Dronacharya College Of Engineering
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In This Issue ....

ISSUE OF MECHANICAL ENGINEERING DEPARTMENT

From Editor's Desk :

"Life is full of smiles and sniffles: sometimes more smiles, sometimes more sniffles.
Roses have thorns or thorns have roses, it is the attitude that really matters."

The jubilant and jolting events in the recent past adequately illustrate and illuminate the meaning of the above cited Quote.

On one hand we were in a mood of utter jubilance on the festive occasions of Durga Pooja-cum-Vijay Dashmi and Deepawali that celebrates the victory of light i.e. virtue over darkness i.e. vice, the signing of the N-deal with the U.S. and India's maiden Moon mission Chandrayaan-I set for liftoff at Srihari Kota has catapulted Indian's reputation on the International scenario of meteoric rise in Science, Technology and Space Research. On microcosmic level DCE's Research and Training Cell has also been enviably activated after noted ***scholar of Science Dr. J. P. Dudeja*** undertook its challenging charge. Country to all this, there has been stunning news of ***"Global melt down"***.

The world economy has been jolted by this unbearable bolt from the blue. Recession, depression and a heart-felt melancholy have suddenly descended on the booming world economy causing an unanticipated crisis. Rumors rule supreme in this environment of global gloom. It is high time we in India develop a feeling of endurance and perseverance. Let us face this crisis defiantly, manfully and valiantly. Let us dedicate ourselves to our duty with a greater degree of commitment, diligence and sincerity. Let us dare to defy depression. Let us be ready to countenance and counter the rough weather of recession. Let us have an unshakeable, unflinching and unswerving faith in the universal laws of Nature.

I recall the inspiring words of Dr. Harivansh Rai Bacchan:

"Hai andheri raat to diya jalana kab mana hai?"
(It is a dark night. Who forbids us to light the lamp?)

Since every cloud has a silver lining, let us face the global crisis in a true philosophical spirit and wait and watch hoping a tidal wave to topple the mind-boggling melt down.

Editor, (Dr. R. C. Narula)

From HOD's Desk :

"The journey of a thousand miles begins with one step
The world steps aside for the man who never stops."

After the October Newsletter, November-2008 issue of the Newsletter brings a breath of fresh air from Mechanical Engineering Department. To stay in the education arena and grow, the organizations need to Constantly evolve, innovate and change systems for scanning environment effectively, come up with action plans and have persons to make it work and trust worthy. The faculty needs to be equipped with new knowledge, mind sets and values.

The new generation needs to be sensitive to social concerns and have tolerance for non-conformity, focused learning and have ability to take risk and capacity to deliver in diverse environment. The Newsletter serves as a vehicle for communication about the College infrastructure, faculty, latest highlights of merit holders, projects, placements and the awards. Our constant endeavour, to remain technically the best, is always on by way of improvement in the quality of our students to meet the latest demand of the industry under the leadership and able guidance of ***our Principal, Dr. B.M.K. Prasad.***

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

Live Projects Undertaken By Students :

Design And Fabrication Of Electric Bike

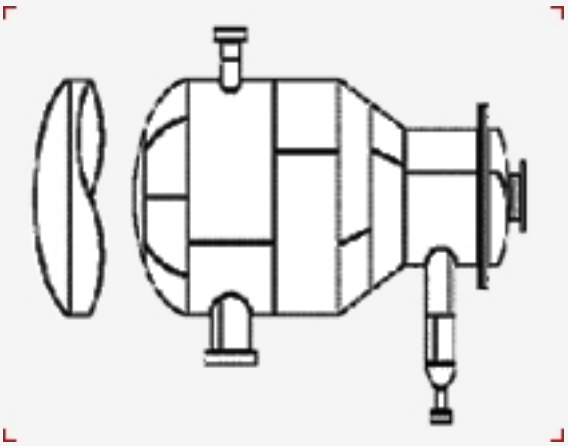
Electricity has always been an integral part of our life. It has been used in public transport vehicles like local trains. With the shortage of fossil fuels, increasing fuel costs, rising levels of pollution, electricity fuelled vehicles are the future of personal transportation. The present project dealt with design and fabrication of electric bike (cycle). Modeling, Design and Analysis of the frame was performed in Unigraphics. This was successful for a test run for 45 minutes with no decrease in voltage rating in the battery. The designed cycle is capable of taking 85 kg as Pay-load capacity.

