaon**-a centre of imparting technical education. Hon'ble Chief Minister emphatically stated to carry the legacy of Babuji forward and his ideologies should be in our routine.

Recalling the past memorable associations with **Hon'ble Babuji, Shri Akhilesh Yadav** shared that he was the man who saw the strength of youth in rural as well as urban parts of India and provided a direction for them to contribute their potential in taking our Nation on the path of development. Paying his tributes, **Hon'ble Chief-Minister** said that Babuji has become a role-model for every youth of India and he would continue to inspire the youth for generations.

A number of academicians, technocrats, leaders, officers and other common men from different walks of life attended the ceremony and paid their homage. **Dr. Satish Yadav, Hon'ble Chairman, Dronacharya Group of Institutions** extended his heart-felt gratitude to the **Chief-Minister** for sparing his valuable time.



Hon'ble Chief Minister Shri Akhilesh Yadav being welcomed at the gate of Dronacharya College of Engineering, Gurgaon



Dr. Satish Yadav, Chairman, DGI escorting Hon'ble Chief Minister Shri Akhilesh Yadav to the dais



Hon'ble Chairman, Dr. Satish Yadav welcoming the dignitaries



Hon'ble Chief Minister, (U.P.) addressing the representatives



Shri Akhilesh Yadav, Hon'ble Chief Minister, Uttar Pradesh offering his homage



Shri Akhilesh Yadav, Hon'ble CM sharing the memorable associations with Babuji

Faculty Development Program on "ORACLE WEBLOGIC SERVER":

Dronacharya College of Engineering, Gurgaon conducted a two-day **Faculty Development Program** on "**Oracle WebLogic Server**" from **24th to 25th July, 2013** in association with the **Oracle Fusion Middleware**. The objective of this program was to train the faculty members of the Information Technology and Computer Science Engineering Department on the current scenario of cloud computing and the new software development techniques prevalent in the market.

The experts from Oracle India **Mr. Sukrit Thareja, Sales Consultant, Oracle fusion Middleware** and **Mr. Rohit Yadav, Sr. Technical Consultant, Oracle Fusion Middleware**, trained the faculty members about the practical as well as theoretical aspects of Oracle WebLogic Server, BPEL, BAM, CEL, Application Development Framework (ADF), JDeveloper etc. They also demonstrated the working of mobile based application and deployed it on simulator. More than forty Faculty members attended the program and got benefitted.

In order to make the students industry ready, the Departments of CSE & IT have planned such a program for them to provide exposure on Cloud Computing, **Oracle WebLogic server 12c** and other administrative basics of the WebLogic server.



Mr. Sukrit Thareja , Sales Consultant, Oracle fusion Middleware receiving the memento from Hon'ble Principal Prof. (Dr.) M. N. Hussain



Mr. Rohit Yadav, from Oracle India sharing his views on WebLogic server

Summer Training Program on "Work-Light Studio & OOPS Using Java":

Dronacharya College of Engineering, Gurgaon organised an exhaustive **Summer Training Program on "Work-light Studio and OOPS using JAVA"** in association with software giant IBM from **8th July 2013 to 19th July 2013**. The objective of the program was to share ideas and get practical hands-on web services, SOA, mobile web, Java Edition, multi-channel Java, COBOL Tools etc. **Mr. Manish** and **Mr. Ashutosh Tiwari, IBM Representatives** and trainers from **Web-Tech Labs Pvt. Ltd.** enlightened the participants on latest technical prospects required by the corporate world under modern software engineering technologies.

They also taught technical concepts of Java language syntax, including packages, classes, methods, variables, conditional statements, and control flow. In addition, this training program covered various new features of Java SE 5 and Java SE 6, such as generics, auto boxing, and annotations etc.

The program was full of insights for all participants as they learnt about different Java Application Programming Interfaces (APIs), focusing on the aspects of real-world like Collections, Input /Output (I/O), Threads, Apple iOS, Google Android, Microsoft Windows Phone and other utility classes. The hands-on training was based on live case studies which helped the participants understand the concepts and co-relate them accordingly.



