



SGT UNIVERSITY

SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY
(UGC Approved) Gurugram, Delhi-NCR

Budhera, Gurugram-Badli Road, Gurugram (Haryana) – 122505 Ph. : 0124-2278183, 2278184, 2278185

www.sgtuniversity.ac.in

TOLL FREE : 1800 102 5661

info@sgtuniversity.org



SYNERGY 2017

The Annual Technofest

HAND BOOK OF
PROJECTS

9th-11th November 2017
SGT UNIVERSITY GROUND



SGT UNIVERSITY

A CONCLAVE OF INNOVATION CUMULATING ALL SPECIALITIES



SGT UNIVERSITY

SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY
(UGC Approved) Gurugram, Delhi-NCR
Budhera, Gurugram-Badli Road, Gurugram (Haryana) – 122505 Ph. : 0124-2278183, 2278184, 2278185

— ABOUT SGT UNIVERSITY —

"परस्परं भावयन्तः श्रेयः परमवाप्स्यथ"

By mutually making each other prosperous, you will attain the highest good.

Bhagavad Gita Verse 11, Chapter 3

The SGT University is pledge bound to work towards research and innovation by providing a stimulating environment to our students through state of the art infrastructure and atmosphere. It is an acknowledged fact in modern education system that Science and innovation complement each other, and inter-disciplinary research is the right step in the future direction. In order to cultivate and encourage a dialogue between diverse disciplines, the SGT University upgraded the trademark event of Technofest, and amalgamated our specialities into a gala event titled 'SYNERGY 2017'. The occasion was graced by the honourable Chief Minister of Haryana Shri Manoharlal Khattar who expressed his pleasure to see innovative projects from the students of diverse backgrounds. The environment friendly solutions to farming issues displayed by our students especially caught his attention and received ample praise.

Our goal in hosting this event was to give a platform for inter-disciplinary research to solve various problems in the world and to overcome challenges that go beyond the framework of research in industry, government and academia. We are delighted to report that the event was a stupendous success and worked as the accurate platform for our students to showcase their talent. Once we handed over the reins to our students, we were happily surprised to see shared projects between Engineering and Physiotherapy, Dental and Ayurveda that transgressed the boundaries of discipline-centric research, and provided able solutions to challenges that affect our lives.

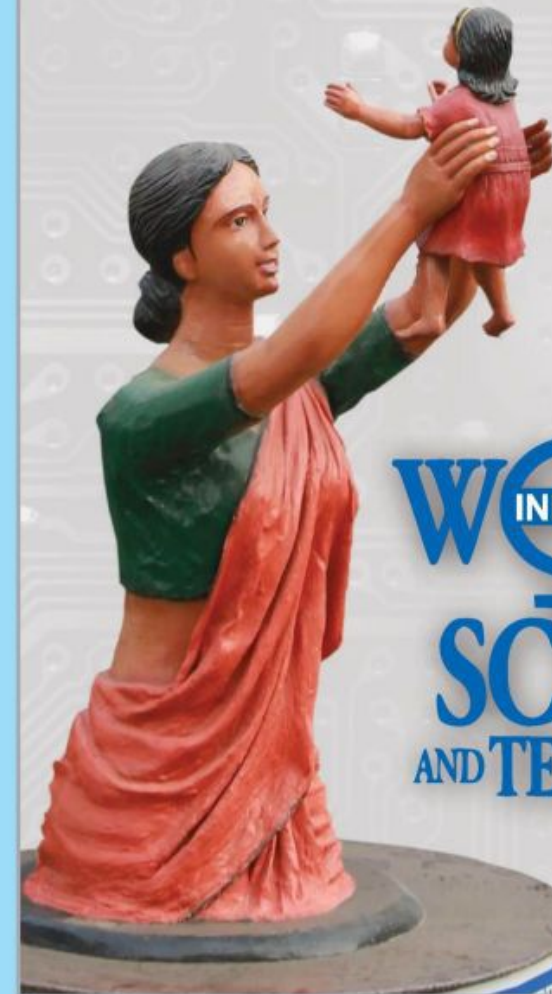
SGT UNIVERSITY

SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY
(UGC Approved) Gurugram, Delhi-NCR

Beti Bachao



Beti Padhao



INDIAN WOMEN IN SCIENCE AND TECHNOLOGY



— | SYNERGY 2017 | —

As the world progresses in leaps and bounds, newer technology is continually replacing the old one. From simple machines to hand held devices that can read your face, mankind has come a long way and the only thing that has been constant for ages is CHANGE.



