



**National Engineering College**  
(An Autonomous Institution)  
K.R. Nagar , Kovilpatti-628503



# EEE NEWSLETTER

Mar 2014

Vol 1 Issue 7



## **VISION & MISSION OF THE COLLEGE**

### **VISION:**

Transforming lives through quality Education and research with human values

### **MISSION:**

1. To maintain excellent infrastructure and highly qualified and dedicated faculty.
2. To provide a conducive learning environment with an ambience of humanity, wisdom, creativity and team spirit.
3. To promote the values of ethical behaviour and commitment to the society.
4. To partner with academic, industrial and government entities to attain collaborative research.

## **VISION & MISSION OF THE DEPARTMENT**

### **VISION:**

Promoting active learning, critical thinking coupled with ethical values to meet the global challenges.

### **MISSION:**

1. To instill state-of-the-art technical knowledge and research capability that will prepare our graduates for professionalism and life-long learning.
2. To update knowledge to meet industrial and real world challenges.
3. To inculcate social and ethical values.

### **PROGRAMME EDUCATIONAL OBJECTIVES (PEO):**

The main objective of the B.E., Programme in Electrical and Electronics Engineering is to prepare students for either one or more of the following:

1. Excel in industrial or graduate work in Electrical Engineering and allied fields.
2. Practice their profession conforming to ethical values and active participation in the affairs of the profession.
3. Adapt to evolving technologies and stay current with their profession.

**CONTENTS**

Vision and Mission.....	02
Staff Achievements.....	04
Department Activities.....	06
ALTANZIA'14.....	06
VALEDICTORY Function of EEE Association.....	08
VALEDICTORY Function of Institute of Engineers (INDIA).....	09
Interaction with Eminent Professor.....	09
Convocation 2014.....	10
Technical Article by Staff Member.....	11
Technical Articles by Students.....	18
Students' Experience in Preparing and Facing CAT/GATE Exams .....	20
Students' Experience in Placing TCS & Hexaware Placements.....	24
Industry Profile.....	26
Crack GATE .....	27
Time to Know Our Alumni.....	30
A First Step towards Online Courses and Online Materials.....	31
Student Achievements/Activities.....	35
News Clippings.....	38
Memorable Moments.....	39

**STAFF ACHIEVEMENTS**

- **Dr.M. Ravindran** (Associate Professor) has completed his **Doctorate** in the thesis titled of **“Some Studies on Energy Saving in Switched Reluctance Motor”** – Energy Engineering on 29.3.2014 from Gandhigram University, Dindigul

S.No.	Date	Name of the Staff	Guest Lecture/ Judge	Topic/ Event	College
1	21 <sup>st</sup> and 22 <sup>nd</sup> March, 2014	Dr.L.Kalaivani Asso. Prof	Chair Person for Technical Session and Technical Reviewer	IEEE International Conference on Circuit Power and Computing Technology	Noorul Islam Center of Education, Nagercoil.
2	16th April, 2014	Dr.L.Kalaivani Asso. Prof	Chair Person for Technical Session	NACPEPS'14 National Conference	Government College of Engineering, Tirunelveli.
3	5 <sup>th</sup> , 14 <sup>th</sup> to 16 <sup>th</sup> March, 2014	Dr.L.Kalaivani Asso. Prof	Workshop	Evaluators/Resource Person on OBE Phase -I and Phase-II	National Engineering College, Kovilpatti
4	21 <sup>st</sup> March, 2014	Mrs.R.V.Maheswari Asso. Prof	Guest Lecture	High Voltage Testing Techniques	Cape Institute of Technology, Tirunelveli
5	4 <sup>th</sup> April, 2014	Dr.M.Willjuice Iruthayarajan Prof & Head	Guest Lecture	Control System Engineering	SCAD College of Engineering and Technology
6	21 <sup>st</sup> and 22 <sup>nd</sup> March, 2014	Mr.G. Kannayeram, AP(SG), Mr.S.Arun Sankar, AP	Workshop	MNRE Sponsored Energy Efficient Solar, Green Buildings Initiatives	Bannari Amman Institute of Technology
7	3 <sup>rd</sup> to 7 <sup>th</sup> March, 2014	Ms.K.Gowthami, AP	Workshop	Embedded System using Microchip PIC Microcontroller	National Engineering College, Kovilpatti



## DEPARTMENT ACTIVITIES

### ALTANZIA'14

#### INAUGURAL FUNCTION:

The Department of Electrical and Electronics Engineering of National Engineering College organized a two days National Level Technical Symposium ALTANZIA'14 on March 10<sup>th</sup> and 11<sup>th</sup> 2014. Participants from various colleges all over Tamil Nadu were invited. The symposium is fully contributed with both technical and non-technical events. The technical events included the Slide Ride, Tech Talk and the Quiz while the non-technical events included What's App, Connections, Treasure hunt, Google hunt and Say Cheese.



Mr. M. Venkadesh, the secretary of EEE Association delivered the welcome address. Ms B. Aneesha the treasurer threw lights on the star of the day.



Mr N.B.Prakash, Asso. Prof of EEE Dept and advisor presents preamble of the fore coming events. The EEE Dept Newsletter was released on the inaugural function by the chief guest Er. Mohanan, Executive Engineer of TTPS in the august presence of Director Dr.Kn.K.S.K.Chockalingam, Dr.M.Willjuice Iruthayarajan (HOD/EEE) and Mr.G.Kannayeram – Assistant Professor (Sr.Grade).

This Inauguration of ALTANZIA'14 was graced by the presence of dynamic personality Er.Mohanan, Executive Engineer of TTPS, Dr.Kn..K.S.K Chockalingam Director, NEC and Head of the EEE Department Dr. M. Willjuice Iruthayarajan and Mr.G.Kannayeram Staff Coordinator.



The chief guest, Er.Mohanar addressed the gathering and encouraged the students to take up leadership roles and outlining the qualities to become a successful Engineer. He also highlighted that, there are several opportunities and the students have to equip themselves with additional courses to get placement in a core industry. He informed that the companies are waiting to fill their vacancies with skilled professionals and asked the students to prepare themselves. His words were very much inspired and motivated.

### **SLIDE SHOW:**

Slide show was a paper presentation event. Among 90 papers received from various engineering college. Our review committee shortlisted 75 papers. The event was scheduled in the morning session of the symposium. The event was schedule at two venues (Assembly hall and Seminar hall) and winner from each venue was awarded. The participants put forth their ideas in beautiful with innovative presentations. The students were judged based on the innovativeness of the idea, presentation and originality of the topic they have presented. They were also questioned about the practical difficulties in implementing their idea, recent trends and its cost considerations. It was very useful to everyone who was the listeners, as these presentations motivated them to several new ideas.

### **QUIZ:**

In the afternoon session of second day of ALTANZIA 2K14, the most awaited Quiz was scheduled. Following the prelims about 5 teams were chosen to attend the final. The first round in the final was based on current affairs and general awareness.

The second round comprised of two segments, with the first segment based on personality identification and the second segment based on ability to determine odd one among a group of similar items. The third round was a rapid fire round, where about 1 minute was allotted for a team to answer 4 questions. The final round was the major decision making round called betting round where there was an opportunity even for the team with least score can win. The audience too eagerly participated in the Quiz. The rounds were very knowledgeable and were a delight to the audience. The event was organized by Mr. J.Sivadasan, AP(SG).

### **GOOGLE HUNT:**

A new non-technical event 'Google Hunt' was conducted for the first time in ALTANZIA'14. It was aimed to accessing the browsing speed and the correlation of ideas of the participants. The prelims was conducted in the first day afternoon session and the final was conducted in the second day morning session. There were three rounds in which the first round was a direct guessing round, the second round was a photo find round and the third round was the indirect guessing round. It was a different approach from the ordinary events that would be held every time. The students participated with great interest to identify the best browser among them. The event was organized by Ms. S.Jayanthi, AP.

### **CONNECTIONS:**

The 'connections' event was held to award the best logical connector among the participants. The rounds were directed towards accessing the ability of the students to think logically with the given clues in minimum time. Following the prelims which was held in the first day afternoon session of the first day of ALTANZIA 2K14, the finals was conducted in the second day.

The event had rounds which would test the general, technical and logical out of box thinking of the students. The event was organized by Ms.K.Gowthami, AP.

