Newsletter

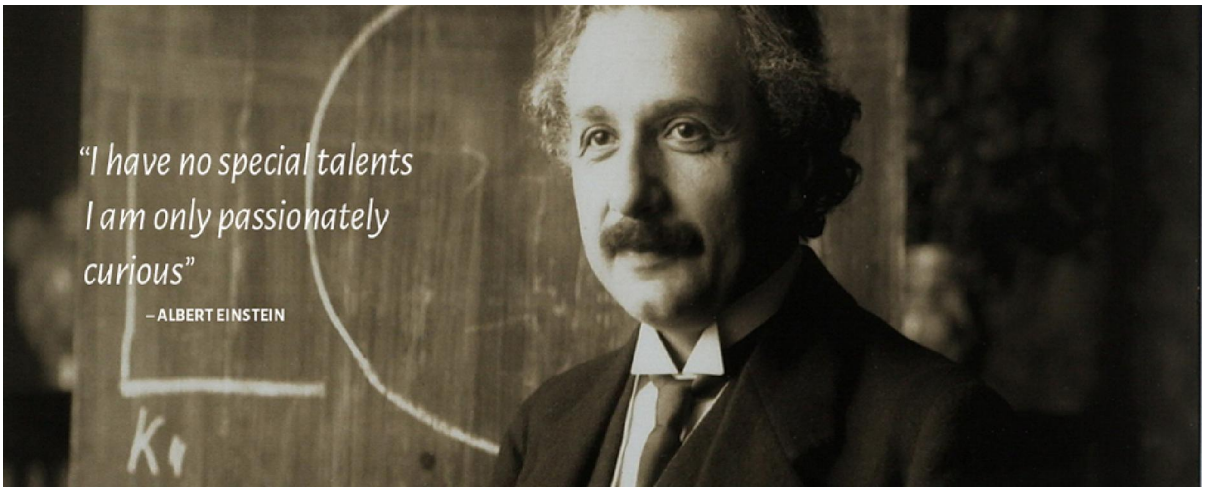
Volume 5, Issue 1, January 2015

Mechanical Aspire

Achievements in Sports, Projects, Industry, Research and Education

All About Nobel Prize – Part 13	Documenting the genius of Einstein

The Nobel Prize in Physics 1921 was awarded to Albert Einstein *"for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect"*.



The name "Einstein" is synonymous with genius. A cultural icon of the 20th century, the mere mention of his name prompts many to quote his famous mass-energy equivalence formula, $E=mc^2$.
But what do we really know of the man behind that equation; his home life, his dreams, his aspirations? To allow a glimpse into his private world, Princeton University and the Hebrew University of Jerusalem have now released the collected works from Einstein's early life in digital form online for anyone to read.

Einstein lectured at Princeton University from 1933 until his death in 1955, and it is this university that has taken charge of producing a new digital archive of around 5,000 documents in 13 volumes. The volumes of work have also been physically published and so far comprise the period of Einstein's life from his youth up to the year 1923, when he was 44 years of age.

Under the editorship of Diana Kormos-Buchwald, professor of physics and the history of science at the California Institute of Technology (CIT), **The Einstein Papers Project** is predicted to produce a complete set of works totaling around 30 volumes.

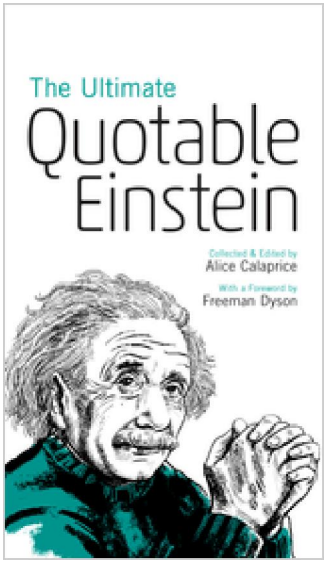
This enormous number of volumes is due to the fact that Einstein bequeathed some 80,000 documents to the Princeton and Hebrew universities. Tasked with collating, organizing, translating, and publishing these vast tomes, the Einstein Papers Project still needs to produce versions of these volumes that carry on from 1923 through to 1955.

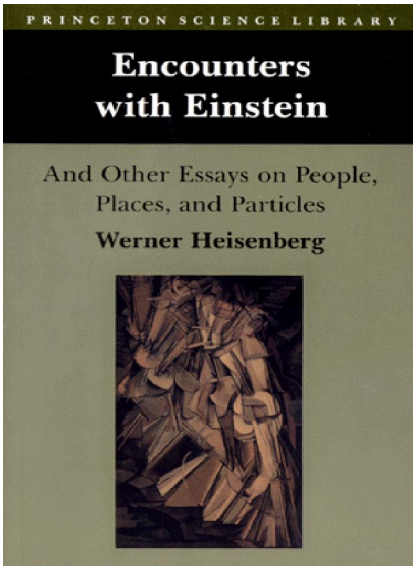
However, given that much of the documentation was not delivered neatly bound in chronological order, ready for easy printing but, rather, stored in an assortment of shoeboxes, attics, and other hidey-holes, the task is made that much harder than even its sheer volume would suggest.

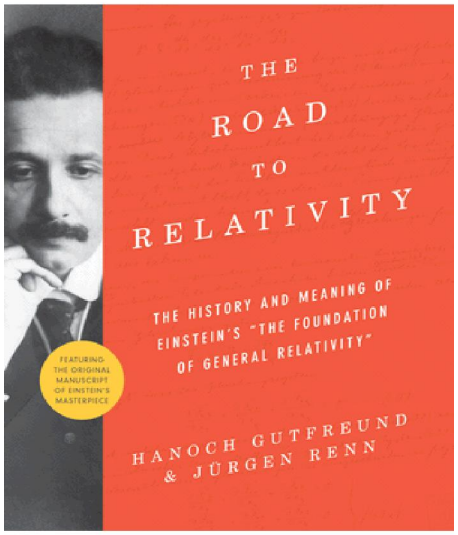
The works that have been printed so far range from letters, notebooks, postcards, diaries, notebooks, and school reports. It is just one of these school entrance reports alone that shows a glimmer of Einstein's true personality, and allows one to guess at his precocious nature.

For example, in 1895, Einstein failed to gain entry to the Swiss Federal Polytechnic, and his entrance report for the Aargau District School evaluates him as having "great gaps" in his knowledge of French, and a need to redo his work on chemistry.

One can only imagine the precocious young Einstein struggling to do work that held no real interest for him. However, the following year he must have knuckled-down a bit as, by 1896, he graduated from school with top marks in physics (of course) along with algebra and geometry, a reasonable grade in chemistry, and his lowest mark – you guessed it – in French.







This is just one example in a plethora of fascinating tidbits. Merely glancing through the many tables of contents and alighting on the odd interesting page or two can fill up a number of enthralling hours exploring the back-story of Einstein.