Honourable Shri Manohar Lal Khattar Ji Inaugurating Synergy 2017



Chancellor, Shri Ram Bahadur Rai Ji with Honourable Shri Manohar Lal Khattar Ji

These changes have come along because of ingenious thinking of people who look at problems or situations from a fresh, different perspective and suggest unorthodox solutions which may even be unsettling at first. Unstructured brainstorming and structured lateral thinking both play a role at creating miracles. What we study at school usually becomes obsolete by the time we're ready to start working. Focusing on developing skills in students for adaptive thinking in this ever-changing reality is crucial and is the primary aim of SGT University.



Shri Sukhbir Singh Sandhu & Shri Seemanchal Dash,
Guests at Valedictory Ceremony



Dignitaries with Honourable Shri Manohar Lal Khattar Ji

The beauty of today's India is that we are actually improving at the ground level because the progress of a nation is not only measured in terms of its GDP rather the true symbols of the progress and development of a nation are the level of education and research. SGT University dreams of giving India the professionals who can actually think, create, research and innovate. Synergy literally means the cooperation of various organisations or disciplines to produce a combined greater result and that's what we aimed at, that the various faculties interact with each other and produce innovative projects that are actually through an inter Disciplinary Approach.



Physiotherapy Team Members with Dignitaries



Dignitaries with Honourable Shri Manohar Lal Khattar Ji

There are various products and projects which have been made through cooperation of multidisciplines. For eg: the Faculties of Ayurveda and Dental Science came up with a mouthwash. The Faculty of Physiotherapy and Engineering produced a miraculous aid for the Patients Suffering from Parkinson's disease. Hence, Synergy was a showcase of the technical competence gelled with recent advances through an Interdisciplinary approach where great minds came together to amalgamate their thoughts for a better tomorrow.



Agricultural Sciences Team with Innovative Projects



Dental Sciences Team with Innovative Sensing Wheel Chair

No department or faculty can work in isolation and create anything innovative. This platform allowed the faculties to understand the importance of interdisciplinary approach. Around 140 projects were from our University and around 60 projects were presented by school students from various parts of NCR and Haryana who participated in the fest. Around 18,000 students from 180 schools were invited to witness the exhibition. For serving this social cause, complete facilities including transport was provided by the University to all these schools. There were special awards for the projects to encourage the school students. Three University awards were presented, Best Innovative Project, Best Research Project, and Best Educative Project.



Education Team Members promoting Beti Bachao Beti Padhao Theme



Chef's exemplifying Culinary Skills

The gala event was inaugurated by the Hon'ble Chief Minister of Haryana, Shri Manohar Lal Khattar who was so impressed by the projects of the university that he appreciated the innovative thinking in an event the very next day. The Chief Minister emphasised that vertical farming is the future of farming which was beautifully showcased by the Faculty of Agriculture. His appreciation of all projects particularly the "Maize Grain Remover", "Hydroponics", & "Aquaponics" gave a fresh boost of energy to our students.



Fashion Team with Trending Styles



In house Media Production Team from Mass Communication

Synergy 2017, a place where creative thinking was materialised, a place where stimulatory thoughts met cutting edge technology and education was way beyond books.

SGT UNIVERSITY BRINGS TALENT, RESEARCH & INNOVATION ON ONE PLATFORM ORGANISES INTER SCHOOL QUIZ & SCIENCE FEST – 'SYNERGY' 2017

The progress of a nation is not measured in terms of its physical development rather the true symbols of the progress and development of a nation are the level of education and research.

At SGT University, we always aim at developing the students holistically and sculpt confident independent professionals who are ready to face the industry. Hence, a major share of our teaching learning is based on encouraging research, creativity and innovation.

Besides, encouraging & supporting its own students and faculty for research and innovation, SGT University also reached out to various schools & colleges in Gurugram, Delhi & NCR. Around 60 schools presented their projects in the technofest of SGT-Synergy 2017 which was inaugurated by the Honorable Chief Minister, Haryana, Sh. Manohar Lal Khattar whereas around 18,000 students from 180 schools were invited to witness the exhibition. In continuation with this Techno Fest, the University also reached out to more than 50 schools and conducted A Quiz in the schools based on General Knowledge, Science, History and Mental Aptitude for a talent hunt and to encourage the competent students.



