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UDISHA CLUB

Campus Activity Report of July- 2015 (Om Engineering College, Junagadh)

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Electrical Department

SR NO.	ACTIVITY INFORMATION
1.	<p>Activity : Industrial Visit at Wind Farm, Navadra Type : Industrial Visit Date: 18th July 2015 Venue: Wind Farm, Navadra</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Students of 5 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.</p> 

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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 **83 students** of **5th Semester Electrical Engineerin** Class of **Om Engineering College, Junagadh** & Two faculty members named **Prof. D. A. Divrania** and **Prof. H. V. Sojitra** 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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Mechanical Department

SR NO.	ACTIVITY INFORMATION
1.	<p>Activity : Seminar on Career at Abroad for PG as well as Job Opportunities through Overseas Employment collaborated with Employment Office-Rajkot Government of Gujarat 2015</p> <p>Type : Seminar</p> <p>Date: 20th July 2015</p> <p>Venue : Om Engineering College,Junagadh.</p> <p>Now days, Employment Office, Government of Gujarat is planning to collaborate with eminent overseas centre to provide multiple opportunities to students at Abroad for doing PG courses as well as working Visas.</p> <p>The education at abroad is considered as the highest credentials at India. So students of Gujarat have started to visit abroad for the purpose of acquiring master degree as well as searching an appropriate well established company job.</p> <p>There are many students who are willing to do their PGs' at Foreign University and that can only be possible through private consultancies where Government of Gujarat has initiated a step to collaborate with authentic agencies and starts providing authentic information about Universities as well as Foreign Companies.</p> <p>IELTS:</p> <ul style="list-style-type: none">• Type: Standardized test. Available in 2 versions: "Academic", "General training". <p>The IELTS test partners also offer IELTS Life Skills, a speaking and listening test used for UK Visas and Immigration.</p> <ul style="list-style-type: none">• Developer / administrator: British Council, Education, Cambridge.• Knowledge / skills tested: Listening, reading, writing and speaking of the English language.• Purpose: To assess the English language proficiency of non-native English speakers.• Duration: Listening: 40 minutes, <p>Reading: 60 minutes, Writing: 60 minutes, Speaking: 11–15 minutes. Total: 2 hours, 45 minutes</p> <ul style="list-style-type: none">• Score / grade range: 0 to 9, in 0.5 band increments.• Score / grade validity: 2 years• Offered: Up to 4 times a month. Up to 48 times a year.• Countries / regions:More than 1,000 test centers in over 140 countries.• Languages:English

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- **Annual no. of test takers:** Over 2.5 million in 2014.
- **Prerequisites /eligibility criteria:** No official prerequisite. Intended for non-native English speakers.
- **Fee:** To find out the test fee in local currency, use the IELTS Worldwide search to identify a local centre.
- **Scores / grades used by:** More than 9,000 education institutions, governments, professional registration bodies and employers worldwide.



TOEFL:

- **Type:** Internet-based or paper-based standardized test.
- **Developer /administrator:** Educational Testing Service.
- **Knowledge / skills tested:** Reading, listening, speaking and writing of the English language.
- **Purpose:** Testing the English language proficiency of non-native English speakers for academic and other purposes.
- **Year started:** 1964.
- **Duration:** Internet-based test (iBT): 3 hours 10 minutes to 4 hours 20 minutes (excluding 10 minute break in-between). Paper-based test (PBT): 2 hours 20 minutes to 2 hours 30 minutes.
- **Score / grade range:** iBT:

0 to 30 (in 1 point increments) on each of the 4 sections. So total of 0 to 120.

PBT.

Listening: 31 to 68, Structure: 31 to 69, Reading: 31 to 67. Total of 310 to 677. Writing (separate): 0 to 6. (All in 1 point increments.).

- **Score / grade validity:** 2 years.
- **Offered:** iBT: More than 50 times a year.
- **Restrictions on attempts:** iBT: Can be taken only once in any 12-day period.

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- **Countries / regions:** 4500 test centers in 165 countries.
- **Languages:** English.
- **Prerequisites / eligibility criteria:** No official prerequisite. Intended for non-native English speakers.
- **Fee:** iBT: US\$ 160 to US\$ 250, depending on the country. PBT: US\$ 160.
- **Scores / grades used by:** Over 9000 universities, agencies and other institutions in over 130 countries.

Conclusion:

There are at least 160 students have participated in the seminar and get acknowledged with the information for foreign studies as well as bright career opportunities at various MNC companies at European countries.