Everything from his finally being awarded a Nobel Prize after more than a decade of nominations, through to his personal worries on political tensions in Berlin, and on to his musings on art in Spain or an analysis on superconductivity, the Einstein document archives are a treasure trove of captivating information for academics, students, and historians alike.

Dwelve into Einstein's writings at http://einsteinpapers.press.princeton.edu/

Cricket

First time in SSN College of Engineering the staff cricket trophy was conducted in association with DABC Builder's Chennai and successfully concluded.


Ebenezer

Semi Finals

Mr. Ebenezer scored a captain's knock of a quick half century (57 runs) with three sixes in the semi-final match against Sri Ramachandra Medical College and built a strong foundation path for victory. But unfortunately because of the pressure build toward the end, the match was lost to the visitor by 7 runs (150/7 in return to 157/2 in 20 over's). Mr.D.Ebenezer received "Man of the match" award for the Semi Finals Match.

In another Semi-final Match Sathyabama University beat Sri Muthukumaran Institute of Technology.


Senthilkumar

Finals

SSN staff cricket team finished Fourth among 24 staff team participated in the tournament. Our principal Dr S Salivahanan gave the trophies in the awarding session.

First place: Sri Ramachandra Medical College
Second Place: Sathyabama University
Third Place: Sri Muthukumaran Inst of Tech.
Fourth Place: SSN College of Engineering

Dr Senthilkumar received award for the best bowler of the series.

Tennis

The third edition of SSN OPEN 2K14 , a National level Tennis tournament was held from 16th December, to 19th December, 2014 at our college premises.

Irfan Hussain, alumni of mech and currently doing Masters at Anna University won the Championship .

Info to Alumni	Department Update

Mr. C. Arun Prakash had received his masters and was awarded the gold medal for securing University first rank during the graduation day, held on 12-12-2014 at the MIT campus, Anna University.

Dr. M. Rajaram, Vice Chancellor of Anna University presented him the degree certificate and Gold medal. Dr. S. Christopher, Distinguished Scientist, Centre for Airborne Systems was the Chief Guest for the day.

Bala sundaram .Palanisamy, Mechatronics lab assistant, completed B.E. In Karpagam University

External Recognition

Dr. N. Lakshmi Narasimhan Reviewed two chapters of a Heat Transfer Book, on invitation from McGraw Hill Series publishers.

Dr.S.Vijayan has been appointed as a member in prevaluation Mechanical Board meeting as well as Chairman for phase 1 central valuation for UG and PG examination.(8-12-2014)

Prof.K.Subbaiah ,
Dr. K. Jayakumar , and
Dr.L.Poovazhagan

have been approved as Research Supervisors by Anna University, Chennai

Dr.S.Sureshkumar was invited to deliver guest lecture titled "**Application of Modeling and Simulation technique to Practical Fields of Mechanical Engineering"** at **E.G.S Pillai College of Engineering at Nagapattinam**.on 12 December 2014.

Dr.S.Sureshkumar was invited to deliver a guest lecture on 15 and 16th December on **FDP program** conducted at **Saveetha Engineering College**, Thandalam on the topics "**Design of bevel and worm gears"** and **"Design of Cams and wire rope drives".** The FDP was sponsored by center for faculty development, Anna University Chennai

Recognition by IIT Bombay

IITB has recognised SSN as a **Nodal Centre for co-ordinating the Robotics Lab** activities of 13 colleges.

Jayakumar

SSN Teachers Team won the Proficiency Prize (of Rs. 12,000) in the finals of e-Yantra Teachers Robotics Competition on 23 December 2014.

The team members are Dr. K. S. Jayakumar, MECH, Dr. G. Satheeshkumar, MECH, Dr. M. Balaji, EEE, Dr. R. Jayaparvathi, ECE

Jayaparvathi

Satheeshkumar

Balaji

Programs attended

Ramana

Dr. A. S. Ramana & Mr. B. Jayakishan attended Indo German Centre for Sustainability Workshop on Improving Energy Sustainability - Conventional & Renewable (4 & 5 Dec)

B. Jayakishan,attended two day workshop on I.C. Engines Testing at Sri Venkateshwara College of Engineering, Sriperumbudur (27&28, Nov)

Jayakishan

Arun Prakash. C, attended a seven days FDTP on Automobile Engineering at Anna University, MIT Campus (17 to 24 Dec 2014)

Dr. A.K.Lakshminarayanan and Dr. R.Damodharam attended a one week faculty development and training program on "Manufacturing Technology -II" at College of Engineering, Anna University, Guindy (8 to 14 Dec 2014)

Research Activity

Dr M.S.Alphin's Technical Paper titled "Design of Compliant Mechanism Microgripper Utilizing the Hoekens Straight Line Mechanism" was presented and Published in the International Conference on Advances in Design and Manufacturing (ICAD&M'14) held at NIT Trichy (7-12-2014). Co-Authors: Gopal . M (Ph.D.Scholar /Mech./SSN), Alphin.M.S, Bharanidaran R and Ramesh T.

Dr. K. Jayakumar presented a paper with the title of "Synthesis and machinability studies of A356 alloy-15% SiC composite" in the International conference on All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014) conducted by IIT Guwahati. (13-12-2014)

Dr. N. Lakshmi Narasimhan and G. Srinivasan (III Year Student), presented a paper titled, "A Comparative Study On The Performance of A Latent Heat Thermal Storage Unit With Multiple PCMs and Dispersed High Conductivity Particles" in the International Conference on Energy and Sustainability in Engineering Systems (ICESES), Organized by CIT Coimbatore, TN, India between Dec. 16-18, 2014.

Dr. N. Lakshmi Narasimhan and S. Shashank (2013 Passed out student) presented a paper titled, "A discussion on the optimal performance of an air standard dual cycle with heat loss during combustion", in the International Conference on Energy and Sustainability in Engineering Systems (ICESES), Organized by CIT Coimbatore, TN, India between Dec16-18, 2014.

Dr.M. Dhananchezian had his paper on " Study of Tool Wear and Chip Morphology in Turning Ti-6Al-4V Alloy under Cryogenic Cooling," published in the International Journal of Applied Engineering Research, Vol. 9 (23), pp. 22423 - 22434. (co authored by M. Pradeep kumar, and S. Rajesh), 2014.