### WHAT'S APP:

What's app was the most interesting and fun event where a student deserving the title of Best Manager was awarded. After the prelims, the first day afternoon session was scheduled for this event. The first round of this event was 'Thinking a minute'. It was to access the presence of mind of the participant. The second round was 'reacting to a situation' which also included the effort of the audience. The third round was 'marketing a product'. Finally three students were chosen for the final round, and it contained two segments 'Maathi yosi' and 'Multitasking'. Among the three students, one of them was chosen as the winner based on the performance of both the segments. The event was organized by Ms. S.Divya, AP.

### TREASURE HUNT:

The treasure hunt has one or more players who try to find the hidden articles, locations by using a series of clues. It also had prelims wherein few teams were selected for the finals and the participants were made to search for a treasure by following the clues. The team which completed the task first was awarded the best. The event was organized by Mr.P.Samuel Pakianathan, AP.

### SAY CHEESE:

There was also a photo contest where the photos from various genres shadow, family, friendship etc were invited. Among the photos the best one which showed the photography talent was chosen. The event was organized by Ms.J.R.Deepeeha, AP.

### VALEDICTORY FUNCTION:



After completion of all the events, the prizes and certificates were distributed at the valedictory function graced by our respected Principal Dr.P.Subburaj. Feedbacks were also obtained from the participants. In their feedback, the participants whole heartedly thanked and appreciated the committee members for all their efforts and making the events such a wonderful moments. They mentioned that both technical and non-technical events were given equal importance. They also added that they feel pleasure in spending their two days usefully. Overall the symposium was a grand success and it met out the objectives it was aimed at.

The overall ALTANZIA'14 was organized by the staff coordinators,  
Mr.G.Kannayeram, Asst. Prof (S.G)  
Mr.N.B.Prakash, Asso. Prof  
Mr.B.Vigneshwaran, AP



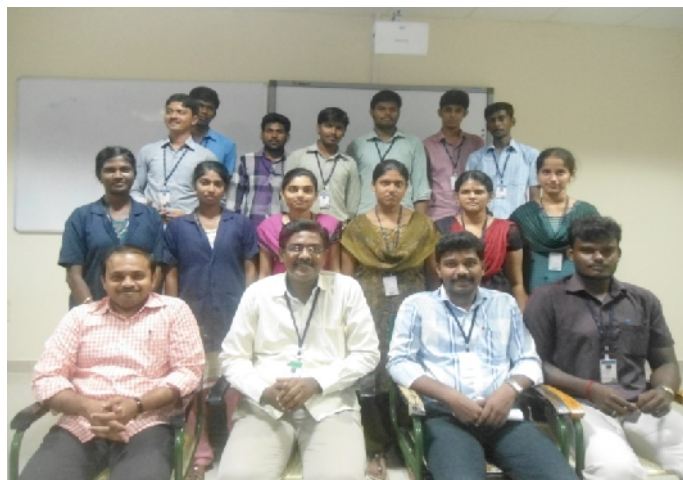
## VALEDICTORY FUNCTION

### EEE ASSOCIATION



The EEE association valedictory function was held on 27-03-2014 Thursday at 4.30 PM in EEE Seminar Hall. The function was presided by the Head of Department Dr.M.Willjuice Iruthayarajan and Staff Coordinator Mr.G.Kannayeram AP (SG). The function was initially addressed by Mathan Kumar of Prefinal year followed by Venkadesh Secretary of EEE Association delivered the annual report of our Association activities. After that certificate of appreciations were provided for final years students by our Head of the Department Dr.M.Willjuice Iruthayarajan. Final year students V.Karthick and K.Chithra gave Feedback about the activities of EEE Association. At last the function came to an end by vote of thanks delivered by A.Muthu meena sundari of Prefinal year.

## VALEDICTORY FUNCTION INSTITUTE OF ENGINEERS (INDIA)



The Institute of Engineers (INDIA) valedictory function was held on 25-03-2014 Tuesday at 4.30 PM in EEE Seminar Hall. The function was presided by respected Head of the Department Dr.M.Willjuice Iruthayarajan and Staff Coordinator Mr.M.P.E.Rajamani, Asst. Prof (S.G) and Mr.M.Gengaraj, AP. The function was initially addressed by Sivaranjini of Prefinal year followed by Mr.M.Gengaraj, AP/EEE delivered the annual report of IE(I) activities. Certificate of appreciations were provided for final years students by our Head of Department Dr.M.Willjuice Iruthayarajan. V.Karthick of Final EEE introduces the office barriers of forthcoming academic years. At last the function came to an end by vote of thanks delivered by B. Mahiba Cathline of Prefinal year.

## INTERACTION WITH EMINENT PROFESSOR

Dr. Lock Kai Sang, Past Chairman, Engineering Accreditation Board and Chairman, The Institution of Engineers, Singapore had an interaction with our staff members on 8th January 2014. The Interaction took part with our Director Dr.Kn.K.S.K.Chockalingam, Principal Dr.P.Subburaj, Head of the Department, Dr.M.Willjuice Iruthayarajan, HOD/E&I Dr.A.Abudhahir and HOD/CES Dr. Kalidass Murugavel and faculty of EEE Dept. During the interaction Dr. Lock provided valuable suggestions for preparing NBA documentation and different assessment tools of Outcome Based Education. The staff members cleared their doubts regarding the Self Assessment Report (SAR) of NBA visit. Dr.Lock has explained his views to implement the Outcome Based Education.



## CONVOCATION - 2014

More than a thousand people had waited for the day with their breath held tight. That was the day they finally earned their scrolls of honor. The college witnessed its 30<sup>th</sup> convocation on the 16.02.2014. The function was presided by Mr.M.Venkataramani, Managing Director, India Piston Ltd., at college auditorium. The degrees were awarded to students of various B.E, B.Tech, M.E, M.C.A, and Ph.D programmes.

A whooping 2 (Dr.L. Kalaivani and Dr.R. Karthik) out of the 6 doctorates degree handed out this year were received by scholar of Electrical and Electronics Engineering Department. Apart from them, 18 Postgraduate students from the field of High Voltage Engineering and 49 Undergraduate students in person received the respective degrees.

This year Institute toppers of EEE Department were awarded to A. Pramila Banu for B.E Degree programme and to M. Bakrutheen for M.E Degree Programme. Apart from that a total of 7 University ranks were bagged by our students during the academic year 2012 - 2013. Many students came in person accompanied by their families to receive their degrees and met their faculty before entering into their avenues of life.



Dr.L.Kalaivani receives her Doctoral degree from the chief guest Mr.M.Venkataramani



Ms. S.Divya and Ms. A.Pramila Banu receives their PG and UG degree from the chief guest Mr.M.Venkataramani



## Technical Articles by Staff Member

# Soft Computing Techniques and its Applications to Electrical Engineering

Dr.L.Kalaivani  
Associate Professor/EEE  
National Engineering College  
Kovilpatti

Soft Computing Techniques is the fusion of methodologies that were designed to model and enable solutions to real world problems, which are not modeled, or too difficult to model, mathematically. These problems are typically associated with fuzzy, complex and dynamical systems, with uncertain parameters. These systems are the ones that model the real world and are of most interest to modern science. Soft Computing Techniques have been recognized as attractive alternatives to the standard, well established "hard computing" paradigms. Traditional hard computing methods are often too cumbersome for today's problems. They always require a precisely stated analytical model and often a lot of computational time. Soft Computing Techniques, which emphasize gains in understanding system behavior in exchange for unnecessary precision, have proved to be important practical tools for many contemporary problems. Neural Networks and Fuzzy Systems are universal approximators of any multivariate function because they can be used for modeling highly nonlinear, unknown, or partially known complex systems, plants, or processes. Genetic Algorithm and Particle Swarm Optimization Techniques have emerged as potential and robust optimization tools in recent years.

Some components of Soft Computing Techniques include:

- Fuzzy logic (FL)
- Neural networks (NN)
- Support Vector Machines (SVM)
- Adaptive Neuro Fuzzy Inference System (ANFIS)
- Evolutionary computation (EC), including:
  - Evolutionary algorithms
    - Genetic algorithms
    - Differential evolution
  - Metaheuristic and Swarm Intelligence
    - Ant colony optimization
    - Particle swarm optimization

The applications of Soft Computing Techniques have proved two main advantages. First, it made solving nonlinear problems, in which mathematical models are not available/possible. Second, it introduced the human knowledge such as cognition, recognition, understanding, learning and others into the fields of computing. This resulted in the possibility of constructing intelligent systems such as autonomous self-tuning systems and automated designed systems.