Mr. Ashutosh Tiwari from IBM training the students



Hon'ble Principal Prof. (Dr.) M. N. Hussain presenting the mementoes to the trainers

National Workshop on "VLSI Designing using VARILOG Coding" :

Two faculty members Monika Thakur and Jyoti Yadav from **Electronics and Communication Engineering Department** of **Dronacharya College of Engineering, Gurgaon** attended a three-day National Workshop on "VLSI Designing using Verilog Coding" from **16th to 18th July 2013** organized at **Bhaskaracharya College of Applied Sciences, New Delhi** in association with JB Tech INDIA-a renowned project training company.

The objective of this workshop was to disseminate the knowledge by working on projects and training involving innovative designs of VLSI, CMOS technology, Shift registers, Power dissipation and design etc.

The workshop was inaugurated by **Dr. Jai Prakash Hon'ble Principal, Bhaskaracharya College of Applied Sciences (BCAS), New Delhi** followed by a lecture on "Applications of VLSI in real world" by **Ms. Mansi Jhamb, Assistant Professor, USICT, GGSIPU, Delhi**.

Another expert from industry **Mr. Rajiv Ranjan** shared his views on ASIC Design flow in which he covered the basic introduction, front end flow, design specification, RTL coding verification and synthesis and further presented basic introduction to Linux.

Overall, the workshop has been very useful in all aspects of VLSI designing as the participants also attended a lab session of **Verilog language syntax and semantics Linux** and learnt sequential circuits, multiplexer, de-muxes etc. The workshop ended with distribution of the certificates.

Summer Faculty Research Fellowship Program at IIT Delhi" :

Ms. Chesta Agrawal, Assistant Professor from **Computer Science Engineering Department** of **Dronacharya College of Engineering, Gurgaon** attended a six-week **Summer Faculty Research Fellowship Program (SFRFP)** from **June 03rd, to July 15th, 2013** at Mathematics Department of IIT Delhi. The objective of SFRFP was to help in inducting and inculcating research culture among the faculty of engineering and science institutes outside IITs.

During the program, **Ms. Chesta Agrawal** did her research work on **Homomorphic Encryption of Cloud Database** under the guidance of **Dr. R. K. Sharma, Head of Department (HOD), Mathematics, IIT Delhi**. The program was very much useful as she got the opportunity to approach the core CSE research topic of **Cloud Database** with a mathematical perspective of applying Homomorphic Encryption.

Moreover, a number of faculty members across the nation attended the **Summer Faculty Research Fellowship Program** got the opportunity to explore their research work under the guidance of faculty members of IIT Delhi.

Seminar on "Adobe & Education-Transform your Institution":

Mr. Sooraj Kumar Goyal, Assistant Professor, Department of Electronics & Computer Engineering represented **Dronacharya College of Engineering, Gurgaon** in the National Seminar on "**Adobe & Education-Transform your Institution**" organized by Adobe Systems seminar at **Le Meridien, Hall, New Delhi** on **25th July 2013**.

The objective of the seminar was to bring academicians, technocrats and entrepreneurs at one forum for dissemination of technical knowledge focusing on interactive eLearning courses and training materials that allows teaching fraternity to efficiently manage and measure student progress.

Mr. Sunil Kumar, from Adobe systems enlightened the attendees on usefulness of Adobe education community, Certifications Professional Curriculums and Online resources <http://www.adobe.com/education/hed>. He emphatically mentioned about **Adobe Forms Central** which is an online service that makes it quick and easy to create, distribute, and analyze electronic forms and surveys and talked about how to Publish PDF or web forms using free Adobe Reader software or a web browser. His lecture was followed by a Video lecture delivered by **Sir Ken Robinson Another speaker Mr. Hitashi Garg**, Consultant in Adobe Systems spoke about **Adobe Captivate* 7** which can be used for creating Multiple Choice Question papers and preparing Assignments. He also mentioned about **Adobe Connect 9** which is used for live training, live classroom, and live seminars with 2000 people capacity and live streaming.

The seminar concluded with **Mr. Abhishek Mukharjee** elaborating on **Digital Publishing Suite (DPS)** for higher education. He enlightened the audience on the importance of the same because today both the students and faculty expect information and news in real time.