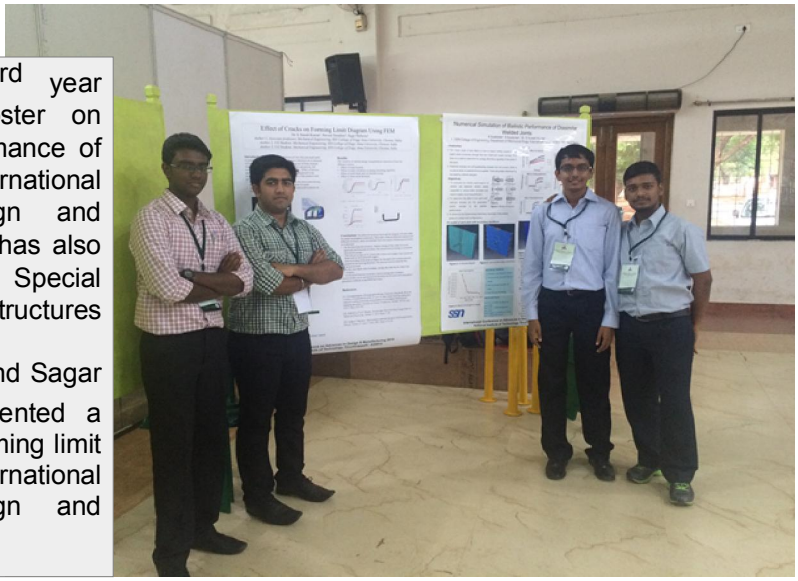
Project Proposal submitted

Dr. K. Babu submitted a project proposal titled "Experimental Investigation of Minimum Quantity Lubrication (MQL) during CNC Turning of AISI 4140 Steel" for Rs. 4,07,500/- to Tamilnadu State Council for Science & Technology

Student Activities

K Sushinder and S Sudersan of 3rd year mechanical presented a technical poster on “Numerical Simulation of Ballistic Performance of Dissimilar Welded Joints” in ICAD&M (International Conference on Advances in Design and Manufacturing) at NIT Trichy. This paper has also been preselected for publication in the Special Issue of International Journal of Vehicle Structures and Systems.

Naveen Yesudian and Sagar Malhotra of 3rd year mechanical presented a technical poster on “Effect of crack on forming limit diagram using FEM ” in ICAD&M (International Conference on Advances in Design and Manufacturing) at NIT Trichy.



The project guide and co-author for both the papers is Dr. S. Suresh Kumar.

The theme of the conference was " Sustainability in Design and Manufacturing". Dr. Ramanarayanan, FNAE, OS and director,GTRE, DRDO was the chief guest. There were totally 334 papers published in the proceedings of the conference. The majority of the papers involve analyses of composite material behavior like MMCs and Natural fibre reinforced composites under machining processes. There were also several product development ideas and prototypes displayed in the technical expo like the 3D Printing machine , Driving simulator which provides a real time driving experience and evaluates the user performance on various terrains. Some of the Design and development projects were shock absorbing cycle wheel, Briquette machine , tool wear measurement system and several other projects involved robotics.

In-Plant Training

. Shashaank.S.Yogesh and Tarun Subramanian of II year Mechanical B section have undergone two weeks in-plant training at Ashok Leyland R&D center

Mech in Human Flag Formation

Some of our mechanical students were a part of "My Flag My India" organised on 07th Dec, 2014 at YMCA Grounds. This was organised to set a Guinness record for largest human flag formation of a national flag in the world.

"Over 50000 volunteers all around Chennai participated in this record breaking event and I am proud to be a part of it" says our Final year student Rajkumar.

Faculty write up -1

Behaviour Management

A Faculty Development Program on "Behaviour Management" was conducted on 22 & 23 December 2014 at Central Seminar Hall (ECE Block) for the Assistant Professors of SSN Institutions who have joined in 2011 and afterwards. Prof. Gurubharathi, Director Training, ELEOS and Ms. Radha Subramanian, Behaviour Consultant, ELEOS handled the sessions and Ms. W. Jemima, Student Counsellor coordinated the program- Arun Prakash, Jaykishan and Vimal Sam Singh attended.

Mr.R.Vimal Sam Singh reflects.....

We attended a two day faculty Development Programme on Behaviour Management 0n 22nd and 23rd December at SSN College of Engineering. The Programme was conducted by ELEOS consultants. Training on Techniques to handle classes, students as well as an opportunity for Self Introspection was given.

The Training provided deep insights on how to understand the thoughts of different students and change lecturing strategy accordingly. The session enlightened on the plethora of Psychological problems that the present generation is facing and provided the faculty an opportunity to learn how to identify students with such problems and nurture in a positive way. In short the session highlighted that, the job of a faculty is not only quenching their technological thirst but also meet their psychological needs and prepare the students to become Future leaders.

Faculty write up -2

Ramana and Jayakishan reflect on their experiences at IIT Madras...

REPORT ON IGCS WORKSHOP ON IMPROVING ENERGY SUSTAINABILITY - CONVENTIONAL AND RENEWABLE - IITMADRAS ON DEC 4-5, 2014

Prof. Dr. Krishna Vasudevan, Dept. of Electrical Engg., IGCS area coordinator Energy welcomed the gathering. Prof. S. K. Das, Dean (Acad. Research), IIT Madras delivered inaugural address and lauded the role of Germany's technical institutions interactions with IITM and in particular the IGCS contributions. He mentioned that 16 leading economies around the world were responsible for over 71% of world energy. Mr. Achim Fabig, German Consul General, Chennai delivered talk on Germany's initiatives on improving sustainability.

Prof Dr. Behrendt, Department for Energy Technology, Head of Chair for Energy Process Engineering and Conversion Technologies for Renewable Energies, TU Berlin, IGCS Area Coordinator Energy delivered a lecture on products and problems associated with biomass pyrolysis and gasification and the effects of different flame behaviour in nitrogen gasification process.

Dr Vinu, IITM talk focused on Thermochemical conversion of biomass, coal, algae and MSW to fuels and useful intermediates. He discussed how microwave energy can be effectively used in pyrolysis of municipal waste. Mr. Ivo Schneider discussed about the liquefaction of coal and biomass yielding coal oil. Sabrina Kruegel, Department for Energy Technology, TU Berlin presented fast pyrolysis characterization of medium and high-ash coals of Indian origin.

Prof. Dr. Paschereit, Chair of Fluid Dynamics, Hermann-Foettinger-Institut, TU Berlin elaborated methods for taming turbulent flames by controlling combustion dynamics. Prof. Dr. Satya Chakravarthy, Dept of Aeronautical Engg., IITM spoke on efficiency improvements on Gas Turbines and various aspects of combustion instabilities. He discussed the various infrastructures available with the National Centre for Combustion Research and Development (NCCRD) at IIT Madras.

Dr. David Marten, TU Berlin, Chair of Fluid Dynamics, Hermann-Foettinger-Institut, TU Berlin spoke on wind turbine design using QBlade: open source software. Dr. Alena Bach, Chair of fluid dynamics, Hermann-Foettinger-Institut, TU Berlin explained load control technique for wind turbines. Dr. Christian Navid Nayeri, Chair of Fluid Dynamics, Hermann-Foettinger-Institut, TU Berlin talk dealt on vortex generators for wind turbines as retrofit performance boosting solutions. Dr. Joshua Gray, Chair of Fluid Dynamics, Hermann-Foettinger-Institut, TU Berlin delivered a lecture on Windgas. He discussed how pulse detonation combustion is useful not only for propulsion but also for energy production.