## FUZZY LOGIC

The concept of Fuzzy Logic was conceived by Lotfi Zadeh (1995), a Professor at the University of California at Berkley, and was presented not as a control methodology, but as a way of processing data by allowing partial set membership rather than crisp set membership or non-membership. This approach to set theory was not applied to control systems until the 70's due to insufficient small-computer capability prior to that time. Professor Zadeh reasoned that people do not require precise, numerical information input, and yet they are capable of highly adaptive control. If feedback controllers could be programmed to accept noisy and imprecise input, they would be much more effective and perhaps easier to implement. Unfortunately, the U.S. manufacturers have not been so quick to embrace this technology, while the Europeans and Japanese have been aggressively building real products around it.

In this context, FL is a problem-solving control system methodology that lends itself to implementation in systems ranging from simple, small, embedded micro-controllers to large, networked, multi-channel PC or workstation-based data acquisition and control systems. It can be implemented in hardware, software, or a combination of both. FL provides a simple way to arrive at a definite conclusion based upon vague, ambiguous, imprecise, noisy or missing input information. FL's approach to control problems mimics how a person would make decisions, only much faster.

The components of fuzzy logic consists of fuzzifier, inference engine, defuzzifier and fuzzy knowledge base (Nantick 1999). Fuzzifier converts the crisp input to a linguistic variable using the membership functions stored in the fuzzy knowledge base. Inference Engine converts the fuzzy input to the fuzzy output by using If-Then type fuzzy rules. Defuzzifier Converts the fuzzy output of the inference engine to crisp using membership functions analogous to the ones used by the fuzzifier.

## ARTIFICIAL NEURAL NETWORKS

Artificial Neural Networks (ANN) is another computing paradigm that originated in the biological world. Neural Computation does not have to be the computation carried out by nerve cells. An artificial system can emulate a simplified version of a neural computational system. ANN is an example of such an artificial neural system (Bossomajer and David 2000). Even though the name ANN has been the most common but other names



have been used synonymously as well. Examples of these names are Neural Computing, Connectionism, Parallel Distributed Processing, and Connection Science. The multidisciplinary nature of the field of neural networks and its origin in biological science makes it difficult to state a rigorous definition for the field and what it addresses. This is the same problem with Evolutional and Genetic Computing. However, few references have attempted such a definition. A definition given by Igor Aleksander and Helen Morton is given as follows. "Neural computing is the study of networks of adaptable nodes which, through a process of learning from task examples, store experiential knowledge and make it available for use" (Aleksander and Morton 1990).

ANNs have often been used as an alternative to the techniques of standard nonlinear regression and cluster analysis to carry out statistical analysis and data modeling. In addition, computer scientists and engineers have seen ANNs, as providing a new experimental paradigm for Parallel Distributed Processing, rather than the algorithmic paradigm that dominated the field of machine intelligence prior to the ANN revolution.

Although scientists from various fields worked on the study of understanding and modeling of neuro-sciences, ANNs were actually realized in the 1940s. The most remarkable implementations of that era were the development of the Perceptrons and the ADALINE algorithm. Back-Propagation, Hopfield Nets, Neocognitron, and Boltzmann Machine were the most remarkable developments of that era. An ANN is a computational structure designed to mimic biological neural networks. The ANN consists of computational units called neurons, which are connected by means of weighted interconnections. The weight of an interconnection is a number that expresses the strength of the associated interconnection.

The main characteristic of ANNs is their ability to learn. The learning process is achieved by adjusting the weights of the interconnections according to some applied learning algorithms. Therefore, the basic attributes of ANNs can be classified into Architectural attributes and Neurodynamic attributes. The architectural attributes define the network structure, i.e., number and topology of neurons and their interconnectivity. The ability of ANNs to adapt to input changes until the output reaches a desired value is what makes ANNs so powerful. The adaptation is accomplished by continuously adjusting the network parameters, called Synaptic Weights, in response to input stimuli until the output response converges to the desired output. This adaptation process is known in ANNs as the learning process, i.e., when the actual output response matches the desired one, the ANN is said to have completed the learning process.

## ADAPTIVE NEURO FUZZY INFERENCE SYSTEM

Fuzzy systems present particular problems to a developer:

- Rules: The if-then rules have to be determined somehow. This is usually done by 'knowledge acquisition' from an expert. It is a time consuming process that is fraught with problems.
- Membership functions: A fuzzy set is fully determined by its membership function. This has to be determined properly.

The ANFIS approach learns the rules and membership functions from data. An adaptive network is network of nodes and directional links. Associated with the network is a learning rule - for example back propagation. It is called adaptive because some, or all, of the nodes have parameters which affect the output of the node. These networks are learning a relationship between inputs and outputs. Adaptive networks cover a number of different approaches but for our purposes, the method proposed by Jang and Sun (1995), known as ANFIS is investigated in some detail.

For the training of the network, there is a forward pass and a backward pass. The forward pass propagates the input vector through the network layer by layer. In the backward pass, the error is sent back through the network in a similar manner to back propagation. The total parameter set is split into three:  $S$  = set of total parameters;  $S_1$  = set of premise (nonlinear) parameters;  $S_2$  = set of consequent (linear) parameters;

So, ANFIS uses a two-pass learning algorithm:

- Forward Pass: Here  $S_1$  is unmodified and  $S_2$  is computed using an LSE algorithm.
- Backward Pass: Here  $S_2$  is unmodified and  $S_1$  is computed using a gradient descent algorithm such as back propagation.

The hybrid learning algorithm uses a combination of steepest descent and least squares to adapt the parameters in the adaptive network.

## EVOLUTIONARY ALGORITHMS

The field of evolutionary computation has experienced significant growth in the optimization area, thanks to the recent advances in computation. These algorithms are capable of solving complex optimization problems such as those with a discontinuous, non-convex and highly nonlinear solution space. In addition, they can solve problems that feature discrete or binary variables, which are extremely difficult (Michalewicz 1996).

Darwinian evolution is intrinsically a robust search and optimization mechanism. Evolved biota demonstrates optimized complex behavior at every level: the cell, the organ, the individual and the population. The problems that biological species have solved are typified by chaos, chance, temporality and nonlinear interactivities. These are also characteristics of problems that have proven to be especially intractable to classic methods of optimization. Linear programming, dynamic programming, gradient decent and other related methods each have difficulty in handling the intricacies of the real world problems. The process of evolution, however, can be applied to problems where heuristics are not available or generally lead to unsatisfactory results (Fogel 1994). From the optimization point of view, Evolutionary Algorithms' (EAs) methodologies have shown their evident benefits in simple and multimodal optimization problems due to their robustness, easy applicability, and the fact that they do not need specialized information such as gradient information or smoothness of objective functions.

Evolutionary Algorithms (EAs) are biologically-inspired optimization algorithms, imitating the process of natural evolution, and are becoming important optimization tools for several real-world applications. They use a set of solutions (population) to converge to the optimal design(s). The population based search allows easy parallelization, and information can be accumulated so as to generate accelerated algorithms. EAs are robust optimization methods. They do not require gradients of the objective function, they can handle noisy objective functions, and they may avoid premature convergence to local minima (Yao et al 1999).

EAs are computer programs that attempt to solve complex problems by mimicking the processes of Darwinian evolution. In an EA, a number of artificial creatures search over the space of the problem. They compete continually with each other to discover optimal areas of the search space. It is hoped that over time, the most successful of these creatures will evolve to discover the optimal solution. The artificial creatures in EAs, known as individuals, are typically represented by fixed length strings or vectors. Each individual encodes a single possible solution to the problem under consideration. EAs manipulate pools or populations of individuals.