Winner-students Of Happy Model School, Janakpuri (Sahil Wadhwa & Deepanshu Kumar)



2nd Prize-students Of N.K.Bargodia Public School, Dwarka (Sakham Minocha & Tuhina Halder)

The winners from each school were duly awarded and were all invited for An Inter School Quiz on 8th December, 2017 at the University campus. The Winning teams of the Inter School Quiz were presented with Certificates and attractive prizes to students including Printers, Tablets, and Power Banks etc while the schools were honored with trophies.

Every participant of the Quiz was presented with a Laptop Bag and a copy of SGT University Student magazine –Youth Pulse .

SGT University aims to contribute in the growth of Haryana in the fields of Science and Technology at both school and University level. The University encourages and fully support the promising projects and the deserving students to make Haryana and India proud at National and International Platforms.



3rd Position- Students Of Heera Public School, Samalkha (Yogita & Arjyal)



Students Looking Forward To The Question- In The Inter School Quiz Competition

All in One Power Bank

Faculty Coordinator: Ms. Satnam Kaur
Students: Amit Kumar

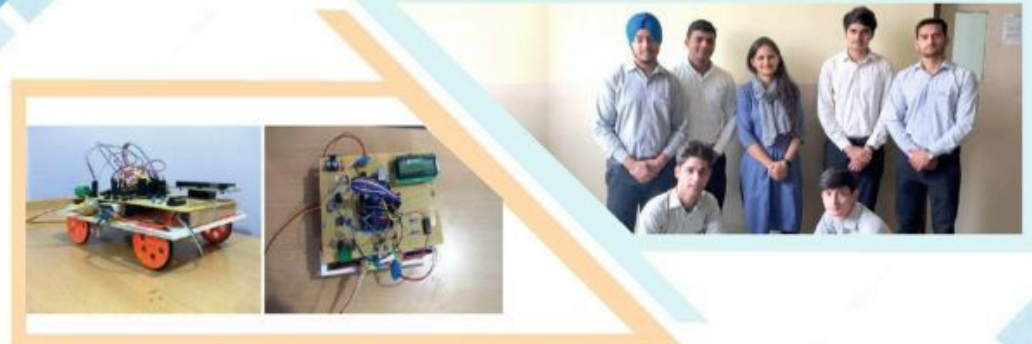


Significance:

The "All in One Power-Bank" is a complete package of power source for small appliance. It is designed to fulfil a very important need of people i.e. power back up for their gadgets and entertainment system. People can charge these gadgets like phone, camera or any other low powered appliance. This power bank contains a very high end power backup of 50,000+ mAh battery.

INTEGRATED DRUNK AND DRIVING PREVENTION SYSTEM

Faculty Coordinator: Ms. Monika
Students: Ashutosh Bhardwaj, Chirag Dhankhar, Mehul Pathak, Amardeep Singh, Avinash Dhiman and Rahul Sharma



Significance:

The main objective of the proposed system is to avoid accident occurrence due to driver's abnormal behaviour. At the time of vehicle start, alcohol sensor (grove's gas sensor) will detect the alcohol consumption of the driver. If the driver's alcohol consumption is above threshold limit, the access for user is denied by locking of ignition. There is also a memory component in the circuit as it stores the weekly data of the driver's drunken driving. It can be refreshed on weekly basis. The sensitivity of the gas sensor can be changed with the help of the potentiometer given on the circuit board. Therefore by the means of the potentiometer we can change the threshold limit (max. limit) of the alcohol contents in the driver's breath.

BASE ISOLATION AND SEISMIC DAMPERS

Faculty Coordinator: Malini Tewari and Anurag Chouksey
Students: Mohit Vats, Jagveer Kumar Shakya, Nitin Sharma and Ushendr Badnere



Significance:

The basic principles for seismic response control are to reduce the effect of seismic excitation and not only seismic response but also are equally useful in controlling undesirable vibrations of structures produced due to wind and other dynamic excitations. In the structures control, the mass or the damping or stiffness or a combination of any two or all are modified by adding some components into the structure.