Team Members
Mechanical VIII Semester

- Ajit Arya (7213)
- Amit Grover (7216)
- Avinash Kumar (7224)

Designing Of Pressure Vessel

An efficient design of pressure vessel is crucial for the expected performance of the operating region of both in terms of life and safety. The project dealt with the analysis of cylindrical shell, cover plate, flange, bolts, nozzle and gasket. Modifications for the conventional cylindrical shell and cover plate were made and their effect on related parts was estimated. Integrated approach through simulation was adopted for the new pressure vessel by modeling on various designer software consisting of cylindrical shell and cover plate.



Team Members
Mechanical VIII Semester

- Manish Mittal (7239)
- Kapil Gupta (7238)
- Amit (7215)

Evaluation Of Mechanical Properties Of Mild Steel Plate Under Submerged Arc Welding

The case study project is significant since mild steel is used in structure, case hardening, gears, free cutting steels, shafting, forging etc. Mild steel plates were tested for mechanical properties like hardness, tensile strength, yield point etc. Later on the plates were joined by submerged arc welding and the mechanical properties were estimated again. Also weld ability, harden ability, tensile test etc. were conducted for the same result.

Team Members
Mechanical VIII Semester

- Deepak Yadav (6223)
- Amit Kumar (7217)
- Surender Singh (7264)

Technology Focus :

Fracture Mechanics Using Finite Elements Analysis

Cracks and flaws occur in many structures and components, sometimes leading to disastrous results. Plate and shell formulations are widely used to analyze thin walled structures such as aircraft fuselages subjected to bending and pressure loads. Despite the practical importance relatively little research has focused on developing robust numerical methods to determine fracture parameters and simulate crack growth in thin plates. Fracture mechanics deals with the study of how a crack or flaw in structure propagates under applied loads. It involves correlating analytical predictions of crack propagation and failure with experimental results. The analytical predictions are made by calculating fracture parameters such as stress intensity factor in the crack region, which can be used to estimate crack growth rate. Typically the crack length increases with each application of some cyclic load such as cabin pressurization-depressurization in an airplane.

A few fracture parameters of interest are:

- Stress intensity factor associated with the three basic modes of fracture namely opening, shearing and tearing mode. In ANSYS, this command is limited to linear elastic problems with a homogenous, isotropic material near the crack region.
- J-integral may be defined as a path independent line integral that measures the strength of the singular stresses and strains near the crack tip. It can be defined as a path-independent line integral that measures the strength of the singular stresses and strains near a crack tip for any type of material.
- Energy release rate which represents the amount of work associated with a crack opening or closure.

Student's Viewpoint About The Department :

"Work spares us from three evils: boredom, vice and need."

Mechanical Engineering Department has given me not only education but also built my career andcharacter. Faculty and invited HR personnel from reputed organizations groom us for communication skills, speaking power, group discussion and mock interview which helped me **achieve a good job with M/s JBM 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.

Aditya Sharma
(Roll No. 7771)

"Wise men talk because they have something to say
Fools talk because they have to say something."

I take this opportunity to express my views about the Mechanical Engineering Branch of Dronacharya College of Engineering. The faculty always encourages us to do the work efficiently, to develop power of initiative and create new things. ***Qualities of personality and character have helped me to get selected with M/s Sona Koyo Steering Ltd. Gurgaon. through Campus Placement.***

I am really thankful to our respected Head of Dept. and faculty for shaping my personality and career.

Suresh
(Roll No. 7265)

"Adequate attention being given to Placement
justifies my judging on choosing the right College."

It gives me immense pleasure to be associated with the Department of Mechanical Engineering where I gained not only the technical knowledge (theoretical and practical) but also developed my personality. ***I sought admission in Mechanical Engineering Branch of this college because it has a reputation for 100% placement.***

I am really thankful to my H.O.D., Prof. S. K. Bagga, for grooming and nurturing me overall.

Saurabh Kaushik
(Roll No. 8875)

"Yesterday is history, tomorrow is a mystery,
Today is God's gift, that's why we call it the present."

I am glad to be associated with the Mechanical Engineering Branch. Mechanical Engineering Department has well equipped labs. Faculty trains us for personality development, motivation, communication skills, attitude and behavior, do's and don'ts during interview, self esteem and confidence building etc. so that we could get a good job in an organization of repute.

Amrit Raj Thakur
(Roll No. 8217)

"Time and Industry produce every day new knowledge."

I take pride on being associated with the Department of Mechanical Engineering of Dronacharya College of Engineering. Under the supervision and guidance of Prof. S. K. Bagga a number of projects were completed. He believes in development of students with innovative ideas, involvement in R&D activities and enhancement of capability with 360o orientation.

Harish Kumar
(Roll No. 8227)