Prof. Dr. Sundararajan, Dept of Mechanical Engg., IIT Madras detailed the PAN-IIT initative on direct Steam Generation using solar Concentrators and associated Power/ Thermal applications. Lecture on critical review of German Experience on distribution grids with high penetration of renewable generation was delivered by Dr. Uwe Kaltenborn, Head Portfolio Management, Maschinenfabrik Reinhausen (Germany). He mentioned that the German target for 2050 was 60% energy from renewables. Prof. Dr. K. Sreenivas Reddy, Dept of Mechanical Engg., IIT Madras explained the solar photovoltaic concentrators for poly-generation. Dr. Anand, Dept of Mechanical Engg., IITM spoke on promise and challenges of biodiesel as a fuel for future. Field visit to solar thermal steam generation plant at Pathashala near Chengalpet was also arranged. The workshop was useful & informative.

Faculty write up -3

e-Yantra Robotics Lab Inauguration at SSN College of Engineering

Report by Dr.K.S.Jayakumar

SSN College of Engineering inaugurated its state of the art Robotics Lab under e-Yantra Lab Setup Initiative (eLSI) of IIT Bombay on December 23, 2014. Forty faculties from 7 Engineering Colleges and 3 Polytechnic Institutes in Chennai Region participated in the inauguration.

Dr. S. Salivahanan, Principal SSN College of Engineering,

Prof. KeerthivasanRamamirudam IIT Bombay,

Dr. Mohan, Director, CFD, Anna university,

Dr. M. Sekar, Principal, Eswari Engineering College,

Dr. R. Varatharajan, Principal, Ganadipathy Tulsi's Jain Engineering College

lit the lamp during the inauguration

The finals of e-Yantra Robotics Teacher Competition (eYRTC) were also held on the occasion which was the culmination of the two day eYantra Robotics workshop held on June 30, 2014. The theme of the competition was valet parking robot, in which the robot is programmed to autonomously park in respective parking space. KCG team won the First Prize and SSN Team won a Proficiency prize.

11 Robotics Labs inaugurated simultaneously

Robotics Labs of 7 Engineering Colleges and 3 Polytechnic Institutes in Chennai Region were inaugurated by video conferencing from SSN.

Each college was given out participation certificates and fire bird V robot kit for participating in eLSI.

Dr. S. Salivahanan, Principal SSN College of Engineering, Prof. Keerthivasan Ramamirudam, Dr. Mohan, Director, CFD, Anna University have inaugurated Robotics lab at SSN by ribbon cutting. This lab is located opposite to Drawing Hall in the mech block eastern Wing

e-Yantra is a project initiated by IIT Bombay to spread education in Embedded systems and Robotics. This project is sponsored by Ministry of Human Resource Development (MHRD) through the National Mission on Education through ICT (NMEICT). Center for Faculty Development (CFD), Anna University, Chennai has initiated the e-Yantra project in Tamil Nadu. SSN has been chosen to be a Nodal Centre for this initiative.

One of the main initiatives of e-Yantra is e-Yantra Lab set-up Initiative (eLSI) that supports infrastructure creation in various colleges by providing a platform for training teachers both in theory and applications of Robotics, in addition to providing guidance in setting up a Robotics laboratory in the college. Through this model e-Yantra has enabled the creation of an eco-system at the engineering colleges such that students can be mentored by the teachers trained by e-Yantra to implement projects in their own Robotics labs.

Amazing Innovations 1 — Power from Players...

In Rio de Janeiro, soccer legend Pelé recently helped launch Shell's Morro da Mineira Project has opened a soccer pitch in the favelas that captures the energy of players and uses it to sustainably power floodlights at nighttime.

Located in the Morro da Mineira favela, the pitch has long been a popular practice space for kids in the neighborhood. It's now been renovated with tiles located underneath the surface that become charged when a force is placed upon them. Throughout the day, the energy of the players using the field is captured and stored as electricity, while solar panels also collect the sun's energy. Previously, kids had to stop playing when night fell, but the new system is now used to power floodlights that make the space safe even when it's dark. The community benefits from extended access to the resource, keeping kids healthy and out of trouble, while avoiding the high bills that typically come from non-renewable power. www.shell.com

Amazing Innovations 2 — Hands Free Umbrella

http://nubrella.com/what-is-nubrella/

Holding your arm up in the air for an extended period of time does not fit into our mobile-centric multi-tasking lives nor does relying on the inferior protection of a raincoat. Nubrella solves this century-old behavior with a breakthrough superior hands-free solution for today's technology-driven society.

3Nubrella is a breakthrough product innovation. It is a hands-free, non-invertible umbrella/weather protector, conveniently worn backpack-style.

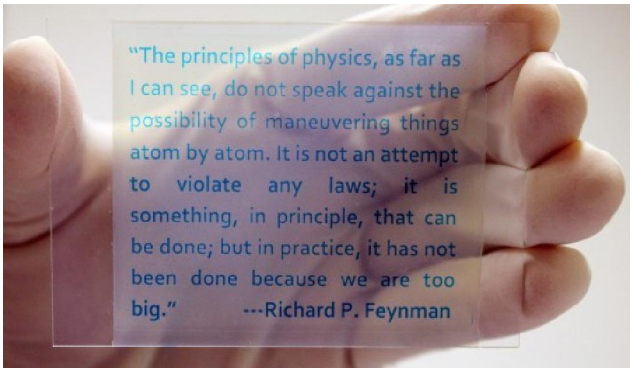
New open front for ***perfect vision*** & ***non-interfered communication***
Functions like a hood going back and forth when needed
Extended coverage in front protecting ***you and smart devices***
Easily stores down users back – ***no need to carry anything***
Backpack style worn for strong support – ***impossible to invert***
Weighs only 2.5lbs.

https://www.youtube.com/watch?v=dFxRlWgjg3U

Amazing Innovations 3	Novel Rewritable paper

An attractive alternate to regular paper, UC Riverside-developed technology helps address increasing problems in environment and resource sustainability http://ucrtoday.ucr.edu/26007

Chemists at the University of California, Riverside have now fabricated in the lab just such novel rewritable paper, one that is based on the color switching property of commercial chemicals called redox dyes.



The dye forms the imaging layer of the paper. Printing is achieved by using ultraviolet light to photobleach the dye, except the portions that constitute the text on the paper. The new rewritable paper can be erased and written on more than 20 times with no significant loss in contrast or resolution.