HARDWARE IMPLEMENTATION OF 1-PHASE - DYNAMIC VOLTAGE RESTORER

Faculty Coordinator : Mr. Rambir Joon, Mr. Shakir Hussain
Students: Piyush Vashuja, Lalit Dude, Sachi Chopandri, Nidhi, Deepak Rajpoot , Rupesh, Anurag Singh



Significance:

The DVR is a power electronic based device that provides controllable voltage source, whose voltage vector (magnitude and angle) adds to the source voltage during sag event, to restore the load voltage to pre-sag conditions. The DVR can restore the load voltage within few milliseconds. The proposed system has less number of switching devices and has good compensating capability in comparison with commonly used compensators. The Static Series Compensator (SSC), commercially known as Dynamic Voltage Restorer (DVR), is best suited to protect sensitive loads against such incoming supply disturbances. The Dynamic Voltage Restorer (DVR) is fast, flexible and efficient solution to voltage sag problem. DVR model compensates the voltage sag and swell with efficient and effective manner.

PIEZOELECTRIC FOOTSTEP POWER GENERATOR

Faculty Coordinator: Mr. Shrivendra Singh
Students : Abhijeet Kumar Vishwakarma & Deepak Kumar



Significance:

Footstep Power Generator the system serves as a medium to generate electricity using non-conventional sources (force) and to store it to use later. In this project we are generating electrical power as non-conventional method by simply walking or running on the foot step. Non-conventional energy system is very essential at this time to our nation.

MODIFICATION OF EXISTING BUILDING INTO GREEN BUILDING

Faculty Coordinator: Kaushal Sharma and Vipin Tiwari
Students: Ishaan Katoch, Ajay Usiyal, Harish, Vishant Yadav and Parveen Kumar



Significance:

In this project we have tried to modify an existing building into green building by adding some features and pavement changes such as solar panel for electricity generation, providing green roof and permeable pavement for rain harvesting.

GAS TOXICITY MONITORING SYSTEM (GATMOS)

Faculty Coordinator: Ms. Satnam Kaur
Students: Shubham, Himanshu, Jishnu and Dinesh



Significance:

This system "GATMOS" (Gas Toxicity Monitoring System) is designed to detect harmful, toxic and flammable gases like Methane, Natural Gas, Alcohol and relay information a handheld device with an individual. The workers can also see the information on a LCD screen at the job site. When the concentration of gas crosses a specific threshold value an alarm rings warning that the toxicity has reached critical levels. This device can also be linked to a mobile app.

INTELLIGENT BURGLAR ALARM SYSTEM

Faculty Coordinator: Mr. Yogesh Kumar
Students: Isha Maurya, Praveen Kumar and Akshit Saxena



Significance:

Cases of stealing are common nowadays. This device helps the owner to receive the information at the time if some intruder enters the room and be stopped. This device consists of various important gadgets namely Arduino Mega, GSM Module Sim 800, passive Infrared Sensor and IR Sensors.

LIGHTWEIGHT, FOLDING BRIDGE (NATURAL DISASTER)

Faculty Coordinator: Kaushal Sharma and Anurag Chouksey
 Students: Taranpreet Singh Parmar, Thoi Thoi L, Abudin Khan



Significance:

Quick rescue action must be undertaken during natural disasters. Based on the previous study of deployable structures and the concept of the multi-folding micro-structures, we have proposed a new type of foldable bridge in form of scissor structure called the Mobile-bridge.

PERFORMANCE EVALUATION SYSTEM

Faculty Coordinator: Mr. Gaurav Singla
 Students: Prabhat Kr Tanwar, Pahur Dahra, Shrishiti Chauhan and Disha Grover



Significance:

It's a web application that helps in assessing performances with the contributions from various stakeholders like Head of Departments, Students and the Faculty. Students and Faculty are registered by the Admin only, while the Admin's login details are "hard coded". The overall score to the faculty is calculated from the feedback provided by the Head of Department, Students and Faculty. It generates a graphical report at the end which is easy to interpret and evaluate. It consists of faculty member's name and ID, along with the bar graph presenting the respective scores.