The EA is started with an initial population of size  $\lambda_p$  comprising random individuals. Every individual is then assigned a fitness value. To generate a fitness value, the individual is decoded to produce a possible solution to the problem. The value of this solution is calculated using the fitness function. Population members with high fitness values represent better solutions to the problem than individuals with lower fitness values. Following this initial phase, the main iterative cycle of the algorithm begins. Using mutation (perturbation) and recombination operators, the  $\lambda_p$  individuals in the current population produce  $\mu$  offspring. The  $\mu$  offspring are assigned fitness values. A new population of  $\lambda_p$  individuals is formed from the  $\lambda_p$  individuals in the current population and the  $\mu$

offspring. This new population becomes the current population and the iterative cycle is repeated. At some point in the cycle, evolutionary selection is applied. That is, the Darwinian strategy of the survival of the fittest is employed and individuals compete against each other. This is achieved by selection based on fitness values, with fitter individuals more likely to be selected. The selection is applied either while choosing individuals to parent children or while choosing individuals to form a new population.

The process starts with the population of candidate solutions to the task at hand. These may be sampled randomly or provided as hints from previous experience or other algorithms. Each of the individuals in the population is scored with respect to how well they accomplish the task at hand ("fitness"), and selection is used to eliminate some subset of the population or to amplify the percentage of above-average solutions. New solutions are created by applying random variation to the existing parent solutions. This variation can come in the form of single-parent or multi-parent operators. Alternative choices offer different sampling distributions from the space of all possible solutions. The algorithm terminates, when some termination criterion has been satisfied, such as prescribed maximum number of generations, or a suitable error tolerance.

Recently, several modifications are carried out in crossover and mutation mechanisms of real-coded genetic algorithm RGA such as Simulated Binary Crossover (SBX), Parent Centric Crossover (PCX) and non-uniform polynomial mutation to improve the performance of RGA. Self-adaptive simulated binary crossover based RGA was successfully applied to various engineering optimization problems (Deb 2001). SBX crossover is self-adaptive in nature which creates children solutions in proportion to the difference in parent solutions.

Modified Particle Swarm Optimization was originally developed by an electrical engineer, Russell Eberhart and a social-psychologist, James Kennedy in 1995, and it emerged from earlier experiments with algorithms that modeled the flocking behavior seen in many species of birds (Eberhart and Kennedy 1995).

Differential Evolution is a simple population-based, stochastic parallel search evolutionary algorithm for global optimization. DE was invented by Storn and Price (1997). The initial population is chosen randomly and should cover the entire parameter space. In this work, these three algorithms have been utilized for finding the optimum performance of controllers.

Recently, multi objective evolutionary optimization algorithms (MOEA) are enjoying immense popularity, mainly because of their ability to find out the widely spread Pareto optimal solutions within single simulation run. MOEAs are a powerful instrument to deal with hard optimization problems under multi-criteria framework. In comparison with single objective optimization techniques, the Pareto based multi objective optimization methods have a number of advantages in solving constrained optimization problems (Deb

et al 2002). One of such first EAs, is Nondominated Sorting Genetic Algorithm-II (NSGA-II). It will find a diverse set of solutions and converging near the true Pareto-optimal set.

## APPLICATIONS

The above presentation shows that the areas of application of Soft Computing and its constituents are rapidly expanding. Besides the traditional application of control, many other applications in diverse areas have been proposed, implemented, and actually deployed. Khan states, "Neural Fuzzy techniques can be applied to many different applications. Home appliances (vacuum cleaners, washing machines, coffee makers, cameras etc.), industrial uses (air conditioners, conveyor belts, elevators, chemical processes, etc.), automotive (antiskid braking, fuel mixture, cruise control, etc.), fast charging of batteries, and speech recognition are a few examples."

Soft Computing technologies have been used to design electro-hydraulic systems. Methods based on GAs and ANNs have been used to solve the Vehicle Routing Problem. Another application is the use of FL and ANNs in fault detection and machine diagnosis. Another very innovative application is the use of Time-Delay Neural Networks for estimating lip movements from speech analysis, a research done on developing multimedia telephone for hearing impaired people. More recently, the tendency toward combining more than two soft computing techniques in one application has been growing.

Koji Shimojima and Toshio Fukuda proposed a new hierarchical fuzzy-neural control system for an unsupervised Radial Basis Function (RBF) fuzzy system. This control system combines FL, ANNs, and GAs techniques. The hierarchical fuzzy-neural controller is based on a skill knowledge database consisting of the skills acquired by the fuzzy-neuro controller. Those skills were acquired through an unsupervised learning based on Genetic Algorithms. The list of applications of soft computing includes other fields as well such as chemistry, medicine, information engineering, computational science, networking and distributed computing, and many others. Such a list can be a much extended one and very difficult, if not impossible, to cover in one document.

## Technical Articles by Students

### Google Glass



Google Glass is a wearable computer with an optical head-mounted display (OHMD) that is being developed by Google in the Project Glass research and development project with a mission of producing a mass-market ubiquitous computer. Google Glass displays information in a smart phone-like hands-free format, that can communicate with the Internet via natural language voice commands. Google provides four prescription frame choices for about \$225.00 U.S. It is necessary to remove a small screw in order to move the Google Glass from one frame to another. Google is also partnering with eyewear company Luxottica, owners of the Ray-Ban and Oakley brands, among others, to offer additional frame designs.

Glass is being developed by Google X which has worked on other technologies such as driverless cars. The project was announced on Google+ by Project Glass lead Babak Parviz, an electrical engineer who has also worked on putting displays into contact lenses; Steve Lee, a product manager and "geolocation specialist"; and Sebastian Thrun, who developed Udacity as well as worked on the autonomous car project. Google has patented the design of Project Glass. Thad Starner, an augmented reality expert, is a technical lead/manager on the project.

Submitted by,

A.Muthu meena sundari,

Pre Final Year EEE

## Battery Made From Wood



Scientists have developed a battery made from a sliver of wood coated with tin that shows promise for becoming a tiny, long-lasting, efficient and environmentally friendly energy source. Their report on the device — 1,000 times thinner than a sheet of paper.

Liangbing Hu, Teng Li and colleagues point out that today's batteries often use stiff, non-flexible substrates, which are too rigid to release the stress that occurs as ions flow through the battery. They knew that wood fibers from trees are supple and naturally designed to hold mineral-rich water, similar to the electrolyte in batteries. They decided to explore use of wood as the base of an experimental sodium-ion battery. Using sodium rather than lithium would make the device environmentally friendly.

The engineers describe lab experiments in which the device performed successfully though 400 charge-discharge cycles, putting it among the longest-lasting of all sodium-ion nanobatteries. They noticed that after charging and discharging the battery hundreds of times, the wood ended up wrinkled but remained intact. Batteries using the new technology would be best suited for large-scale energy storage applications, such as wind farms or solar energy installations.

Submitted by

G.Mariselvi@Abitha,

Pre Final Year EEE



## Students' Experience in Preparing and Facing CAT, GATE Exams:

Hello Folks,

“Cracking CAT in the first attempt is impossible” – It’s only a myth.  
Preparation and Practice matters.

I started my preparation through a coaching Institute 5 months before my CAT exam. Accuracy is more important than number of attempts in percentile calculation of CAT, So I concentrated more on it. Attempting more number of mock tests is the first key to success in CAT, and it also helped me a lot to improve in weak areas. Also I formed a strategy, planning on the number of attempts to be made in each section before the exam and I expected the same in the exam. But the questions were contrary from my plan. But somehow I managed to attempt questions that I was sure about, which improved the accuracy and got a decent percentile.



I wish all my juniors a very best on all competitive exams. Try out many number of mock tests it will guide you to success.

- N. Karthik Maharajan  
Final EEE.

I was aware of the GATE exam during my first year itself. My aim is to become an IES officer. When I compared the syllabus for GATE and IES, I found that both were similar somehow though IES had some more syllabus than GATE. Being an electrical engineer, we must crack GATE exam to show our subject knowledge to the world and so I began my preparation from third year itself. I got guidance from my seniors and I bought 12 years solved question papers. I chose my favorite subjects first and studied the entire syllabus of the particular subject thoroughly. Then I solved the multiple choice questions in the book. Likewise, I completed 5 important subjects for GATE EE paper with the help of text books of standard authors and the GATE MCQ questions. I had applied for various PSU's recruiting through GATE also. I faced the exam with much hope. The question paper was quite easy but due to negative marks, I was





not able to judge the correct answer. I can filter 2 options among 4, but I can't guess the exact correct answer from the 2. Totally I attended 33 questions out of 65 questions. At the end of the examination, I was confident that I will be able to crack the exam successfully in future and these kind of preparation is enough to achieve success. I can definitely say that this preparation will help me to appear for IES and other competitive exams also. I will never stop my hard work and I request all the students to appear to these kinds of exams and this will help you to find a better future in core industry.