The rewritable paper is essentially rewritable media in the form of glass or plastic film to which letters and patterns can be repeatedly printed, retained for days, and then erased by simple heating.The paper comes in three primary colors: blue, red and green, produced by using the commercial redox dyes methylene blue, neutral red and acid green, respectively. Included in the dye are titania nanocrystals (these serve as catalysts) and the thickening agent hydroxyethyl cellulose (HEC). The combination of the dye, catalysts and HEC lends high reversibility and repeatability to the film.During the writing phase, ultraviolet light reduces the dye to its colorless state. During the erasing phase, re-oxidation of the reduced dye recovers the original color; that is, the imaging material recovers its original color by reacting with ambient oxygen. Heating at 115 C can speed up the reaction so that the erasing process is often completed in less than 10 minutes.

Amazing Innovations 4	Foldable desk cum bag from used cardboard

A good education is of vital importance for those seeking a way out of poverty — But in many parts of India, there is a serious shortage of basic necessities such as school bags and proper classroom furniture. Looking to solve both of those problems in one move, is using discarded cardboard waste to create school bags which unpack into small desks.

In many parts of India, there is a serious shortage of basic necessities such as school bags and proper classroom furniture. Looking to solve both of those problems in one move, is using discarded cardboard waste to create school bags which unpack into small desks.

Aarambh is a non-profit working out of New Bombay, and their Help Desk looks to tackle many of the problems faced by children in India's poorer classrooms. The organization first collects old cardboard boxes sourced from recycling centres, offices and retail stores, before a stencil design is overlaid as a template for cutting out the desk/bag. Once cut, the cardboard can be folded into a book bag for children to carry their texts to and from school, rather than the plastic bags many used before.

At the start of every day, the bag can then be unfolded, and refolded into a small desk, improving the children's comfort and posture. It will also help them to avoid eyesight and handwriting problems which can arise from reading, writing and sitting all on the floor. The Help Desks were distributed to schools in the rural areas of Maharashtra.The solution not only helps the children and helps recycle discarded cardboard, but each desk only costs 20 cents to produce. How else could waste produce be upcycled and put to better use?

Watch the action at http://www.youtube.com/embed/ZPUFpEbkOoc

Appeal to Alumni	Request for Support for Accreditation

The quality of any educational program in India is ascertained by the National Board of Accreditation (NBA). NBA has criteria that are on par with that of other Global Accreditation Bodies. We have now applied for accreditation for our UG program of Mech engg. The audit is expected anytime by June 2015.

To get through the audit successfully, we need a lot of support from Alumni. **Please read this article when you have quality time and then respond to our request. Your support will go a long way in getting our program accredited for 5 years.**

For your benefit, we are explaining some basic ideas of accreditation in this write up.

Accreditation is a process that inspires continuous improvement in the program delivered. This is done by a documented process consisting of various steps.

Stakeholders are those who are affected by the program-The people involved -management, faculty, students, alumni, recruiters and society around us.

The Institute is supposed to have a long term direction (**Vision**) , short term action to reach the goal (**Mission**) and an idea of what it wants its graduates to achieve within say three to five years after graduation. (**Program Educational Objective-PEO**). In order to do this, the program must have some skills imparted on its students (**Program Outcome-PO**). Each course must have an outcome (**Course Outcome-CO**) that can finally lead to the overall Program outcome.

Continuous Improvement depends on
1.The process of developing all the above parameters
2.the process of checking whether these have been achieved and
3.the process of correcting the system

Alumni's role now is in the second process of checking whether the said goals (PEO) have been achieved or not. Your response has to come in two parts.

a)first part-self analysis and feedback on how the program offered to you in SSN mech has helped you achieve the specific skills that we originally said we will impart to our students.
b)second part- response from your manager / reporting authority on what he feels about your achievements and qualities.

These two feedback will help us assess whether we are delivering what we promised. If not, it gives a chance to understand where we lag. This will give us an opportunity to correct the system -either introduce new and relevant courses or change the method of delivering the courses. Both ways, it is important.

What you need to do

1.For self feedback- follow the link and positively give your feedback to us (through the link).
https://docs.google.com/a/ssn.edu.in/forms/d/1xmHQfqV65qilEyVpugJImnBgsVlHJ8mf1ka3TLJCRhs/viewform

Post this link in your social networks and ensure all your friends participate in this feedback session. This is the greatest contribution you all can do to improve the image of the dept and the program.

2.For employer feedback, pass on the link given below to your boss and request him to fill it up for us .

https://docs.google.com/a/ssn.edu.in/forms/d/1QmJl413NYoBQLw4Kop5BR3ZLGhrINnjbboGqPCIPfqY/viewform

Alternately, you may print this form, get it filled by your HR person or by the person to whom you report to- and send it to us- by mailing it to HoD mech, SSN College of Engg, Kalavakkam, Chennai 603110 or by e- mailing a scanned copy to annamalaive@ssn.edu.in

Illustrative Example 1

Supposing B.A.Music is a graduate degree offered with several subjects like "Types of Ragas", "Nuances of Keyboard", "Folklore", "Western music" etc.

- What we normally call a subject is now termed as "Course".
- What we normally call a degree is now termed as a "Program".
- So, B.A.Music is a Program and the different subjects are Courses.

Raghu is joining a music college. In the first year, after completing the course on "Types of Ragas", he is able to identify different ragas. This ability is the course outcome.

After completing the course on "Nuances of Keyboard" , he is able to play the keyboard. This ability is the course outcome.
Like this, there are several courses and after completing all the courses, he graduates as a B.A. in Music.

After three years, he starts composing music for a short film. He had also released a music album on folk songs of Chennai. This is the Program Educational Objective.

What skill can be imparted by the program is the Outcome (PO) and
what the graduate can do with the skill is the Program Educational objective (PEO).

PO is written as :By doing B.A.Music, the student will be able to differentiate between ragas, will be able to play the keyboard etc.
PEO is written as :After three years, the graduate would have established as a musician in various walks of life like cinema, TV, advertising or any other media etc

Whether the person acquired the skill of playing the keyboard is immediately assessed in the University exam. But whether he is able to use the skill has to be assessed by the graduate by self reflection or by the media which has utilised the person's music skills.

Illustrative Example 2

B.Sc.Catering is a Program. “Vegetable soup making”, “Rice and its varieties”, “Vegetable carving”, “Front office mannerisms”, “House keeping” etc maybe the different courses of this program.

Then the PO will be like- The graduates of B.Sc.Catering will be able to differentiate between boiled and unboiled rice, will be able to plan and prepare different types of Soups, will be able to carve decorative items on vegetables , will be able to plan for housekeeping etc.

The PEO may be - Graduates of B.Sc.Catering would be gainfully employed as Chefs in Hotels and Restaurants, or will be practicing as independent entrepreneur offering catering services .