ANDRIOD APP FOR ONLINE ASSESSMENT SYSTEM (OAS)

Faculty Coordinator: Ms. Kalpana Batra
 Students: Nitin Yadav, Garima Pathak, Yashika Tyagi and Ashwini Kumar



Significance:

Online Assessment System is a medium to track the performance of the students on regular basis and also to improve their logical and analyzing skills. The APP Online Assessment System consists of questions divided into four different categories - Quantitative Aptitude, Logical Reasoning, Basic Technical Questions and Psychometric Questions. Each category will have 50 questions and there will be a time limit for 20 minutes. Result will be shown graphically and it will also highlight the areas of improvement. It will save time, paper and money.

SECURITY SYSTEM USING RFID

Faculty Coordinator: Ms. Reenu Batra
 Students: Gaurav Gahlawat, Anmol Arora, Neeraj Dahiya & Mohit Thakran



Significance:

This project aims to develop a wireless system to detect and allow only the authorized persons. The system is based on Radio Frequency Identification (RFID) technology and consists of a passive RFID tag. The passive micro transponder tag collects power from the 125 KHz magnetic field generated by the base station, gathers information about the Tag ID and sends this information to the base station. The base station receives, decodes and checks the information available in its database and Manchester code was used to send that information.

A SHORT ANIMATION FILM

Faculty Coordinator: Ms Yashika Tuli
Students: Aakash, Akshay, Tarun & Vikas



Significance:

"Life @SGT" is a short animation movie which represents the life of a SGT student. In this animated movie we have used the Whiteboard animation techniques and Photoshop techniques to create story based real life inspired characters which represent all the aspects of how a student from admission till getting the job. The project will show the maximum aspects of students' walkthrough from different phases of University.

SOLAR E-RICKSHAW

Faculty Coordinator: Mr. Naresh Kumar
Students : Shailender, Raveen, Gaurav and Sandeep



Significance:

This project aimed to develop an E-Rickshaw that can be operated by solar energy. It is developed on the concept of Charging While Working concept so overall working hours are increased. The batteries are charged by the solar energy. We used four solar photovoltaic panels to generate solar energy & two solar charge controllers to control the charging & loading current.

SMART GARBAGE MONITORING SYSTEM

Faculty Coordinator: Neeraj Verma
Students: Shubham Pandey, Mudang Tamer and Dinker



Significance:

Most of the garbage bins in our cities are overflowing because of improper cleaning. It creates unhygienic conditions and foul smell. In this garbage bin the level of trash will be monitored and once the trash amount in the bin reaches the top it will send a message to people responsible to clean that particular bin.

STEGANOGRAPHY ON AUDIO WAVE

Faculty Coordinator: Mr. Sumit Kumar
Students: Gaurav, Sandeep & Rupesh



Significance:

Sending small messages in an audio wave is much more secure and safe than sending large messages in an audio wave. The audio wave which is embedded by small messages will not even show a small mark on the graph which was obtained through software. Whereas, if we embed large message in an audio wave a colourful graph is obtained. Enemies in the battlefield could not get a hint of such a communication.

FACULTY OF ENGINEERING & TECHNOLOGY

UNMANNED AND SAFE RAILWAY SYSTEM

Faculty Coordinator: Ms. Neha Gehlot & Mr. Aman Thapak
Students: Kumar Gaurav, Anjali Dharniwal, Ankita Raj, Bharti, Vinita Gulia and Swati Koundilya



Significance:

The basic concept of the project is to prevent train accidents and to minimize the loss due to malfunctioning of the trains. This project focuses on the minimization of the loss caused due to these train calamities. The motivation of this project comes from us viewing our own railway system and noting down the problems that are consistent and continuously affecting human lives.

FACULTY OF ENGINEERING & TECHNOLOGY

WATER SUPPLY MANAGEMENT WITHIN OUR HOUSEHOLDS

Faculty Coordinator: Mrs. Vimmi Malhotra
Students: Sonam, Yogita, Ruhi and Manisha



Significance:

We always have some common issues that include overflowing or drainage of water tanks, impurity of water and also water theft. Our project aims to compile the data that we obtain from various smart water sensors to eradicate or look into these problems. During the implementation of our project we will use the Intel Edison Board along with the entire kit as well as sensors such as, water flow sensors, turbidity sensors and floating sensors which will work with the use of Arduino IDE programmer on our Windows.

