



# DRONACHARYA COLLEGE OF ENGINEERING

## NOVEMBER NEWSLETTER, 2009

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In This Issue ....

- Editor's Desk
- HOD's Desk
- Live Projects Undertaken By Students
- Technology Focus
- Student's Viewpoint

### ISSUE OF MECHANICAL DEPARTMENT

From Editor's Desk :

***"We do not belong to the past dawns,  
but to the noons of the future."***




Nothing is impossible for a Determined Man, no matter how far-away the Goal is. Success does not mean the absence of failures; it means the attainment of ultimate Objectives. It means winning the war, not every battle.

To make our students aware of these ideas and winning strategies our college has well-planned Learning Methodology added by Personality Development Programme. We have an excellent feedback from the students that shows their keen interest in the Programme which is above the content of University. We always counsel them that present is the plinth on which the edifice of any success is built. Therefore, they have to fight tooth and nail in the present to win the battle of life.

Due to the convergent impact of Globalization and the market-driven economic changes in the world, the past decade has created a new set of challenges world-wide in the Technology.

***If you are a Person with the will to Win, Desire to Succeed, the urge to reach your Potential, Step In, Discover and Explore!***

 Editor, (Dr. Sunil K. Mishra)

From HOD's Desk :

***"Society is made up of both Optimists and Pessimists.  
Optimists invent planes while pessimists devise parachutes.  
We as Teachers should not get unnecessarily prejudiced  
and take all of them together along the path of Learning."***



We are undeniably very happy that Newsletter of **November 2009 issue from Mechanical Engineering Department** is being placed on our College website **[www.dronacharya.info](http://www.dronacharya.info)**. This master piece is an excellent source of information for the fraternity of DCE, Gurgaon. If mass production characterized the Industrial Revolution, individual creativity and brilliance marks the information revolution of this century. Our Graduates are one of the most sought-after in the broad spectrum of professional Engineering practices; they are found to be useful in their wealth of Knowledge and Skills in Technical and Management area. We aim to prepare a Knowledge workforce comparable to the best through instruction in the cutting edge technology. It also lays emphasis on Practical training & Live projects, so that our students can learn to be co-



operative and productive team members. Industry exposure provides these budding professionals the opportunity to work on current industry problems and to learn to thrive in the conducive work environment.

Our Department intends to focus its human and material resources on Research and Innovation in the field of Engineering and Technology. Our faculty members and students are already on the leading edge of Research and Development. We, as strong components of DCE rededicate ourselves to the saintly Mission of edifying our college a Role Model. We are sure that we shall thrive under the guidance and ever willing supervision of our **Hon'ble Principal, Prof. (Dr.) B. M. K. Prasad and Meticulous Dean Academics, Prof. (Dr.) Onkar Singh.**

 *Head of the Department, (Prof. (Dr.) D. S. Sharma)*

### Live Projects Undertaken By Students :

#### FOUR WHEEL STEERING SYSTEM

Four wheel steering is a system that allows the rear wheels to turn for maneuvering, rather than just following the front wheels. It is a relatively new technology that improves maneuverability in cars, trucks and trailers. At higher speeds, the rear wheels steer in the same direction as the front wheels. The result is more stability and less body lean during fast lane changes and turns because the front wheels don't have to drag non-steering rear wheels onto the path.

For parking and low-speed maneuvers, the rear wheel steer in the opposite direction of the front wheels, allowing much sharper turns. It should not be confused with four-wheel drive in which all four wheels of a vehicle are powered. In standard two wheel steering vehicles, the rear set of wheels are always directed forward and therefore do not play an active role in controlling the steering. In four-wheel steering systems, the rear wheels can turn left and right. To keep the driving controls as simple as possible, a computer is used to control the rear wheels.



#### Project Guide

- Prof. (Dr.) D. S. Sharma
- Prof. V. K. Sharma
- Mrs. Neha Chauhan

#### Team Members Mechanical VIII Semester

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- Arun Chawla (8161)
- Mahesh Kumar (8235)
- Sunil Kr. Gulia (8262)
- Vikas Kumar (8267)

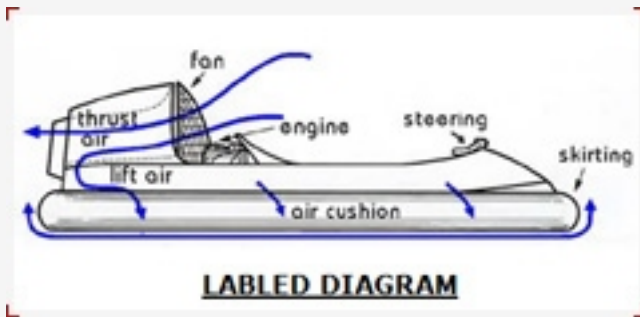
## DESIGN & FABRICATION OF HOVERCRAFT

A hovercraft or air-cushion vehicle (ACV) is a craft, designed to travel over any smooth surface supported by a cushion of slow moving, high-pressure air, ejected downwards against the surface below, and contained within a "skirt". Because they are supported by a cushion of air, hovercraft are unique among all forms of ground transportation in their ability to travel equally well over land, ice, and water. The main parts of a hovercraft are:

- Skirt
- Hull
- Lift Fan
- Thrust Fan

### Basic Design:

The lifting motion is controlled by a fan or fans so that an air gap can be formed such separation between the bottom of the hovercraft and the ground provides a motion platform, on which the friction force between the hovercraft and the ground reduces to a very small amount. Since a hovercraft does not have wheels, the forward motion is created through the propelling action, which is generated by the use of a propulsion fan and a set of fans.



