Date: 3-3-2016

# GTU INNOVATION COUNCIL



# **UDISHA CLUB**

# Campus Activity Report of February- 2016

# (Om Engineering College, Junagadh)

**Mr. R.J.Padariya** UDISHA Club Co-ordinator, OM Engineering college, Junagadh

#### Prof. C.N. Jasani

Campus Director, OMEngineerincollege, Junagadh

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#### **Electrical Department**

# SR **ACTIVITY INFORMATION** NO. 1 Activity : Industrial Visit at Silver Pumps & Motors Type : Industrial Visit Date: 25<sup>th</sup>February 2016 Venue: Silver Pumps & Motors, Rajkot. Silver is established in 1981 as a supplier of Self priming pumps, Centrifugal Pumps, Open well submersible Pumps, Bore well submersible Pumps and Mud/Sewage Pumps. Silver Engineering Co. is striving hard with fullest of dedication, since 1981 to continuously improve the product quality & range as per the customers requirement. A pump is a device that moves fluids (liquids or gases), or sometimes slurries, by mechanical action. Pumps can be classified into three major groups according to the method they use to move he fluid: direct lift, displacement, and gravity pumps. Our main purpose for this visit is familiar with industrial environment and to get practical knowledge and learn where & how we apply our theoretical knowledge in real application. Total 50Students of 6 TH semester will get the idea of pumps and motors. Students will also get familiar with electrical equipment, types of motors and types of pumps.

On 25 th February, 2016we reached at 9:46 am at silver pumps and motors(Rajkot). We got entry at 10:00 am.We entered in to the industry we shown that there are various types of pumps and motors are made by industry.

The information about pumps and motors given below.



#### **CONCLUSION:**

From this visit, we got the information and practical knowledge about pumps and motors. Student got the knowledge about testing of induction motors. They got the idea how pumps and motors are made in industry. About 50 students of 5 th Semester Electrical Engineering of Om Engineering College, Junagadh & faculty named **Prof. M. M. Makwana** benefited from this visit as they got chance to discussion with In-charge officer and other engineers working at industry.

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# Activity : Industrial Visit at Wind Farm, Navadra Type : Industrial Visit Date: 13<sup>th</sup> February 2016 Venue: Wind Farm, Navadra

Wind power is extracted from air flow using wind turbines or sails to produce mechanical or electrical power. Wind turbines convert the kinetic energy in the wind into mechanical power. This mechanical power can be used for specific tasks (such as grinding grain or pumping water) or a generator can convert this mechanical power into electricity to power homes, businesses, schools, and the like.

The development of wind power in India began in the 1990s, and has significantly increased in the last few years. Although a relative newcomer to the wind industry compared with Denmark or the United States, India has the fifth largest installed wind power capacity in the world. In 2009-10 India's growth rate was highest among the other top four countries.

Gujarat government's focus on tapping renewable energy has led to sharp rise in the capacity to generate power using wind energy in the last few years. According to official data, wind power generations capacity in the state has increased a staggering ten times in just six years. As per C WET data, the total installed capacity in Gujarat stood at 3093 MW Navdara is one of potential wind farm site in Gujarat which installed capacity is 2.8MW.



Our main purpose for this visit is to be familiar with industrial environment and to get practical knowledge of electrical power generation through Renewable Energy source.

Students of 4 th semester will get the idea of electrical power generation, Transmission and distribution. Students will also get familiar with Wind Mill, Wind Turbine and its parts.

#### Key Points:

#### • How Electricity is generated:

The wind direction rotates the wind turbine to face into the wind. The energy in the wind (called kinetic energy) turns the turbine blades around the rotor (creating mechanical energy). The rotor connects to the main shaft, which turns inside the generator housing. Here, a magnetic rotor spins inside loops of cooper wire. The electricity generated then travels down large cables from the nacelle, through the tower, and into an underground cable. At wind farms, cables from different turbines take the electricity generated to a substation. Here, a step-up transformer again increases the electrical output.