FACULTY OF ENGINEERING & TECHNOLOGY

VOICE CONTROLLED WHEEL CHAIR

Faculty Coordinator: Jyoti Ahlawat, Ms Malini
Students: Akshit Saxena, Ishu Maurya and Praveen Kumar



Significance:

Paralyzed and handicapped people need help to drive the wheel chair. This wheel chair is electrical "Voice Controlled Wheel Chair" which can easily be operated on user's voice commands.

FACULTY OF ENGINEERING & TECHNOLOGY

STEP WATER TREATMENT PROCESS WITHOUT USING CHLORINE

Faculty Coordinator : Mr. Shivendra Singh
Students Akhilesh Singh Grewal & Akshay Yadav



Significance:

The goal of this project is to remove unwanted constituents in the water and to make it good enough to drink or utilizable for various purposes in industry or medical applications. Filter purification is a water purification technology that uses a semi permeable membrane to remove ions, molecules, and larger particles from drinking water. The predominant removal mechanism in membrane filtration is straining or size exclusion; so that the process can theoretically achieved perfect efficiency regardless of parameters such as the solution's pressure and concentration.

WIND ENERGY HARVESTING USING PIERO-TRANSDUCER

Faculty Coordinator : Anurag Chouksey and Vipin Tiwari
Students : Nishant Kumar, Ayush Kothari, Sagar Gahlot and Gaurav Kaushik



Significance:

When some force or pressure is applied on embedded piezoelectric crystals the energy is transformed into the electrical energy which can be seen as a clean source of energy. Utilization of piezoelectric wind harvesting is a rather new means to convert renewable wind energy to electricity. Piezoelectric generators are typically low cost and easy to maintain. This work illustrates an overview of piezoelectric wind harvesting technology.

BIDIRECTIONAL VISITOR COUNTER

Faculty Coordinator: Mr.Rambir Joon
Students: Manisha,,Dinki, Prashant, Jastej, Amanjot



Significance:

Many times we need to monitor/count the persons visiting some place like Seminar hall, conference room, Metro stations, Shopping mall and temple etc. This project can be used to count and display the number of visitors entering inside any conference room or seminar hall. This is a bidirectional counter that works in two ways. That means counter will be incremented if person enters the room and will be decremented if a person leaves the room. LCD displays this value which is placed outside the room. Microcontroller is a reliable circuit that takes over the task of counting the number of persons/visitors in the room very accurately. An IR sensor is used to monitor the person entering and exiting the room. The microcontroller receives the signals from the sensors, and this signal is operated under the control of software which is stored in ROM.

IOT BASED AIR POLLUTION AND NOISE POLLUTION MONITORING

Faculty Coordinator: Mr Abhishek Kumar
Students: Sourav Yadav, Anurag Tyag, Sahil, Gauravi

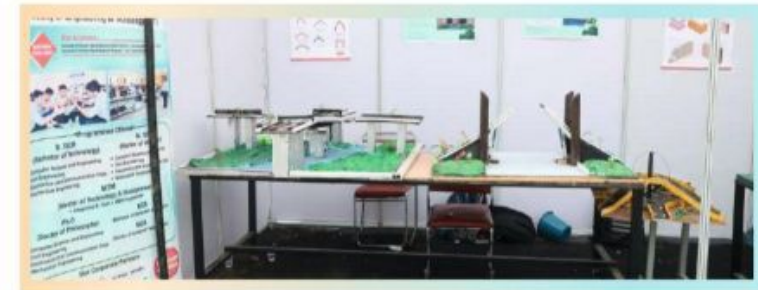


Significance:

System uses air sensors to sense presence of harmful gases/compounds in the air and constantly transmit this data to a microcontroller. Also system keeps measuring sound level and reports it to the online server over IOT. The sensors interact with microcontroller which processes this data and transmits it over internet. This allows authorities to monitor air pollution in different areas and take action. If system detects air quality and noise issues, it alerts authorities so they can take measures to control the situation.

DIFFERENT TYPES OF BRIDGES

Faculty Coordinator: Mr.Anurag Chouksey, Mr.Vipin Tiwari and Ms.Malini Tewari
Students: Manthan, Gurdeep, Thoi Thoi, Abudlin, Piyush, and Vikas



Significance:

In this project students prepared bridges based on different principles. One is based on hydraulic principle and the other is based on rotating bridge principle. These bridges are useful for travelling in one mode of transport to another. These bridges can reduce the cost of construction and can provide the path by rotation or movement.