Wishing you all success!

- A. Muthuselvi  
Final EEE.

My aim is to set foot in business & so I decided to choose MBA. I would like to thank my friend Karthika .M for motivating me to join MBA. CAT exam is the best selection exam towards choosing a college for MBA. So I joined in TIME Institution to prepare for CAT exam. CAT exam is the toughest entrance exam for MBA. Though I prepared for this exam for nearly 6 months, this duration was not enough for me to crack this exam.



Aptitude section has 30 questions. Only when our speed is improved, we would be able to answer it. It also had questions from Geometry which requires more concentration and speed. The next section is the verbal ability section and to clear this section, one should have good communication knowledge. Once attempting the aptitude section, I felt it quite difficult, that I managed to answer only few questions. My mistake was attempting more number of questions than which I know correctly in the verbal section that led to a reduction in my percentage due to negative marking. But overall this was a nice experience which made to spend my time useful. I am not going to stop in one attempt; I will try hard to get good result in the next attempt. I request the students to keep on practicing aptitude if you had made up your mind to clear CAT exam and join MBA.

- T. Thangalakshmi  
Final EEE.

Cracking GATE is not an easy job at all. Mere learning the formulae alone cannot help one to clear GATE. We were the first set to get introduced to fill in the blanks in GATE. The aptitude section was very easy, but considering technical, one cannot answer the questions unless they have practiced the model questions. Hence I would like to suggest the students to solve the questions from NODIA publications which would be more helpful. It's not important that you are familiar with all the topics of GATE syllabus, but it is important that you must be thorough of atleast 4 topics so that you could crack GATE. Only sincere and constant effort could make you succeed in clearing GATE. All the best!



- V. Alice Sugunabai  
Final EEE.

I aimed at scoring atleast 40 marks in GATE examination. So I planned to complete four subjects completely. As I am good at aptitude, I began my preparation with Aptitude and Engineering Mathematics which included Fourier transform, Laplace transform and Z transform. As DSP also had the same syllabus with additional 25% other syllabus, I then prepared DSP. After completing DSP, I studied circuit theory, EDC thoroughly and LIC, Electrical Machines and Control System partially. I expected 10 marks from subjects like circuit theory, DSP, Engineering Mathematics, Aptitude and 5 marks from EDC, LIC, Electrical Machines and Control Systems so that I could score about 55 marks. But in the examination, I had only 2 questions from aptitude and no problem solving questions in Engineering Mathematics was asked. Only questions from properties of Transforms were asked. Similarly only 2 questions were asked from circuit theory. Majority of the questions were asked from Electrical Machines, Control Systems and Digital Electronics. As I did not study those topics properly, I was not able to attend those questions. What I would like to say to you is study atleast 4 subjects properly and have in-depth knowledge in what you learn. Because little knowledge is more dangerous. Face the exam confidently. Success is yours.



- M. A. Ahamedullah  
Final EEE.

GATE 2014 organized by IIT Kharagpur, would have been easy, if a considerable amount of effort had been put into it. The questions were mainly concentrated in the subjects of Machines, Power System, Control Systems and Engineering Mathematics in the morning session of 2<sup>nd</sup> March 2014. The paper consisted of 10 questions on general aptitude and 55 questions on Electrical Engineering. GATE 2014 was held as an online examination. Fill in the blank questions were included for the first time in this GATE. These questions do not carry any negative marking.



Coming to the preparation for GATE, I prepared intensely for hardly a month. But even that preparation was very much useful in GATE. I really felt that a concentrated effort for a period of 6 months would fetch upto 70 to 80% of marks. I think that preparing for GATE using book of GK publishers was not much useful. My recommendation is that the aspirants may use the GATE MCQ Electrical Engineering book by NODIA publications for their preparation. The basic concepts should be studied using the Text books prescribed in our curriculum. There is no need to learn very advanced topics and concentration should be paid only to the very basics in all the subjects. Solving the previous years' question would be very helpful.

To sum up, firm determination along with concentrated effort fetch success in GATE for sure.

- M. Karthika  
Final EEE.

## Students' Experience in Placing TCS & Hexaware:

After the pre-placement talk, I liked the company profile very much so that I made up my mind to get placed in Hexaware Technologies. I would like to mention that apart from my efforts, the job offer was only due to God's grace. The first round was a written test which was not only based on aptitude like other software companies. It comprised of 75 questions that would check one's aptitude, technical knowledge and English vocabulary. They asked us to write an essay also in the written test. The selection criteria in the first round were based not only on those 75 questions but also on the use of vocabulary and the writing style in the essay. The second round was a group discussion. There they expected the students to speak out boldly with minimum grammatical error. The third round was a technical interview where questions based on technical from electrical, electronics and C language were asked. The last round was the HR interview where I was questioned the basics and the concepts of Electrical and Electronics Engineering. In the HR interview mainly the ability of the student to think and answer quickly and clearly was examined. One thing that I liked about the selection is that they verified even our rough sheets till the last round of the selection process. It was a good feeling when I know that I am placed. I would like to convey to the students to have a sound knowledge in aptitude and basics of our subject and develop a good communication skill to get placed in a company like Hexaware Technologies. Moreover remember that something destined for you is yours and no one else can claim it.



- V. Alice Sugunabai  
Final EEE.

It was a great pleasure to get placed in TCS. Since I was in the toppers list, I had only the paragraph writing test and so I had much confidence of getting placed. The written test was very easy. In the interview, they asked me more general questions and only the basics of C language. I was very confident and clear about my answers and that is what they expected. They spoke to me about the terms and conditions and asked me whether I was okay with it or not. When I did not know the answers to the questions they asked, I genuinely said the truth that I didn't know. That's what I would like to tell you also. Be confident with your answers and answer them genuinely. You are not expected to answer all the



questions they ask but they expect you to be genuine in your answers. Try to be precise and make them clear about all your ideas. Toppers have a good chance to get placed in TCS and others work sincerely to clear aptitude.

- G. Jasmine Jeba  
Final EEE.

The first round was a written round where all the questions were based on all the aspects- technical including electrical, electronics, vocabulary, aptitude and logical reasoning. We were also asked to write an essay which was the determining factor. Hence a good and correct communication skill and vocabulary is essential. The second round was Group Discussion where students who were able to speak out boldly and legibly were selected. The third was a technical interview where the basics of C-language and electrical were questioned. The students were expected to answer boldly and legibly. The HR interview was based on applications and advancements in Electrical Engineering. The overall selection process was very good and the aptitude and the communication skills are the at most essential in getting placed in this company.



- M. Karthika  
Final EEE.

## INDUSTRY PROFILE



The Godrej Group was founded in 1897, and has since evolved into one of the largest and the oldest conglomerates based in Mumbai, India, with a presence in varied industries, including appliances, precision equipment, machine tools, furniture, healthcare, interior solutions, office equipment, food-processing, security, materials handling and industrial storage solutions, construction and information technology. The Group is headed by Adi Godrej and his brother in law and cousin, Nadir Godrej and Jamshyd Godrej.

Traditionally, Vikhroli, a suburb to the Northeast of Mumbai has been Godrej's manufacturing base, but increasingly the group has moved significant production facilities away from Mumbai. The Godrej group also owns vast land in Vikhroli, occupying 3500 acres (14 km<sup>2</sup>) of land on both sides of the Vikhroli section of the LBS marg. Such vast land can, in theory, be used to create at least 1,500 acres (6.1 km<sup>2</sup>) of residential floor space, which, at very modest rates (Rs.10000/sq ft), can be sold for USD 16 billion.