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A transmission line connects the electricity output at the substation to the electrical grid serving communities throughout the region.

#### • Types of Generator Used:

Single winding: It is run on 1000 rpm Double Winding: It is run on 750 rpm

#### • Wind Mill Capacity:

Capacity of wind mill 250Kw Height of the wind mill is 30 meter



#### **CONCLUSION:**

From this visit, we got the information and practical knowledge about Power Generation through wind mill and transmission and distribution of power. Student got the knowledge about wind mill, wind turbine, generator. They got the idea how electricity is generated through wind mill and types of generator and their connection and from the control panel how to take reading and how to manually stop wind mill. About **45 students** of **4th Semester Electrical Engineering** Class of Om Engineering College, Junagadh & Two faculty members named **Prof. K.B. Patel** and **Prof. P.B. Vala** were benefited from this visit as they got chance to discussion with In-charge officer and other engineers working at wind farm.

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#### Activity : Sat-Sun Training at 66KV SUBSTATION, RANIGPARA Type : Training Date: 13<sup>th</sup> & 14<sup>th</sup> February 2016

Venue: 66KV SUBSTATION, RANIGPARA

Gujarat Energy Transmission Corporation Limited (GETCO) was set up in May 1999 and is registered under the Companies Act, 1956. The Company was promoted by erstwhile Gujarat Electricity Board (GEB) as its wholly owned subsidiary in the context of liberalization and as a part of efforts towards restructuring of the Power Sector. The company is now a subsidiary of Gujarat Urja Vikas Nigam, the successor company to the GEB.

An electrical substation is a subsidiary station of an electricity generation, transmission and distribution system where voltage is transformed from high to low or the reverse using transformers.Electric power may flow through several substations between generating plant and consumer, and may be changed in voltage in several steps.

A substation that has a step-up transformer increases the voltage while decreasing the current, while a step-down transformer decreases the voltage while increasing the current for domestic and commercial distribution.

Our main purpose for this 2 days visit is to be familiar with industrial environment and to get practical knowledge of electrical power transmission and distribution.

Students of final year Electrical 6 th semester got the idea of electrical power transmission and distribution. Students also got familiar with Transformer maintenance, circuit breaker, Transformer isolator, bus bar, Protective relays, Lightening arresters, Load break switches.



#### Key Points:

#### • Different Protection Equipment:

Circuit breakers, Transformers, Protective relays, Lightening arresters, Load break switches.

#### • SF6-Circuit Breakers:

Due to the unique properties of SF6, it is used for 11KV & 66KV lines protection. . Some of the outstanding properties of SF6 making it desirable to using power applications are:

High dielectric strength

Unique arc-quenching ability

Excellent thermal stability

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#### Good thermal conductivity

#### • Lightening arresters:

Lightening arresters are provided in order to discharge the high voltages. It acts as main protective device for feeder.

#### • Isolator:

In this substation the three pole isolator are provided for minimum ground clearance.

#### • Transformer:

Step down Transformer" is used to step-down the voltage level from 66KV TO 11.5KV by using.

#### • Battery Room:

Battery Room is Most Important Section In Sub- Station. Because ,all relay are operate on constant d.c. supply.55 battery are used hear we give 110 v for operate relay easily. These batteries are charged when AC supply is ON.



#### **CONCLUSION:**

From this visit, we got the information and practical knowledge about Power Distribution and Transmission. Student got the knowledge about different protection devices used in substation. They got the idea how to read the one line diagram of power substation using different symbols used in diagram. Student cleared out practical knowledge of transformer as how it step down voltage 66 KV to 11.5 KV. About 4 students were benefited from this visit as they got chance to discussion with assistant engineers working at Substation.

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# Activity : Sat-Sun Training at Universal Transformer Maintenance & Repairing Type : Training Date: 13<sup>th</sup> & 14<sup>th</sup> February 2016 Venue:Universal Transformer Maintenance & Repairing

The Universal Transformer Maintenance and repairing is the unit of repair the PGVCL's faulty transformer and test after repair the transformer.