Our Case

Similarly, in mech engg, each course you studied is supposed to have imparted certain skills in you. Whether you acquired the skill is reflected by the marks you got in the university exams. (This tests only the PO).

Whether you have used those skills to your benefit has to come from you and your employer. Hence the need for the feedback. Only this feedback will test the attainment of the PEO-(that you would have been gainfully employed in an industry or you would have gone for higher studies etc). So, do the needful to give back!

The items in the questionnaire actually follows the PO and PEO listed by Mech dept.

Why three years cut-off ? Internal data is compiled for three batches. Therefore data of the remaining (earlier batches) have to be collected from Alumni. That is why external data is collected after three years into the field .

Supposing there are four batches passed out in 2010-A, in 2011-B, in 2012-C, in 2013-D in and 2014 (current)-E.

In 2014, when we apply, we provide data of one current batch E and three passed out batches B,C,D.

If we fix more than three years as target date for alumni data, it covers from Batch A and earlier. Naturally, the process is set to get internal data for latest three batches and external data for all the earlier batches. So, tentatively three years as considered as “sufficient time” to display skills acquired in the professional environment.

Corporate Story 1	Murugappa Group

This is a series aimed at creating awareness on powerful Industrial Groups that have a great potential to employ our students. It is hoped that students understand the companies and their underlying philosophies so that they can develop the right attitude to get employed.

Founded in 1900, the INR 243 Billion Murugappa Group is one of India's leading business conglomerates. The Group has 28 businesses including eleven listed Companies traded in NSE & BSE. Headquartered in Chennai, the major Companies of the Group include Carborundum Universal Ltd., Cholamandalam Investment and Finance Company Ltd., Cholamandalam MS General Insurance Company Ltd., Coromandel International Ltd., Coromandel Engineering Company Ltd., E.I.D. Parry (India) Ltd., Parry Agro Industries Ltd., Sabero Organics, Shanthi Gears, Tube Investments of India Ltd., and Wendt (India) Ltd.

The concept for growth has always been "Develop expertise first and then expand."

It follows two step process

1.Make what we buy (Backward integration) and

2.Then sell to other users (Expansion).

This can be illustrated as below.The two earlier companies that were started by Murugappa Group are TI Cycles and Carborundum universal Ltd.

In 1949, *TI Cycles of India* (TICI) was born in collaboration with TI of UK. It was the Group's first of many successful Joint Ventures and also its first foray into large scale manufacturing. The first Hercules bicycle rolled out in 1951. Three more brands were added to the portfolio - Phillips in 1959, BSA in 1964 and Montra in 2011.

Later, as a measure of backward integration two more companies were formed: Tube Products of India (TPI) in 1955, to make steel tubes for bicycle frames and TI Diamond Chain (TIDC) in 1960 to make bicycle chains. Over a period of time these two businesses have moved up the value chain from bicycle parts to higher technology products.

For *Carborundum Universal Ltd*, the initial activity was manufacturing steel safe under the brand name Ajax. For making these they were using steel and a lot of abrasive paper (emery sheet). These emery sheets had to be imported. In due course, the thought of why not make it ourselves lead to the establishment of Carborundum Universal Ltd at Thiruvottiyur, in 1954. It was established with technology tie up from Carborundum of USA and Universal grinding wheel co. of UK. Later they bought out all the shares and became fully owned Indian company.

In order to make emery sheets, abrasives are needed. Abrasives come from bauxite and so bauxite mines were bought in Gujarat. In order to convert the bauxite into hard abrasives, lot of power is needed. At that point in time, plants were set up in Kerala (Edapally-Cochin) for its abundance of water and electricity. Since electricity was a major factor, they ventured into hydro electric power plant also. They do have a gas power plant and a wind energy farm.

The abrasives manufactured at Cochin were brought to Thiruvottiyur which had the facility to convert into various abrasive products-from emery sheets to large grinding wheels. Using abrasive grains the next expansion was into refractory products. Exposure to ceramics led to advanced ceramics like Industrial Ceramics etc.

The other thing the group had familiarity was handling steel sheets. So, when Industrialisation picked up, Murugappa Group entered into manufacturing bicycles as TI cycles. For making tubes for the cycles, they got into Tubes India. Then for making chains for cycles they started TI Diamond Chains. Tubes first catered to cycles and then started looking for all other tubes-for example, tubes for motorcycles, tubes for refrigeration applications etc. Similarly, TI Diamond Chains which started off for making cycle chains, diversified into making chains for all applications. Then the need for dynamos were felt and TI Miller started off making cycle dynamos.

Slowly they started off into agriculture-making quality tea. Agriculture led to fertilisers and then to Sugars. From Sugar it was co-generation or making power as a by product.

EID Parry actually means East India Distilleries Parry-an English company that was running a distillery ,Sugar plants and also making Sanitaryware. This was bought over by Murugappa Group, since it was also in ceramics. Since distillery was not in the purview of Murugappas, it was closed. The Sanitaryware business continued-and that is what you see as Parryware.

1788-Thomas Parry starts trading in Chennai

1842-First sugar factory in Nellikkuppam

1952-Production of vitreous Sanitaryware at Ranipet

1981-EID Parry becomes part of Murugappa Group

2003-Parrys Confectionery given up to Lotte

2004-Disinvestment of Netlon

As you can see, Murugappa Group has been steadily growing, **expanding into sectors of strength** and **giving off what they are not strong in.**

It is by virtue of this acquisition that *they got the Parry house-and became a company with a 225 years history*!

What we call as Parrys corner derives its name from this building. Today, Parryhouse is the head quarters for all the businesses of Murugappa Group. It is a wonderful multistorey building with a roof top garden, housing the brightest of minds of an Indian MNC.

Their philosophy from *Arthashastra:*

"The fundamental principle of economic activity is that no man you transact with will lose, then you shall not."

Their outlook on recruitment- "Employ for attitude-everything else can be taught"

Their process of engaging with students- they have DRP-Desk Research Projects which they offer to students. We have successfully completed three DRPs with them for the past two years.

for a brief visit http://www.murugappa.com/investors/GroupPresentationAug2013.pdf
for more info on the Group companies visit www.murugappa.com

The group does a lot of "**giving back to Society**", by its Philanthropic activities-as listed below.

For details, visit http://www.ammfoundation.org/

Education

1. Sri Ramaswamy Mudaliar Higher Secondary School, Ambattur
2. Vellayan Chettiar Higher Secondary School, Thiruvottriyur
3. TI Matriculation Higher Secondary School, Ambattur
4. AMM Matriculation Higher Secondary School, Kotturpuram
5. Murugappa Polytechnic College, Avadi

Healthcare

1. AMM Hospital, Pallathur, Sivagangai District
2. Sir Ivan Stedeford Hospital, Avadi
3. Valliammai Achi Hospital, Kadayalumoodu, Kanyakumari district
4. AMM Arunachalam Hospital, Nellikkuppam, Cuddalore

Socially Relevant Research

MCRC-Murugappa Chettiar Research Centre, Taramani http://www.amm-mcrc.org/

Shri AMM Murugappa Chettiar Research Centre (MCRC), a non-Governmental Voluntary Research Organisation was established in 1977 with a division engaged in research on photosynthesis and energy at Tharamani, Chennai, with a vision to take the scientific developments to the rural mass.