<b>Type</b>	<a href="#">Public</a>
<b>Industry</b>	<a href="#">Conglomerate</a>
<b>Founded</b>	1897
<b>Founder(s)</b>	<a href="#">Ardeshir Godrej</a> <a href="#">Pirojsha Godrej</a>
<b>Headquarters</b>	<a href="#">Mumbai</a> , <a href="#">Maharashtra</a> , <a href="#">India</a>
<b>Key people</b>	<a href="#">Adi Godrej (Chairman)</a> <a href="#">Jamshyd Godrej</a> <a href="#">Nadir Godrej</a>
<b>Products</b>	<a href="#">Real estate</a> , <a href="#">FMCG</a> , <a href="#">industrial engineering</a> , <a href="#">Appliances</a> , <a href="#">Furniture</a> , <a href="#">Security</a> , <a href="#">Agri care</a> , and others
<b>Revenue</b>	▲ ₹21600 <a href="#">crore</a> (US\$3.5 billion)(2013) <sup>[2]</sup>
<b>Employees</b>	26,000 (2013)
<b>Subsidiaries</b>	<a href="#">GCPL</a> , <a href="#">Godrej Infotech Ltd</a> , <a href="#">Godrej Industries Ltd</a> , <a href="#">Godrej Properties</a> , <a href="#">Godrej Agrovat</a>
<b>Website</b>	<a href="http://www.godrej.com">www.godrej.com</a>

**CRACK GATE..**

1. A transmission line is distortion less if
  - a)  $RL = (1/GC)$    b)  $RL = GC$    c)  $LG = RC$    d)  $RG = LC$
2. The skin depth at 10 MHz for a conductor is 1 cm. The phase velocity of an electromagnetic wave in the conductor at 1000 MHz is about
  - a)  $6 \times 10^6$  m/sec   b)  $6 \times 10^7$  m/sec   c)  $3 \times 10^8$  m/sec   d)  $6 \times 10^8$  m/sec
3. In a twin wire transmission line in air, the adjacent voltage maxima are at 12.5 cm and 27.5 cm. The operating frequency is
  - a) 300 MHz   b) 1 GHz   c) 2 GHz   d) 6.28 GHz
4. An excitation is applied to a system at  $t = T$  and its response is zero for  $- < t < T$ . Such a system is
  - a) non-causal system   b) stable system   c) causal system   d) unstable system
5. A 3 phase, 4 pole squirrel cage induction motor has 36 stator and 28 rotor slots. The number of phases in the rotor is
  - a) 3   b) 9   c) 7   d) 8
6. A  $1.8^\circ$  step, 4 phase stepper motor has a total of 40 teeth on 8 poles of stator. The number of rotor teeth for this motor will be
  - a) 40   b) 50   c) 100   d) 80
7. A power system network with a capacity of 100 MVA has source impedance of 10% at a point. The fault level at that point is
  - a) 10 MVA   b) 30 MVA   c) 3000 MVA   d) 1000 MVA
8. The insulation of modern EHV lines is designed based on
  - a) the lightning voltage   b) corona   c) radio interference   d) switching voltage
9. The transfer function of a tachometer is of the form of
  - a)  $KS$    b)  $K/s$    c)  $K/(s+1)$    d)  $K/[s(s+1)]$
10. A differentiator has transfer function whose
  - a) phase increases linearly with frequency   b) amplitude remains constant
  - c) amplitude increases linearly with frequency   d) amplitude decreases linearly with frequency

11. A variable reluctance type tachometer has 150 teeth on the rotor. The counter records 13500 pulses per second. The rotation speed is

- a) 4800 rpm    b) 5400 rpm    c) 6000 rpm    d) 7200 rpm

12. Insertion of a dielectric material in between the plates of an air capacitor.

- a) increases the capacitance      b) decreases the capacitance  
c) has an effect whatsoever      d) increases the breakdown

13. The reflection coefficient of short-circuit line is

- a) -1      b) +1      c) 0.5      d) zero

14. One of the applications of current mirror is

- a) output current limiting    b) obtaining a very high current gain  
c) current feedback      d) temperature stabilized biasing

15. The noise margin of a TTL gate is about

- a) 0.2 V    b) 0.4 V    c) 0.6 V    d) 0.8 V

16. In the 8085 microprocessor, the RST6 instruction transfers the program execution to the following location

- a) 30 H    b) 24 H    c) 48 H    d) 60 H

17. The MOSFET switch in its on-state may be considered

- a) resistor    b) inductor    c) capacitor    d) battery

18. The TRIAC can be used only in

- a) inverter    b) rectifier    c) multi-quadrant chopper    d) cycloconverter

19. Resonant converters are basically used to

- a) generate large peaky voltage      b) reduce the switching losses  
c) eliminate harmonics      d) convert a square wave into a sine wave

20. A single phase voltage source square wave inverter feeds pure inductive load. The waveform of the load current will be

- a) sinusoidal    b) rectangular    c) trapezoidal    d) triangular



**SOLUTIONS:**

1) (c)

8) (d)

2) (a)

9) (a)

Skin depth  $\delta = [2/(\mu\omega\sigma)]$ 

10) (c)

$$= \frac{1}{\pi \times 10^7 \mu \sigma} = 1 \times 10^{-2}$$

11) (b)

Phase velocity  $= (\omega/\delta) = (2\omega/\sigma\mu)$ 

$$\text{Rotational speed} = \frac{13500}{150} = 90 \text{ rps}$$

$$= \frac{2 \times 2\pi \times 10^9}{1/(\pi \times 10^{-7} \times 10^{-4})}$$

$$= 90 \times 60 \text{ rpm} = 5400 \text{ rpm}$$

$$= 2\pi \times 10^6 = 6 \times 10^6 \text{ m/s}$$

12) (a)

3) (b)

13) (b)

$$\text{Maxima}(\lambda/2) = 27.5 - 12.5 = 15 \text{ cm}$$

14) (d)

Current mirror application is in temperature stabilized biasing

$$f = (c/\lambda) = \left(3 \times \frac{10^8}{0.3}\right) = 10^9 = 1 \text{ GHz}$$

15) (b)

4) (c)

16) (a)

Causality sequence is defined as

$$6 \times 8 = 48 = 30H$$

$$x(t) = 0 \text{ for } t < 0$$

5) (a)

17) (c)

Number of rotor phases is same as motor

18) (c)

phases

19) (b)

6) (b)

20) (d)

7) (d)

Impedance is 0.1 pu, the current in the event of 10 pu. The fault level at the fault point

$$= 100 \times 10 = 1000 \text{ MVA}$$

**TIME TO KNOW OUR ALUMNI**

Mr.Muthu Raja

Batch - 1995 - 1999.

[raja.am@gmail.com](mailto:raja.am@gmail.com)



Mr.Muthu Raja completed his Bachelor of Engineering (Electrical and Electronics Engineering in National Engineering College, Kovilpatti – 1999 Batch). He is having 10 years of experience in Mainframe database management, project implementation and architecture. Currently working as a Mainframe DB2 system programmer in IBM since May, 2011, has work experience on various Mainframe operating systems OS/390, V1R9, V1R10, V1R11 and DB2 Version 8, v9 & v10

My role and responsibilities is to Design, Install, upgrade & maintain the DB2 system, IBM, third part vendor data management products in Mainframe customer environment, Data migration, Db2 system cloning.

**Experience Details –**

Tata consultancy services - 2004 to 2011

International Business Machine (IBM) - Since May' 2011.

## **A FIRST STEP TOWARDS ONLINE COURSES AND ONLINE MATERIALS**

Dr.L.Kalaivani, Associate Professor/EEE

Mr.M.P.E.Rajamani, Assistant Professor (SG)/EEE

It is a strongly belief that the future of higher education lies with online learning which is a flexible, self-paced method of education. Increasingly, colleges and university students now find themselves with other obligations beyond that of getting a degree. Jobs and family commitments make equal demands on their time. Having the option of taking online classes and studying on their own time is critically important. At the same time, many state institutions are unable to accommodate all those who want to take classes on campus, escalating the demand for online learning.

Online materials also have the potential to revolutionize higher education. Students will be able to learn at their own pace and problems as simple as finding a place to park on campus will be eliminated. Public colleges and universities simply cannot build new facilities to accommodate all those who need credits in higher education. Students need to determine if online learning is an option for them because not everyone does well with this type of study. Some questions that any potential online students should ask is whether or not they can learn independently; how organized they are with their time; whether they are computer savvy; their level of reading comprehension; and if they have at least ten hours a week to devote to each course.

Success in an online course often depends on how connected a student feels to his instructor and fellow students. For online learning to succeed, it is also essential to train the instructors who can adapt to this new medium. Fortunately, new technology makes it possible for instructors to create exciting new ways to learn online that engage students in ways that are more effective than a lecture hall with hundreds of students.