Generally the transformer working on demand load, but the transformer design on maximum load. When the Connected load is over the maximum load that time possibility of burned out of transformer winding is high.

The Unit is replace the burned winding and other burned- out part of transformer and fill up the transformer fresh oil.

After repair the transformer they perform below tests

1) Open Circuit tests

2) Short Circuit test

3) Turn Ratio Test



Our main purpose for this visit is to be familiar with industrial environment and to get practical knowledge of Construction of Transformer, Repairing of Distribution Transformer and transformer testing. one other purpose is how we can decide our 8-semester project on industrial based (IDP).

#### Type of Transformer:

#### Core type transformer:

In core-type transformer, the windings are given to a considerable part of the core. The coils used for this transformer are form-wound and are of cylindrical type. Such a type of transformer can be applicable for small sized and large sized transformers. In the small sized type, the core will be rectangular in shape and the coils used are cylindrical. In the case of circular cylindrical coils, they have a fair advantage of having good mechanical strength. The cylindrical coils will have different layers and each layer will be insulated from the other with the help of materials like paper, cloth, mica board and so on.

#### Shell Type Transformer:

In shell-type transformers the core surrounds a considerable portion of the windings. The coils are form-wound but are multi layer disc type usually wound in the form of pancakes. Paper is used to insulate the different layers of the multi-layer discs .

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#### **Outer Parts Of Transformer:**

#### Yoke:

It is use to protect the transformer inner part to bad condition .

#### **Buchholz Relay:**

it is a very sensitive gas and oil operated instrument which safely detect the formation of gas or sudden pressure inside the oil transformer. It is a electrical and mechanical both type operated device. Electrical type relay is vary accurate as compare to mechanical type relay.

#### Conservator Tank:

This is a cylindrical tank mounted on supporting structure on the roof of the transformer's main tank. When transformer is loaded, the temperature of oil increases and consequently the volume of oil in the transformer gets increased. Again, when ambient temperature is increased, the volume of oil is also increased. The conservator tank of a transformer provides adequate space for expansion of oil. Conservator tank of transformer also acts as a reservoir of oil.

#### Oil Level Indicator:

It is used to show the oil level in the transformer.

#### Breather:

When the temperature changes occur in transformer insulating oil, the oil expands or contracts and there an exchange of air also occurs when transformer is fully loaded. When transformer gets cooled, the oil level goes down and air gets absorbed within. This process is called breathing and the apparatus that pass through the air is called breather. Actually, silica gel breathers controls the level of moisture, entering electrical equipment during the change in volume of the cooling medium and airspace caused by temperature increasing. So it sucks the moisture from the air which is taken by transformer so that dry air is taken by transformer.

#### Winding Temperature Indicator:

Used to show the temperature of transformer winding.

#### Cooling Fans/Radiator:

These are used for cooling of the transformer oil. The capacity of the transformer is dependent to its temperature that is why it is imperative for it to have a cooling mechanism for better performance and higher efficiency.

#### System Ground Terminal:

system ground terminals in a power transformer are usually present whenever the connection type of the transformer windings has in it. This terminal can be found in-line with the main terminals of the transformer.

#### Drain Valve:

it can be usually found in the bottom part of the transformer tank. Drain valves are used whenever oil replacement is necessary. .

#### CONCLUSION:

From this visit, we got the information and practical knowledge about Distribution Transformer . We got the knowledge about different outer and inner part of transformer like core, winding, relay and different type of transformer testing. They got the idea how to find out transformer fault and how to solve it, and also see that how change transformer oil and winding. Then we learn the importance of core design in transformer that core design is important to improve transformer efficiency. Then after we see that how to purify the transformer oil with the use of oil filter. Then we see that winding placed in core then core is put in industrial oven in 2 to 3 days (85` to 90` c).

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# Activity : Blood Donation Camp Type : Social Activity Date: 19<sup>th</sup> February 2016 Venue:Om Engineering College, Junagadh.