### Project Guide

- Prof. (Dr.) D. S. Sharma
- Prof. V. K. Sharma
- Prof. (Dr.) Rajesh Kr. Tripathi

### Team Members Mechanical VIII Semester

- Amrit Raj Thakur (8217)
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- Gaurav Dureja (8225)
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## UNIT LOAD AUTOMATED GUIDED VEHICLE

Automated guided vehicles (AGVs) help to reduce costs of manufacturing and increase efficiency in a manufacturing system. AGVs can carry loads or tow objects behind them in trailers to which they can autonomously attach. The trailers can be used to move raw materials or finished products. The AGV can also store objects on a bed. The objects can be placed on a set of motorized rollers (conveyor) and then pushed off by reversing them. Lower cost versions of AGVs are often called AGCs or Automated Guided Carts and are usually tape-guided. An Automated Guided Vehicle System (AGVs) is a material handling system that uses independently operated, self-propelled vehicles guided along defined pathways in the facility floor.

### Types of AGV:

- Driverless Train
- Pallets Trucks
- Unit Load AGV's



### Project Guide

- Prof. (Dr.) D. S. Sharma
- Prof. (Dr.) Rajesh Kr. Tripathi

### Team Members Mechanical VIII Semester

- Heera Lal (8230)
- Kulbushan Verma (8234)
- Parveen Kumar (8242)
- Sunny Sharma (8264)

**Technology Focus :****PRODUCT LIFE CYCLE MANAGEMENT REVOLUTION IN MECHANICAL ENGINEERING**

The product life cycle goes through many phases, involves many professional disciplines, and requires many skills, tools and processes. Product life cycle (PLC) has to do with the life of a product in the market with respect to business/commercial costs and sales measures; whereas product life cycle management (PLM) has more to do with managing descriptions and properties of a product through its development and useful life, mainly from a business/engineering point of view. To say that a product has a life cycle is to assert four things:

- Products have a limited life
- Product sales pass through distinct stages, each posing different challenges, opportunities and problems to the seller
- Profits rise and fall at different stages of product life cycle
- Products require different marketing, financial, manufacturing, purchasing, and human resource strategies in each life cycle stage

It is claimed that every product has a life cycle. It is launched; it grows, and at some point, may die. A fair comment is that - at least in the short term - not all products or services die. Jeans may die, but clothes probably will not. Legal services or medical services may die, but depending on the social and political climate, probably will not. Even though its validity is questionable, it can offer a useful 'model' for managers to keep at the back of their mind. Indeed, if their products are in the introductory or growth phases, or in that of decline, it perhaps should be at the front of their mind; for the predominant features of these phases may be those revolving around such life and death. Between these two extremes, it is salutary for them to have that vision of mortality in front of them. However, the most important aspect of product life-cycles is that, even under normal conditions, to all practical intents and purposes they often do not exist (hence, there needs to be more emphasis on model/reality mappings). In most markets the majority of the major brands have held their position for at least two decades. The dominant product life-cycle, that of the brand leaders which almost monopolize many markets, is therefore one of continuity. Marketing management itself can alter the shape and duration of a brand's life cycle.

Therefore, the life cycle may be useful as a description, but not as a predictor; and usually should be firmly under the control of the marketer. The important point is that in many markets the product or brand life cycle is significantly longer than the planning cycle of the organizations involved. It offers little practical value for most marketers.

**Student's Viewpoint About The Department :**

***"I like a Teacher who gives you something to take home to think about besides homework"***

I am pleased to articulate my views about the Mechanical Engineering Branch where I earned not only Value Based Engineering Education but also shaped my Character and Personality through the synthesis of science and spirituality. I wish to be associated with the HOD, Faculty Members, staff and college for any kind of service in the future.

**Ankit Gosain**  
(Roll No. 9215)



***"You teach best what you most need to learn"***

It gives me enormous contentment to be coupled with the Department of Mechanical Engineering where I gained not only the technical acquaintance but also improved my Communication Skills and Personality.

***I am really thankful to my HOD, Prof. (Dr.) D. S. Sharma for grooming and nurturing me overall.***

**Saurabh Yadav**  
(Roll No. 9258)



***"An expert is a man who has made all the mistakes which can be made, in a narrow field"***

Dronacharya College of Engineering is one of the esteemed organizations in Haryana and its Department of Mechanical Engineering has formed global technocrats who demonstrate their significance. Here the faculty members not only convey Technical knowledge but also brush us for Personality Development.

I am really very happy to be associated with the Department and the College.

**Vikram Singh**  
(Roll No. 9271)



***"Education is a method whereby one acquires a higher grade of prejudices"***

I take conceit on being an undergraduate of Mechanical Engineering in Dronacharya College of Engineering. Every faculty member grooms us on Motivation, Communication Skills Attitude and Behavior, Self-Esteem and Buoyancy Building etc. They also enable us to have good job in reputed organizations. I wish to be associated with the faculty of this Department for shaping my career in years to come.

**Sourabh Choudhary**  
(Roll No. 9261)