The seminar was relevant and useful to the participants as they understood how Adobe Digital Publishing Suite (DPS) makes it easier to publish engaging digital content. They practices how to take advantage of accessible online resources for virtual classrooms and meetings. Moreover the participants also came to know how to design a professional, branded form using Adobe's rich drag-and-drop online form builder and customize sample templates to make them fit particular needs.

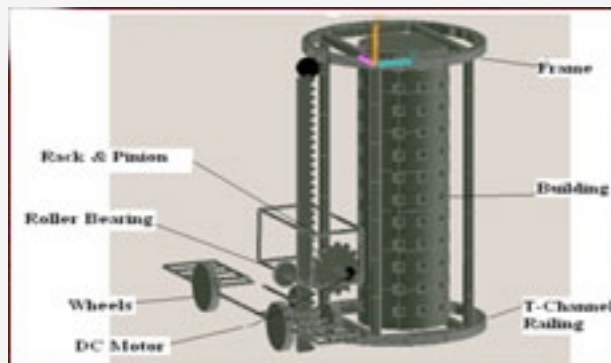
Patents Filed :

The Mechanical Engineering Department of **Dronacharya College of Engineering, Gurgaon** has filed two innovative projects for patenting with Intellectual Property India at New Delhi office.

Multipurpose Lift for Servicing of Building Externally :

Inventors of this lift are :

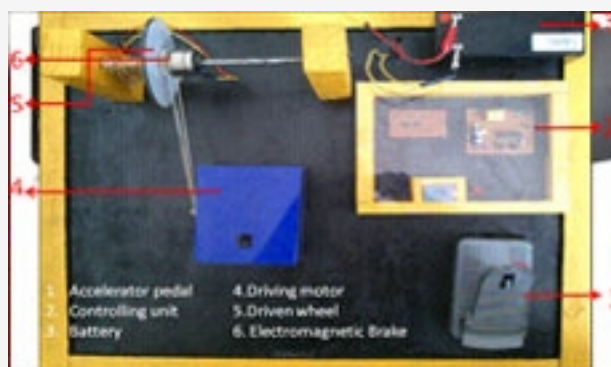
- Prof.(Dr.) S. K. Bagga-Professor & HOD.
- Prof. Vijay Wakhlu -Associate Professor.
- Surya Sharma-Roll No.13351, ME.
- Pushkar Malhotra-Roll No.13327, ME.
- Kunal Singh Katoch-Roll No. 13308, ME.
- Puneet Kumar-Roll No. 13326, ME.



Emergency Brakes Assist System using Accelerator Pedal :

Inventors of this system are :

- Prof.(Dr.) S. K. Bagga-Professor & HOD.
- Mr. Rajesh Arora-Associate Professor.
- Harkesh Yadav-Roll No.12288, ME.
- Nitin Yadav-Roll No.12304, ME.
- Nikhil Kaushik-Roll No.12302, ME.
- Rakesh-Roll No.12312, ME.



Unigraphics & Auto-CAD Course :

Thirteen students of Mechanical Engineering branch have completed training on Uni-graphics and Auto-CAD at **CADD Centre Training Services Pvt. Ltd., Gurgaon** during **1st July to 22nd July 2013**.

The training activity included following sessions :

- Introduction session
- Technical session
- Project based classes
- Project assessment

Topics discussed during training on Uni-graphics NX 7.5 were :

- Introduction, NX Graphical user interface.
- Creating & editing sketches.
- Creating primitives & datum features.
- Feature modelling commands like extrude, revolve, sweep, blend.
- Feature operations like mirror, array, trim, split, Boolean commands.
- Assembly modelling.
- Creating drafting views like projected view, orthographic view, section view.
- Adding dimensions, annotations, feature control frame, datum target, identification symbol, surface finish symbol, applying cross hatch, listing parts list, creating auto balloon, etc.
- Surface modelling commands.
- Sheet metal design and editing geometries.
- Converting solid body to sheet metal.