OM Engineering College is doing many social activities every year for social awareness & to help the social as we are a part of the society. As we know that blood donation can save many lives so that we arranged a Blood Donation Camp on 19 th February, 2016. Every students & faculties gave their contribution as per their will.



#### **CONCLUSION:**

Showing the importance of Lights, students of Om Engineering College have initiated to donate blood in blood donation camp organized under the aigis of Om Engineering College, Junagadh. Students of Om Engineering College have worshipped Goddess Saraswati at right place to right hand. They have philosophically proved the victory of Humanity on helping society on such auspicious event. The students and staff members of degree and diploma college of Om Engineering Campus have gathered and donated blood. Thus, this activity was successfully executed

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#### **Mechanical Department**

#### SR. **ACTIVITY INFORMATION** NO Activity : Inaugural function of Business Accelerator and Start up cell ( First in Gujarat) 1 Type : Inaugural function Date: 10<sup>th</sup> February 2016 Venue : OM Engineering College, Junagadh. In the last decade, India spent less than 1% of the GDP for R&D and Innovation. There are around 5000 startups world over, in which 2000 are in US and 1000 in china while India has only 65 incubators. More then 60% of Gujarat population is in the age group of 1559. A population means a young workforce which in turn implies a more innovative and voung entrepreneurial mind set. The government is focused strongly not just on the employability but also on initiating the startups incubators/centers for developing entrepreneurial skill in the vouth. Startups in an economy's technology sectors is an important indicator of technological performance for several reasons like formation of new firms and introduction of new technology is a major source of innovation and technological advance. Under this vision **Om Engineering College inaugurated FIRST business accelerator** and startup cell among Gujarat in association with The Centre for Entrepreneurship Development Govt. of Guj. Organization) (CED \_ А dated February 10 th , 2016 at **Om Engineering College Junagadh.** In this inaugural function various eminent personalities from industries and deputy director form CED delivered their thoughts on entrepreneurship. **Business** Accelerator 6. Start Up Cell

Function was inaugurated by all guest and speakers on the dais like Shri. Mahendra Bharvada (CED), Shri Mayank Mehta (CED), Shri Sanjay Koradia(CEO Vanraj Protins) Shri Yogendrasinh Padhiyar (Director Gujarat Yatradham Vikas Board), Shri Prashant Kadiwar (Trustee OEC) Shri Jaydeep Waghela (Trustee OEC) and Shri Chirag Jasani (Director OEC).

Some of the topics discussed during seminar:

During welcome speech Prof. I M Khan gave brief idea about activities conducted by CED and OEC with brief details and working about business accelerator and

startup cell. All the dais members and industrialists are welcomed with a book as a symbol of knowledge by Om family with brief introduction about them. CED is working since 1979 with a vision of enhancement of industry responsive Skill & Entrepreneurship, along with Institutional development for Industrial growth in Gujarat.



Our Key note speaker Mr. Mahendra Bharvada informed importance of such centre in educational institute. He also informed different schemes available from government for new entrepreneurs. Later on **Mr. Sanjay koradia** well known social worker and CEO of Vanraj Protins share his carrier and problems facing during becoming entrepreneur. He also share and promote financial benefits available to new entrepreneurs.

At last **Mr. Mayank Mehta** share the role of CED to students and industrialist for entrepreneurship development. Also he shared training modules and training sessions organized by CED for technical and non technical students. He update all participants regarding current scenario and market requirement to become new entrepreneurs.



After completion of valedictory function all guests and industrialist move for the inaugural of business accelerator and startup cell where **Mr. Sanjay Koradia** inaugurate the cell for all persons. Then all guest move to board room and have a conversation with **Mr. Mahendra Bharvada sir** regarding schemes available for industrialist.