Hence it is necessary to develop a national transfer pool so that certain online courses can be taken anywhere in the country and then transferred to the student's home institution. Finally, lifelong learning must now be a part of everyone's career plans. In today's job market, taking online courses help workers remain competitive and they don't need to take time off from their jobs to do this.

Some of the key advantages of on learning include:

- Improved open access to education, including access to full degree programs
- Better integration for non-full-time students, particularly in continuing education
- Improved interactions between students and instructors
- Provision of tools to enable students to independently solve problems
- Acquisition of technological skills through practice with tools and computers.
- No age-based restrictions on difficulty level, i.e. students can go at their own pace

We are in the early days of online learning. The possibilities are limitless. Here you can find some of the websites and Details for online materials and online courses!!!!

### **Online Materials:**

Get free online materials from the world's leading universities- MIT, Harvard, Berkeley, Oxford and more. MIT Open Course Ware (OCW) makes the materials used in the teaching of almost all of MIT's subjects available on the Web with free of charge. With more than 2,200 courses available, OCW is delivering on the promise of open sharing of knowledge. To get more information, please visit the website given below.

- <http://ocw.mit.edu/index.htm>
- <http://ocw.utm.my/>
- <http://ocw.kfupm.edu.sa/BrowseDepartment.aspx?cid=ENG&did=EE>
- [http://ocw.usu.edu/Electrical\\_and\\_Computer\\_Engineering/index.html](http://ocw.usu.edu/Electrical_and_Computer_Engineering/index.html)
- <http://nptel.ac.in/>

EdX has launched a Verified Certificate of Achievement to help you with this. EdX offers interactive online classes and MOOCs from the world's best universities like MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT. To get more information, please visit the website given below.

- <https://www.edx.org/>

**Online Courses:****1. Course Title: Introduction to Computer Programming, Part1****School:** IITBombayX**Course Code:** CS101.1x**Classes Start:** 29 July 2014**About the course:**

This is the first of a two- part course, and corresponds to the first half of the Computer Programming course CS101 at IIT Bombay. In this part, basic concepts of computer programming are introduced starting with the notion of an algorithm. Emphasis is on developing the ability to write programs to solve practical computational problems. Topics include:

- ❖ Algorithms
- ❖ Elements of C/C++ programming languages
- ❖ Basic data types Sequential and conditional execution
- ❖ Iterative solutions
- ❖ Arrays, matrices, and their applications
- ❖ Functions
- ❖ Sorting and searching
- ❖ Elements of string processing
- ❖ Introduction to pointers
- ❖ Basics of Software Engineering.

Participants will get to read and understand many sample programs, and will have to write several on their own. This course deals with procedural programming, and attempts to inculcate good programming practices in a novice programmer.

**Course Length:** 6 Weeks**Estimated effort:** 8 hours/week**Course Staff:** Prof. Deepak B.Phatak

**Prerequisites:** Knowledge of high school mathematics is essential and adequate. Exposure to pre- calculus is desirable.

**Website:** <https://www.edx.org/course-list/iitbombayx/allsubjects/allcourses>

**2. Course Title: Introduction to Computer Programming, Part2****School:** IITBombayX**Course Code:** CS101.2x**Classes Start:** 23 Sep 2014**Course Length:** 6 Weeks**Estimated effort:** 8 hours/week**About the course:**

This is the second of a two- part course, and corresponds to the second half of the Computer Programming course CS101 at IIT Bombay. This part begins with a brief review of basic programming concepts, discusses how to handle complex computational applications, and then introduces the basics of object oriented programming. Topics include:

- ❖ Pointers
- ❖ Structures
- ❖ File processing
- ❖ Handling graphics
- ❖ Introduction to Object Oriented Programming Concepts
- ❖ Classes and Methods
- ❖ Standard Library of C++.

Apart from solving relatively larger and more complex programming problems, participants will get exposure to building a typical programming project.

Course Staff: Prof. Deepak B.Phatak

Prerequisites: Knowledge of high school mathematics is essential and adequate. Exposure to pre- calculus is desirable. Knowledge of basic programming concepts, as covered in CS101.1x is necessary.

**Website:** <https://www.edx.org/course-list/iitbombayx/allsubjects/allcourses>

## STUDENTS' ACHIEVEMENTS

The following students awarded in various Co-curricular and Extra curricular activities.

Mr.T.Karkuvelraja – Best Outgoing Student (Male) – First time in our Department

Mr.T.Karkuvelraja – Best IE (I) Volunteer

Mr.S.M.S.Annamalai Samy - Best IEEE Volunteer

Mr.S.Sarath kumar - Best NSS Volunteer Special Camp

### SECOND YEAR A

S.No.	Name	Paper title	College	Date
HANDS ON TRAINING				
1	M.Gurusamy M.Gopal M.Kesavamani M.Manikandan K.Ashokkumar R.Muthukumar K.Iyappan R.Muneeswaran S.Ebenezer V.Logeshraja R.Latchiyabharathi S.Mohamed Suhail	PCB Board Designing & Introduction of Circuit Simulation	National Engineering College, Kovilpatti	2-3-2014
WORKSHOP				
1	A.Mariappan R.Muthukarthik	Routine All The Way	National Institute of Technology	1-3-2014
POSTER PRESENTATION				
2	M.Gurusamy M.Gopal	Water Management	National Engineering College, Kovilpatti	4-3-2014
SPORTS				
1	M.Manogiri	NEC Annual Sports Meet 1 <sup>st</sup> Prize in 4*100mt Relay, 2 <sup>nd</sup> in Discuss throw, Long Jump, Triple Jump. 3 <sup>rd</sup> in Long Jump	National Engineering College, Kovilpatti	28.03.2014

### SECOND YEAR B

S.No.	Name	Paper title	College	Date
PAPER PRESENTATION				
1	P.Sathya C.Pradeepa	Autonomous Underwater Vehicle	PSRR Engineering College, Sivakasi.	20-03-2014
2	R.Vishnu Vidya A.Soma Sundari	Facts Controller		
3	S.Porchitra M.Uthra	Universal Current Sensors		
4	G.S.Prema Nayagi Subashini.C	Pavegen Power		

5	P.Shanmugam	Embedded Based Loan Watcher For Vehicle	Dr. Sivanti Aditanar College of Engineering	14-02-2014
<b>WORKSHOP</b>				
1	S.Natarajan S.G.Sivaram S.Rama Subramanian	Labview	National Institute of Technology, Pondicherry	15-03-2014
2	M.S.Pranava Kartikeyan	Mechatronics	National Institute of Technology, Trichy	09-03-2014
<b>PROJECT PRESENTATION</b>				
1	P.Sathya C.Pradeepa R.Vishnu Vidya	Zigbee Based Industrial Monitoring System	PSRR Engineering College, Sivakasi.	20-03-2014
2	M.Pradeep M.Raj Kumar G.Varadharajan D.Ram Kumaran	Speed Control of Motor Using OFC Cable	Government Engineering College, Trichy	19-03-2014
3	P.Satyanarayanan M.S.Pranava Kartikeyan P.Suresh Kumar M.Aravind Mari	Pyro Electric Fire Alarm	National Engineering College, Kovilpatti	08-03-2014
4	S.Pandiaraj Reddy.S.Vijay S.Senthil Kumar	Speed Control of Motor	National Engineering College, Kovilpatti	08-03-2014
<b>COMPETITION</b>				
1	S.Rama Subramanian	Crosswords	National Engineering College, Kovilpatti	28-02-2014
2	R.Visnu Vidya			
3	M.S.Pranava Kartikeyan	Free Hand Sketching	National Engineering College, Kovilpatti	04-02-2014 to 06-02-2014
4	P.Shanmugam	Photo Contest	National Engineering College, Kovilpatti	04-02-2014 to 06-02-2014
<b>SPORTS</b>				
1	M.Naveen Lingam	NEC Annual Sports Meet 2 <sup>nd</sup> Place in Hockey & Football – Blue House	National Engineering College, Kovilpatti	28.03.2014
2	M.Sam Maxwell	NEC Annual Sports Meet 2 <sup>nd</sup> Place in Football – Blue House	National Engineering College, Kovilpatti	28.03.2014

**PREFINAL YEAR A**

S.No.	Name	Paper title	College	Date
<b>PROJECT PRESENTATION</b>				
1	M.Anuja S.M.K.Ajitha Shry M.S.Archana K.S.Fathima Irfana	Robot using Servomotor	National Engineering College, Kovilpatti	8-3-2014