Establishment of Laboratories :

Civil Engineering Department of Dronacharya College of Engineering, Gurgaon has achieved the target of establishment of laboratories well in time. On **16th July 2013**, the installation and demonstration of Soil Mechanics, Transportation Engineering, Geotechnical Engineering and Environmental Engineering labs were completed. Laboratories like Structural Analysis, Fluid Mechanics, Surveying and Concrete labs are already functioning in.

Membership of The Institution of Structural Engineers, London :

Apart from membership of Indian Society of Technical Education (ISTE), 26 students of Mechanical Engineering Department from Vth Semester are enrolled for membership in The **Institution of Structural Engineers, London**, on **18th July 2013**.

Student Research Achievement of CSE Department :

- ✦ **Devansh Sood (12037), Lokesh Nagpal (12061), Devansh Hans (12036), Dhruv Tiwari (12039), Karan Sen (12638)** published "**Brain Computer Interface & Artificial Intelligence**" in IJAKECS ,Vol.1 No.1 pp.12-15 @ Academic Research Journals, (India), Jan-June 2013.
- ✦ **Jorawar Singh (14039)** published "**TSP**" in International Journal of Innovative Research and Development, ISSN 2278 0211, May 2013.
- ✦ **Prashant Sharma (13078), Rohtash Kumar(13092), Sukhman Preet Singh(13102), Sumit Tyagi (13103)** published "**Eye Blink Frequency Monitoring System For Capturing Images**" in International journal of innovative research in Engineering and Science" (IJIRES) May 2013.
- ✦ **Surbhi Arya (12116), Shashank Pandey(12106), Paras Chhabra (12078), Sumit Bisht (12112)** published "**Radio frequency identification (RFID) - The Frequency of the Future**" in Second National Conference on Emerging trends in Intelligence Computing and Communication EICC 2013, Galgotias University.
- ✦ **Sumit Ghulyani (12113), Swati Kalia(12119), Swati Sharma (12120)** published "**Cyber Physical Systems & Its Effect on Transportation**" in **GLOBAL RESEARCH ANALYSIS, April - May, 2013, Ahmedabad, Gujarat. (INDIA)**.
- ✦ **Shweta Garg (13103), Vinita Khosia(13247), Shrishti Vashist(13656), Shagun(13094), Shruti Aggarwal (13099)** published "**Microprocessors**" in **Indian Journal of Engineering, May 2013**.
- ✦ **Sukhman Preet Singh (13102)** published "**Eye Blink Frequency Monitoring System For Capturing Images**" in Discovery Sciences, VNM Publication, **May 2013**.

Student's Viewpoint :

"Listening, reading, meditation and discussion are the steps of learning a subject."

It gives me immense pleasure to be associated with Mechanical Engineering Department at our esteemed college **DCE, Gurgaon**. The institute is well known for its spectacular achievements in the field of academics and research fields. Under the guidance of our teachers, we bloom to shine as future professional engineers.



Surya Sharma
(Roll No. 13351) ME VI Sem

"Skill and confidence are an unconquered army."

As a student of **Dronacharya College of Engineering, Gurgaon**, I feel proud to be a part of Mechanical Engineering department. The faculty and staff members of our college are efficient in academics, research, project fabrication etc. They involve us in academics and other extracurricular activities of the department.



Kunal Katoch
(Roll No. 13308) ME VI Sem

"Patience and perseverance overcome mountains."

As a student of **Dronacharya College of Engineering, Gurgaon** I have been provided with a lot of opportunities to progress and realise my own capabilities. By taking part in various events my social and technical skills have been greatly enhanced. So I am very thankful to my H.O.D. and teachers for making available different opportunities and challenges, and providing support to face those challenges.



Ankit Singh
(Roll No. 13281) ME VI Sem

"Reason's whole pleasure, all the joys of sense, is in three words: health, peace and competence."

It is my proud privilege to be a part of **DCE, Gurgaon**. I am very happy to be associated with the Mechanical Engineering Department. Our department is dedicated to overall development of students. The faculty are always in contact with students who are also motivated to enhance technical skills. Our fully equipped laboratories provide hands-on training which enables us to be proficient in the subject.



Aman Manchanda
(Roll No. 13276) ME VI Sem