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#### **Civil Department**

SR. NO	ACTIVITY INFORMATION
1	Activity : Workshop on A BUILDING PLANNING IN AutoCAD Type : Workshop
	Date: 13 <sup>th</sup> &14 <sup>th</sup> February 2016 Venue : OM Engineering College,Junagadh.
	OM engineering provides platform of different collegs across the junagadh like Government polytechnic, junagadh,Amrut institute, junagadh,Government polytechnic, porbandar,Dr. J. N. Mehta Government polytechnic,Amreli,Government polytechnic rajkot.etc. Our main purpose for organizing this workshop is to get knowledge about How to develop the skill in Building designing in AutoCAD. As such the AutoCAD is beneficial to Create Building Design, Factory Design, Plan Design, etc. At the beginning, Ms. K. P. Barad gave introduction about the How to develop the skills for better building designing in AutoCAD. Then, Ms. K. P. Barad gave carrier orientive guidance, where on can develop their own CAD portfolio, for engineers they can design civil structure.
	In the session of first day, the basic commands such as Screen Layout, Create a New Drawing, Open a Drawing, Save a Drawing, Units, Line, Circle, Arc, Ellipse, Polygon, Rectangle, Offset, Trim, Extend, Chamfer, Fillet, Copy and Move, Object Snap were taught. After the basic commands the students were made to draw a line plan of a building. In the next day Prof. B.B.Sarvaiya gave introduction about 3d commands such as, viewport, box, subtract, union, region, extrude etc
	we were taught, and at last a simple building plan and elevation of residential building was made to be drawn. <b>CONCLUSION:</b> From this workshop, we get the information and knowledge about the use of AutoCAD software for building designing in the field of civil engineering.

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#### **Computer Department** SR. **ACTIVITY INFORMATION** NO Activity : Seminar on GATE Awarness 1 Type : Seminar Date: 24<sup>th</sup> February 2016 Venue : OM Engineering College, Junagadh. OM Engineering College organized GATE Awarness Seminar. Becuase A student seeking admission in M. Tech/MS in IISc / IITs / NITs and other universities is advised to give the GATE exam as these institutes demand a good GATE score. By taking GATE, students who were unlucky in IIT – JEE get one more chance to study in IISc / IITs, provided they score well. Engineering Graduate Aptitude Test in (GATE) is an all India examination that primarily tests the comprehensive understanding of various undergraduate subjects in engineering and science. GATE is conducted jointly by the Indian Institute of Science and seven Indian Institutes of Technology (IIT Bombay, IIT Delhi, IIT Guwahati, IIT Kanpur, IIT Kharagpur, IIT Madras and IIT Roorkee) on behalf of the National Coordination Board – GATE, Department of Higher Education, Ministry of Human Resources Development, Government of India.

Prof. Ashish Kacha who is Director of GATE Academy give a brief introduction about important and Benifits of GATE.

The importance of GATE exam cannot be stressed enough. Depending on the GATE score, students can apply to some of the top PSUs (Public Sector Undertakings) that offer lucrative jobs. Companies such as BHEL, Indian Oil Corporation, NTPC and Bhabha Atomic Research Centre look into the GATE scores for selection of candidates into their organizations. Some foreign colleges such as the National University of Singapore and Nanyang Technological University and companies consider the GATE score for their entrance process. This increases one's chances of foreign placement. A students who has completed M.Tech will get opportunities to serve as professors in the teaching field. Although GATE is thought to be one of the toughest examinations in India where competition is very high, keep in mind that GATE qualified candidates are given preference in many industries. Studying for the GATE exam will

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also help the student focus on PSU recruitment exams. GATE qualified candidates can avail scholarships on fulfilment of certain conditions.

#### Benefit of GATE:

The advantages of taking the GATE exam are varied. Here's a look at the most important reasons:

- Whether you can get admission to top notch M.Tech/ME/MS institutes depends largely on your GATE results.
- Clearing the GATE exam is a chance for you to experience the true essence of being an engineer or having an engineering degree.
- Preparing for the GATE questions helps you improve on your research & development skills.
- Students having good GATE results get a chance to learn advanced engineering concepts through world class faculties.
- GATE is a gateway to extensive practical exercises, various case studies, simulation & modelling of real life problems, individual and group projects, research publications/presentations in journals/conferences, etc.
- GATE helps you learn in a highly competitive environment (best brains in the country) and, thus, develops and broadens your intellectual thought process.