The research centre has been working on devices and technologies for rural application, ecofriendly technologies to combat pollution. Resource utilization, recovery and management are the major areas concentrated by scientists in MCRC. Many of the devices and technology packages are eco-friendly and are dovetailed with local needs. Simple technologies have also been designed for the use of local artisans. MCRC is recognized by Department of Scientific and Industrial Research, Government of India as a Scientific and Industrial Research Organization to conduct research in various areas and is approved by University of Madras, Chennai to offer Ph.D. programmes in Photosynthesis, Biomass and Energy.

MCRC's efforts have been supported by various funding agencies worldwide, including DST, DBT, MNES, CAPART of Government of India to carry out research and rural development programmes.

For an interesting story-"From Burma to Parrys corner" read

http://www.livemint.com/Companies/XQVvI6OB5ZwY5XZ3JMzDwM/Murugappa-Group-From-Burma-to-Parrys-Corner.html

Dept Achievements of 2014

Item	Target	Achieved
One paper per faculty	27	38
One proposal per doctorate	17	14 (5 in progress)
One patent per year	1	1 (3 in progress)

Inspiring Incidents

This is a true story that had happened in 1892 at Stanford University. It's moral is still relevant today.

A young, 18 year old student was struggling to pay his fees. He was an orphan, and not knowing where to turn for money, he came up with a bright idea. A friend and he decided to host a musical concert on campus to raise money for their education.

They reached out to the great pianist Ignacy J. Paderewski. His manager demanded a guaranteed fee of $2,000 for the piano recital. A deal was struck. And the boys began to work to make the concert a success.

The big day arrived. Paderewski performed at Stanford. But unfortunately, they had not managed to sell enough tickets. The total collection was only $1,600. Disappointed, they went to Paderewski and explained their plight. They gave him the entire $1,600, plus a cheque for the balance of $400. They promised to honour the cheque soonest possible.

"No" said Paderewski. "This is not acceptable" He tore up the cheque, returned the $1,600 and told the boys "Here's the $1,600. Please deduct whatever expenses you have incurred. Keep the money you need for your fees. And just give me whatever is left" The boys were surprised, and thanked him profusely.

It was a small act of kindness. But it clearly marked out Paderewski as a great human being. Why should he help two people he did not even know? We all come across situations like these in our lives. And most of us only think "If I help them, what would happen to me?"

The truly great people think, "If I don't help them, what will happen to them?" They don't do it expecting something in return. They do it because they feel it's the right thing to do.

Paderewski later went on to become the Prime Minister of Poland. He was a great leader, but unfortunately when the World War began, Poland was ravaged. There were over 1.5 million people starving in his country, and no money to feed them.

Paderewski did not know where to turn for help. He reached out to the US Food and Relief Administration for help.

The head was a man called Herbert Hoover - who later went on to become the US President. Hoover agreed to help and quickly shipped tons of food grains to fee the starving Polish people. A calamity was averted.

Paderewski was relieved. He decided to go across to meet Hoover and personally thank him. When Paderewski began to thank Hoover for his noble gesture, Hoover quickly interjected and said, "You shouldn't be thanking me, Mr. Prime Minister. You may not remember this, but several years ago, you helped two young students go through college in the US. I was one of them."

The world is a wonderful place. What goes around usually comes around.

https://propelsteps.wordpress.com/2013/05/13/a-true-story-happened-in-1892-at-stanford-university/

Forthcoming events

International Conference ISERMAT by mech team is on Jan 8-9, 2014.

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Mr. C. Gurunathan
Technical Officer, IIITD&M
Mob. +91 9486932200
Tel: 044 – 2747 6390
cgurunathan@iiitdm.ac.in

Automotive Research Centre in School of Mechanical & Building Sciences at VIT University has planned to organize a series of workshop on "Recent trends in Automotive Technology". As the first of its kind, a two day workshop on "Recent trends in Automotive Technology *focused on* **Engine Technology & Vehicle Testing**" has been scheduled to be held on January 8 & 9, 2015 in association with ATALON, Chennai.

Mech Marvels 1	The Falkirk Wheel

The Millennium Link was an ambitious £84.5m project with the objective of restoring navigability across Scotland on the historic Forth & Clyde and Union Canals, providing a corridor of regenerative activity through central Scotland.

A major challenge faced, was to link the Forth and Clyde Canal, which lay 35m (115ft) below the level of the Union Canal. What was required was a method of connecting these two canals by way of a boat lift. British Waterways (now Scottish Canals) were keen to present a visionary solution taking full advantage of the opportunity to create a truly spectacular and fitting structure that would suitably commemorate the Millennium and act as an iconic symbol for years to come.

The resultant, a perfectly balanced structure that is The Falkirk Wheel - the world's first and only rotating boat. Completion of The Millennium Link project was officially marked by Her Majesty The Queen on 24 May 2002 at The Falkirk Wheel.

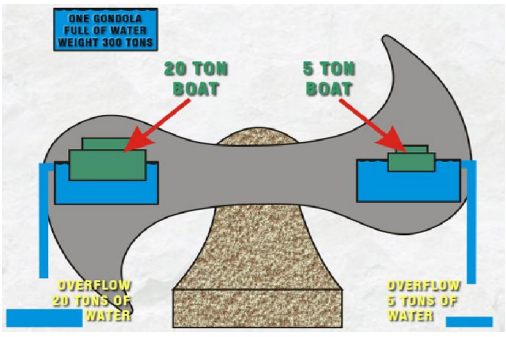
Engineering

The various parts of The Falkirk Wheel were actually constructed and assembled, like one giant Meccano set, at Butterley Engineering's Steelworks in Derbyshire. A team there carefully assembled the 1,200 tonnes of steel, painstakingly fitting the pieces together to an accuracy of just 10 mm to ensure a perfect final fit.

In the summer of 2001, the structure was then dismantled and transported on 35 lorry loads to Falkirk, before all being bolted back together again on the ground, and finally lifted by crane in five large sections into position.

The total 600 tonne weight of the water and boat filled gondolas imposes immense and constantly changing stresses on the structure as it turns around the central spine. Normal welded joints of steel would be susceptible to fatigue induced by these stresses, so to make the structure more robust, the steel sections were bolted together.

Over 15,000 bolts were matched with 45,000 bolt holes, and each bolt was hand tightened.



How does it work?