At the end of the seminar, **Head of the Mechanical Department, Prof. Brijesh Garala** has delivered vote of thanks and addressed all students for their bright career towards the European countries.

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2. **Activity : workshop on Refrigeration and Air Conditioning**
Type : Faculty development program
Date: 9th July 2015
Venue : Om Engineering College.

Department of mechanical engineering from OM Engineering College arranged One Day faculty program on Refrigeration and Air Conditioning dated 8 th July 2015. Expert of this program, Alok Joshi working as a Sr. Executive Domestic & Overseas manager in Modern Refrigeration and Air-conditioning Pvt. Ltd. Since 17 years. Expert rendered his expertise to what are the different types of skills, that required in Refrigeration industry in current scenario. Approximately 15 faculty member department of mechanical engineering were attending this program.

A program was started at 1:00 pm with normal introductory speech by prof. B M Garala and session was hand over to speaker Er. Alok Joshi. Brief about Alok Joshi, he is well known in industrialist since 17 years and he is willingly in association with so many institutions for creating awareness regarding development and up-gradation of practical skill.

During his session Alok Joshi started basics of refrigeration and conditioning theory with some critical issues during practical work out and then conclude session with experimental setup.



Topics discussed during program:

- **Basic knowledge of Refrigeration-** Refrigeration is the removal of heat from a space at a temperature lower than the surrounding temperature. If we remove a bucket of water from a tank, the surrounding water rushes into fill cavity. Similarly heat rushes in, to replace the heat removed.
- **Basic knowledge of Air Conditioning Tutor-**As per ASHRAE the air condition can be defined as simultaneous control of temperature, humidity, air motion and air purity. He also explained about some Psychometric properties like Dry air, Moist air, Water Vapour, Dry blub temperature, Wet blub temperature, Humidity Sensible Heat and psychometric chart. He describe about the Sensible cooling, Sensible heating, Humidification, Cooling and Dehumidification and Heating and Humidification and calculation about coefficient of

performance of air conditioning test ring.

- **Basic knowledge of Vapor Absorption Refrigeration System**-The vapor absorption refrigeration system consists of a vapor absorption unit mounted in a cabinet fixed on a display frame of the top. The system works on principle 3-fluids absorption system. Here there is no solution circulation pump. The third fluid is an inert gas that remains mainly in the evaporator and absorber. With its presence, it is possible to maintain uniform pressure (total pressure) throughout the system and at the same time permitting the refrigerant to evaporate at low pressure corresponding to its partial pressure and hence low temperature can be possible. By using this apparatus we calculate the coefficient of performance of Vapor Absorption Refrigeration test ring.
- **Basic knowledge of Heat Pump**-A heat pump is a device that is able to transfer heat from one fluid at a lower temperature to another at a higher temperature. Heat pumps allow heat to be carried from a lower to a higher temperature level, inverting natural heat flow which in nature tends to be from a higher to a lower temperature. The function of the heat pump may be compared to that of a water pump positioned between two water basins that are connected to each other but which are located at different altitudes: water will naturally flow from the higher to the lower basin. It is, however, possible to return water to the higher basin by using a pump, which draws water from the lower one.

Conclusion:

During his session 4 major experimental setups are performed in which each and every participant works on experimental setup. In these setups participants individually calculate theoretical calculation and then check experimental analysis on test rigs. After completion of theoretical calculation and experimental setups faculty calculate efficiency of each test rig.

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3. Activity : Industrial Skill Development Program

Type : skill development program

Date: 9th July 2015

Venue : Om Engineering College.

Department of mechanical engineering from Om Engineering College arranged One Day program on industrial skill development dated 9th July, 2015. Expert of this program, **Mr. Vijay Vaghamsi** and **Mr. Yogesh Bavaliya** who is working as a **HR Manager** in **Synnova Gears & Transmissions Pvt. Ltd.** Expert rendered his expertise to what are the different types of skills that required in industry in current scenario. Approximately 80 students from our degree **7th semester** mechanical students were attending this program.

A program was started at 10:00 am with normal introductory speech by **prof. B M Garala** and session was hand over to speaker **Mr. Vijay** is well known in industrialist since 8 years and he is willingly in association with so many institutions for creating awareness regarding development of industrial skills.

Mr. Vijay start introduction about need of skill development in industry and explain nicely about the gap between industry and institutions. He also emphasized on the skill development program with practical exposure in industry during training / project work.



The central aim of this program is to examine how, within a decent work perspective, countries can develop their skills base so as to increase both the quantity and the productivity of labor employed in the economy. Inadequate education and skills development keep economies trapped in a vicious circle of low education, low productivity and low income. The report therefore analyses how strategies to upgrade and enhance the relevance of skills training and to improve access to skills for more women and men can instead help countries move to a virtuous circle of higher productivity, employment and incomes growth, and development.