#### Benefits of ME/M.Tech:

- Better and more satisfying job profile
- Earn while you learn: financial scholarships (a minimum of 8,000/ INR per month)
- Higher salary offered as compared to BE/B.Tech
- Eligibility criteria to apply for faculty/research positions in educational/R&D centers.

GATE is a mandatory qualification even for self financing students to post graduate programs. It helps you get an edge over peers, and awards technical certification. GATE is also recognized and accepted in the University of Singapore. GATE results are considered as eligibility criteria when applying for Public Sector Units (PSU) jobs.

#### Conclusion:

By taking GATE, students who were unlucky in IIT – JEE get one more chance to study in IISc / IITs, provided they score well.

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# Activity : Workshop on Unity3D Type : Workshop Date: 6<sup>th</sup> ,7<sup>th</sup> ,13<sup>th</sup> &14<sup>th</sup> February 2016 Venue : OM Engineering College,Junagadh.

The Introduction to the Unity3D game development plateform will familiarize students with general concepts and technology. The seminar is intended to teach students how to develop own game with the Unity3D plateform. Gives the two days workshop scedule to the students.

Prof H. K. Gajera gives warm welcome to all the students. And give sort introduction about the seminar. Explain the importance of this kind of seminar to the student.

How to install Unity3D and define its tools:



Prof. S. R. Patodiya. (Assistent professior) explain about how to install Unity3d and how to use it's defferent tools and its functionality. And show the short vidio of Angree bird game which develop using Unity3D pletform.

Prof. S. R. Patodiya Explain "Basic tools of Unity3D And how to use that tools in game developmeent"

Some key points addressed by Prof S. R. Patodiya

#### What is unity 3d?

#### How to install unity3d?

#### Main windows

#### Game Assets:

Discuss diffrent type of Asets like plane, capsule, square,. Etc. That helpful in game development. Like plane, capsule, square,. Etc. And also define that how can we set that assetds property as per our requrement? In 3D environment.

#### **Graphic Overview:**

In Graphic overview we can give some extra ordinary effect using the graphic tools like light, camera, sheader and texture etc.

#### Make One complete game (Roll A Ball) with Unity3D:

Prof. M. J. Rathod (Assistent professior) they explain to students that how to make one simple game in unity 3D and student also develop Roll a boll game with the proper use of assets.

This workshop is helpful to the students at the company level because now a days most of game

development company try to develop the latest game in 3D environment and people also give the first prefrence to the 3D games. and Unity3d is a best pletform for develop that kind of 3D Games. We are also provide the cirtificate to the student for attending this seminar.



#### CONCLUSION:

By conducting this workshop, students got some brief ideas regarding games and Unity3D plateform. This workshop will be helpful to students at the company level. and also student for improve their development skill. Other colleges students are also benifited of this seminar and also our college students atten this workshop and got the knowledge about Unity3D pletform.

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### **College Leval Activity**

SR. NO	ACTIVITY INFORMATION
1	Activity : Spectrom 2016 Type : Technical and Non technical Events
	Date: 19 <sup>th</sup> & 20 <sup>th</sup> February 2016
	Venue : OM Engineering College,Junagadh.
	OM Engineering college organized <b>technical and non technical events</b> called as spectrom <b>2016.</b> Arround <b>2000 students</b> from different colleges has been participated in different events. Events start on 19 <sup>th</sup> February 2016. There are so mane technical events like CAD Cracker, Chemical Fuel Car, Code optimization Debugging, Electo Led, Electo PCB Circuit, Robotics, SQL Island Straw Strucature etc. And non technical events like LAN Gaming, Piccaso, Art galary, General Quiz, Fun Games, Treasure Hunt etc. Function starts with prayer on 19 <sup>th</sup> february 2016. and our Campus Director sir and trustees
	welcmoe all the dignities.we also innuagral our new website by the dignities on this day.

we will send Detail repot of Spectrom 2016 within 5 days.