The Falkirk Wheel lies at the end of a reinforced concrete aqueduct that connects, via the Roughcastle tunnel and a double staircase lock, to the Union Canal. Boats entering the Wheel's upper gondola are lowered, along with the water that they float in, to the basin below. At the same time, an equal weight rises up, lifted in the other gondola.

This works on the Archimedes principle of displacement. That is, the mass of the boat sailing into the gondola will displace an exactly proportional volume of water so that the final combination of 'boat plus water' balances the original total mass.

Each gondola runs on small wheels that fit into a single curved rail fixed on the inner edge of the opening on each arm. In theory, this should be sufficient to ensure that they always remain horizontal, but any friction or sudden movement could cause the gondola to stick or tilt. To ensure that this could never happen and that the water and boats always remain perfectly level throughout the whole cycle, a series of linked cogs acts as a back up.

Hidden at each end, behind the arm nearest the aqueduct, are two 8m diameter cogs to which one end of each gondola is attached. A third, exactly equivalent sized cog is in the centre, attached to the main fixed upright. Two smaller cogs are fitted in the spaces between, with each cog having teeth that fit into the adjacent cog and push against each other, turning around the one fixed central one. The two gondolas, being attached to the outer cogs, will therefore turn at precisely the same speed, but in the opposite direction to the Wheel.

Given the precise balancing of the gondolas and this simple but clever system of cogs, a very small amount of energy is actually then required to turn the Wheel. In fact, it is a group of ten hydraulic motors located within the central spine that provide the small amount, just 1.5kWh, of electricity to turn it.

http://www.thefalkirkwheel.co.uk/about-the-wheel-

https://www.youtube.com/watch?feature=player_detailpage&v=_tBH9SE-Kw8

Corporate Wisdom 13

Our past life is like pages of a book you have already read and it is just the build-up.

The real joy of the book called Life is in the pages that you have not read yet.

Mr.R.Ramakrishnan
Advisor

Why write an imposition of a chapter from your past again and against and again…. When you have the potential to write many more fresh chapters in the future ? The glory of life is in the chapters to come. The pages of future are blank papers and you can decide to write what you want . It is in your hands.

Save your future from the clutches of your past. Life should be a forward progression and not a backward regression. We cannot go back and make a fresh start, but we can begin now and create a fresh end.

Draw line to your past. Yesterday is over yesterday . There is nothing in human capacity that can alter what has happened yesterday , why yesterday even few minutes back. We can only recognize and we can only improve upon , but we cannot go back and correct anything. The matter is over.

Unless we recognize this and there is a spirit of acceptance to
" **What is is is"** and "**what is not is not"**.

What is over is over. If the acceptance is not there you are sure spend enormous amount of energy to be wasted in the direction of your past.

Please understand the very piece of knowledge and wisdom either we can focus on building the future or look back at our past with regret.

YOUR FUTURE BEGINS TODAY. Recognize this and start working towards this. Your life is like a note book . Don't worry about what has been written in the pages so far . Look out for new pages and work on what you can write newly.

What to write?

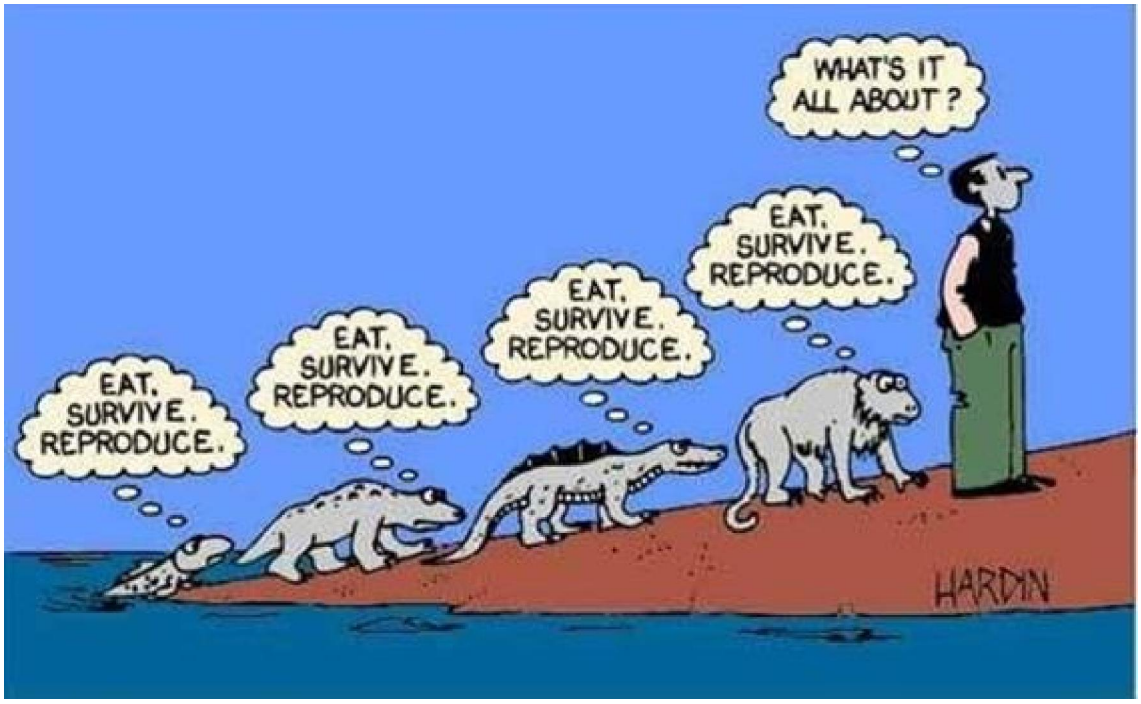
It is important that we step back a little bit and think " What we want to be "? You want to be somebody or anybody ? There is a lot of difference in these two .

Do you want to be just anybody in life , or do you want to be somebody in life ? If you want to be just anybody in life, then merge with the crowd. You will be one among the millions and you will get lost in the crowd. However, if you want to be somebody in life then stand up and be counted.

If you want to lead your life like everybody, you are sure to become like everybody.
If you don't want to be like everybody, then you have to do what nobody has done.

If you walk the path everybody walks, and you will reach the destination everybody reaches.
Walk a different path and you will create a new destination for yourself.

The question you need be constantly asking is
" Do you want to be a typical human being who is one among the crowd or
do you want to be a different human being, who will be looked up to by other human beings ?"



If you want to be a different human being, who will be looked up to by others keep asking this to your self

- **" Either sub-ordinate you likes and dislikes to the purpose of your life " - if you do this you are starting to be a different human being**
- **" Or Sub-ordinate the purpose of your life to your likes and dislikes – if you do this you are becoming one among the crowd and will be lost.**

Choose wisely and write Fresh pages in 2015.

Have a wonderful Year !

New
All education related info at
http://www.knowyourcollege-gov.in/