2	C.Ganesh Kumar B.BinilWinston S.Abul Hassan	Cell phone Detector	National Engineering College, Kovilpatti	8-3-2014
FACFO				
1	N.Arun Kumar	Group Dance	II Prize	1-3-2014

**PREFINAL YEAR B**

S.No.	Name	Paper title	College	Date
PROJECT PRESENTATION				
1	S.Sam Chandrasekar S.Siddharth Gautham	Electric Insulators and Nanotechnology	Dr.Sivandhi Aadhithanaar Engineering College, Tiruchendur	2-3-2014
2	G.Ram kumar K.S.Vignesh	Electric Insulators and Nanotechnology	Sri Krishna Engineering College, Coimbatore	2-3-2014
3	C.Senthil Vel K.Thivakar	Hybrid Electric Vehicle	Institute of Engineers (India), National Engineering College	5-2-2014
4	B.Agama Devi K.Vinothini	Insulation oil treatment & its necessity in power transformer	PSRR College of Engineering	20-3-2014
5	P.Shree uthra A.Vaanmathi	Recent Trends in Power electronics	PGP College of Engineering, Namakkal	13-3-2014
WORKSHOP				
1	A.Shenbaga Lakshmi M.Muthulakshmi	Labreview, Management	College of Engineering, Guindy	11-3-2014 and 12-3-2014
2	P.Nanthinidevi B.Venkatesan S.Siddharth Gautham S.Sam Chandrasekar C.Punniyamoorthy R.Thirumani Krishnaswamy P.Vinoth Kumar	Embedded Systems	Government college of Technology, Coimbatore	7-3-2014
FACFO				
1	S.Sidharth Gautham C.Punniya Moorthy S.Sam chandrasekar R.Shanmugavel Pitchai Kumar Kannan	Mime/I <sup>st</sup> Prize	National Engineering College, Kovilpatti	1-3-2014
2	V.Suresh Kumar	Group Dance/I <sup>st</sup> Prize	National Engineering College, Kovilpatti	1-3-2014

## NEWS CLIPPINGS

**Technical Symposium Held at NEC**

Express News Service

**Thoothukudi:** A two-day national level technical symposium 'ALTANZIA- 2K14', held at National Engineering College (NEC), Kovilpatti, had concluded here on Tuesday.

The symposium was organised by the Electrical and Electronics Engineering (EEE) Association of NEC and was inaugurated on Monday. Chockalingam, Director, NEC, presided over the inaugural function in the presence of Subburaj, Principal of the College.

Mohanam, Executive Engineer, Thoothukudi Thermal Power Station (TTPS), the chief guest, inaugurated the function and delivered a special Lecture. Mohanam released the monthly newsletter of EEE department and inaugurated the flashpoint show of EEE Association.

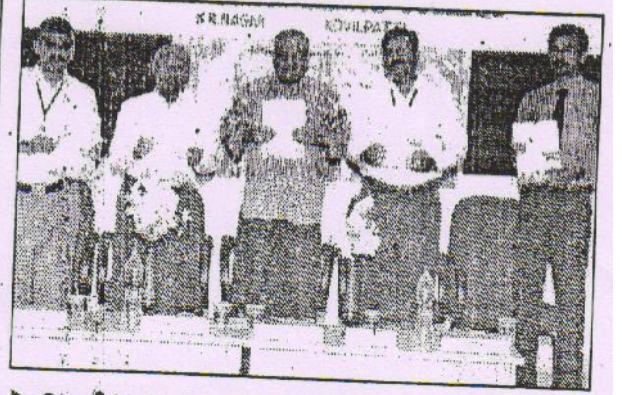
Programmes such as Slide Show, Tech-Talk, Google hunt, What's up, Say Cheese, Treasure Hunt and Technical Quiz were also conducted

gured the flashpoint show of EEE Association.

Mohanam had said that the students should identify and nourish their talents and should shine in various innovative fields. He also said that there were several opportunities for the electrical engineers which the students should utilize properly for improving their skills. He further said that the students had to innovate ideas to meet out the power crisis in the country.

Programmes such as Slide Show, Tech-Talk, Google hunt, What's up, Say Cheese, Treasure Hunt and Technical Quiz were also conducted. The valedictory function was held on Tuesday and the winners of various competitions were awarded by Chockalingam and Subburaj.

As many as 90 papers were submitted by the students of various engineering colleges and 40 papers were short-listed for presentation in the symposium.



► கோவில்பட்டி நேஷனல் பொறியியல் கல்லூரியில் நடந்த தேசிய அளவிலான கருத்தரங்கில் தூத்துக்குடி அனல் மின் நிலைய செயற்பொறியாளர் மோகனன் செய்தி மலரை வெளியிட்டார்.

### நேஷனல் பொறியியல் கல்லூரியில் தேசிய அளவிலான கருத்தரங்கம்

கோவில்பட்டி, மார்ச் 13: கோவில்பட்டி நேஷனல் பொறியியல் கல்லூரியில் மின்னியல் மற்றும் மின்னணுவியல் துறை கூட்டமைப்பு சார்பில் தேசிய அளவிலான தொழில்நுட்ப கருத்தரங்கம் நடந்தது. கல்லூரி இயக்குநர் சொக்கலிங்கம் தலைமை வகித்தார். கல்லூரி முதல்வர் சுப்புராஜ் முன்னிலை வகித்தார். மின்னியல் மற்றும் மின்னணுவியல் துறை தலைவர் வில்லிஸ் இருதயராஜன் வரவேற்றார். தூத்துக்குடி அனல்மின் நிலைய செயற்பொறியாளர் மோகனன் சிறப்பு விருந்தினராக கலந்து கொண்டு கருத்தரங்கை துவக்கி வைத்து பேசினார். பல்வேறு பொறியியல் கல்லூரிகளில் இருந்து 90 கட்டுரைகள் சமர்ப்பிக்கப்பட்டன. மின்னியல் மற்றும் மின்னணுவியல் துறை மாணவர்கள் தயாரித்த கருத்தரங்கம் பற்றிய ஒலிஒளிக்காட்சி நடந்தது. ஏற்பாடுகளை மின்னியல் மற்றும் மின்னணுவியல் துறை கூட்டமைப்பு ஒருங்கிணைப்பாளர் கண்ணாயிரம், துணை ஒருங்கிணைப்பாளர்கள் பிரகாஷ், விக்னேஷ்வரன் மற்றும் துறை பேராசிரியர்கள் செய்திருந்தனர். மாணவர் சேக் அல்சபா நன்றி கூறினார்.

The New Indian Express – 12.03.2014

Dhinakaran – 12.03.2014



## Memorable Moments



Mr.T. Karkuvel Raja of Final Year has got "BEST OUTGOING STUDENT" for the academic year 2013-2014 at College day function.

Lighting Kuthuvilaku by our Prof & Head during the Inaugural Function of ALTANZIA'2K14



Snap during IEEE Student Branch Project Expo - SIPRO'14

## EEE NEWSLETTER

### PATRON

Thiru K.R.Arunachalam, Member, Managing Committee

### CO-PATRONS

Dr.Kn.K.S.K. Chockalingam, Director

Dr.P. Subburaj, Principal

### CONVENOR

Dr.M. Willjuice Iruthayarajan, Prof & Head/EEE

### STAFF ADVISORY COMMITTEE:

1. Mr. G.Kannayeram, Assistant Professor (Senior Grade)
2. Mr. N.B.Prakash, Associate Professor
3. Mr. B.Vigneshwaran, Assistant Professor

### EDITORIAL COMMITTEE

#### EDITORS:

- Mr.M.Venkadesh (Final Year EEE)
- Ms.V. Alice Sugunabai (Final Year EEE)
- Mr.A.Venkat Subramanian (Prefinal Year EEE)
- Mr.N.ArunKumar (Prefinal Year EEE)

#### REPORTERS:

- Mr.S.Ahamed Ibrahim (Prefinal EEE)
- Ms.M.S.Archana (Prefinal EEE)
- Ms.A.Muthu Meena Sundari (Prefinal Year EEE)
- Mr.M.Pranava Karthikeyan (Second Year EEE)
- Mr.M.Gurusamy (Second Year EEE)