Skills development is central to improving productivity. In turn, productivity is an important source of improved living standards and growth. Other critical factors include macroeconomic policies to maximize opportunities for pro-poor employment growth, an enabling environment for sustainable enterprise development, social dialogue and fundamental investments in basic education, health and physical infrastructures.

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Some of the topics discussed during program:

A. Basic introduction on automotive industries

- I. Basic requirement(5M1E)
- II. Business planning
- III. Environment Safety
- IV. Production planning
- V. Quality management System

B. QMS(quality management system)

- I. Quality policy
- II. Quality objectives

C. Basic knowledge on instrument

- I. Attribute
- I. Variable
- II. Special gauges
- III. Visual

D. Type of Inspection

- I. Receiving inspection
- II. In process inspection
- III. Metallurgical inspection
- IV. Metrology inspection
- V. Layout inspection
- VI. PDI inspection
- VII. Final inspection

E. GD&T

- I. Straightness
- II. Flatness
- III. Roundness
- IV. Concentricity
- V. Perpendicularity
- VI. Angularity
- VII. Cylindricity
- VIII. Parallelism
- IX. Position
- X. Symitricity

F. 7 QC Tools

- I. Checklist
- II. Run chart
- III. Control chart
- IV. Histogram
- V. Pareto chart
- VI. Scatter diagram
- VII. Cause and effect diagram

G. SPC(statistical process control)

- I. Basic Information
- II. Use of qc tools for SPC

Effective skills development systems – which connect education to technical training, technical training to labor market entry and labor market entry to workplace and lifelong learning – can help countries sustain productivity growth and translate that growth into more and better jobs.

This report examines the challenges faced by countries at different levels of development and their policy options. In so doing, it seeks lessons that are relevant for least developed, developing and more industrialized countries in linking skills development systems not only to the current needs of labor markets, but also to future needs as technologies, markets, the environment and development strategies change.

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4. Activity : Practice session on MATLAB

Type : Pedagogy

Date: 1st July 2015

Venue : Om Engineering College.

Department of mechanical engineering from OM Engineering College arranged a practice session on **MATLAB** under the subject of 5th semester mechanical engineering control engineering, dated 1st July 2015. **Prof. B. V. Vadalia** working as Assistant Professor in **OM Engineering College**. Approximately all faculties from our degree engineering mechanical attended the pedagogy session.



Some of the topics discussed during expert talk:

MATLAB is an interactive system whose basic data element is an array that does not require dimensioning. This allows to solve many technical computing problems, especially those with matrix and vector formulations, in a fraction of the time it would take to write a program in a scalar noninteractive language such as C or Fortran.

The name MATLAB stands for matrix laboratory. MATLAB was originally written to provide easy access to matrix software developed by the LINPACK and EISPACK projects. Today, MATLAB engines incorporate the LAPACK and BLAS libraries, embedding the state of the art in software for matrix computation.

MATLAB has evolved over a period of years with input from many users. In university environments, it is the standard instructional tool for introductory and advanced courses in mathematics, engineering, and science. In industry, MATLAB is the tool of choice for high-productivity research, development, and analysis. MATLAB features a family of add-on application-specific solutions called toolboxes. Very

important to most users of MATLAB, toolboxes allow you to learn and apply specialized technology. Toolboxes are comprehensive collections of MATLAB functions (M-files) that extend the MATLAB environment to solve particular classes of problems. Areas in which toolboxes are available include signal processing, control systems, neural networks, fuzzy logic, wavelets, simulation, and many others.

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The MATLAB system consists of five main parts:

Desktop Tools and Development Environment. This is the set of tools and facilities that help you use MATLAB functions and files. Many of these tools are graphical user interfaces. It includes the MATLAB desktop and Command Window, a command history, an editor and debugger, a code analyzer and other reports, and browsers for viewing help, the workspace, files, and the search path.

The MATLAB Mathematical Function Library. This is a vast collection of computational algorithms ranging from elementary functions, like sum, sine, cosine, and complex arithmetic, to more sophisticated functions like matrix inverse, matrix eigenvalues, Bessel functions, and fast Fourier transforms.

The MATLAB Language. This is a high-level matrix/array language with control flow statements, functions, data structures, input/output, and object-oriented programming features. It allows both "programming in the small" to rapidly create quick and dirty throw-away programs, and "programming in the large" to create large and complex application programs.