HOME ASSISTANT

Faculty Coordinator: Ms Vimmi Malhotra
Students: Ashish Barik, Praanshu Grover, Nishant Khandelwal



Significance:

Home Assistant is a unique, smart, and intelligent virtual assistant. It's an assistant that manages you, your home and works smartly and efficiently. A user has to simply speak the commands and Home Assistant will perform the task. If we talk about features this magnificent piece of technology will help you in keeping up with your schedules, reminding you of your tasks, connects with your home devices.

PNEUMATIC STAIRS

Faculty Coordinator: Mr. Dinesh Deshwal
Students: Sourave, Abhishek Rana, Sudhir Thakran, Vikash and Tarun



Significance:

A pneumatic stairs is a type of stairs fitted with the pneumatic cylinders, solenoid, and battery and sliding stairs so that it can be pushed or pulled with the help of air compressor. Pneumatic stairs can be battery powered and are commonly found in fire brigade system, residential applications, and rescue systems. Pneumatic stairs system can be fitted with fabricated aluminium ladder, sliding channel and as the name implies, it is designed to aid the moving of persons up or down. In a pneumatic system, energy is stored in a potential state under the condition of compressed air. The air distribution system is sized to carry the required air flow with minimum friction losses through parts of pipe and various fittings.

MULTIPURPOSE MECHANICAL MACHINE

Faculty Coordinator: Mr. Dinesh Deshwal
Students: Hemant Yadav, Arsh Arya, Saransh Ghanghas, Deepak Sharma, Harsh Yadav and Gaurav Rana



Significance:

This machine is made for small-scale industries where labourers have very little technical knowledge. It performs multiple operations simultaneously, giving the workers more opportunity to perform their work quickly and efficiently without the hassle of using different machines for performing different operations on work place. There are three process; drilling, grinding and cutting. We can use all three processes simultaneously.

SMART CAR PARKING

Faculty Coordinator: Mr. Rambir Joon
Students: Jasjeet, Vakul, Zoe P Alexander



Significance:

Our proposed system presents an Autonomous car parking that regulates the number of cars that can be parked in a given space at any given time based on the parking space availability. When a car arrives at the entrance, it will be stopped at the main gate and the driver de-boards the car. If the availability of Parking space is confirmed, the user commands the car to get parked to the designated slot. It waits for parking of car at the proper slot to be communicated to the Car Control Unit. On receiving the information, the car will further trace its path to free parking spot. On successful parking, the data on the LCD will be updated automatically.

SPINNING TWIRL TROLLEY

Faculty Coordinator: Mr. Dinesh Deshwal
Students: Chirag Jain, Mayank Rajwanshi, Pushpender Yadav and Shubham Sharma



Significance:

A spinning twirl trolley is a type of trolley fitted with rotating wheels or tracks so that it can be pushed or pulled up or down steps or a stairway. Spinning twirl trolleys can be manual or battery-powered. Tracked versions offer the greatest S.W.L (safe working limit) with regards to the load being moved and offer greater speed and ease of operation. Spinning twirl trolley wheels can be fitted with hand trucks (sack trucks) and as the name implies, it is designed to aid the moving of goods up or down the stairs. This type of spinning twirl trolley relies on a wheel configuration known as Tri-star, three wheels set into a triangle configuration replacing the standard wheel on either side. As a feature this enables the movement of objects that must be kept upright during transportation like air conditioning units where refrigerant fluid can escape or damage the unit if it is not sealed.

SINE BAR

Faculty Coordinator : Dr. Manoj Kumar
Students : Paramvir Singh, Sachin Kumar, Ranjan Kumar, Umar Hussain



Significance:

A sine bar consists of a hardened, precision ground body with two precision ground cylinders fixed at the ends. The distance between the centers of the cylinders is precisely controlled, and the top of the bar is parallel to a line through the centers of the two rollers. Angles are measured using a sine bar with the help of gage blocks and a dial gauge or a spirit level. The aim of a measurement is to measure the surface on which the dial gauge or spirit level is placed horizontally.

WATER RECYCLING SYSTEM

Faculty Coordinator :Mr.Anurag Chouksey
Students: Ankit Malhan, Bobby Yadav



Significance:

Recycling of water is one of the most important tasks for the society. This project shows the way we can reuse the household water. As water used in the kitchen can be filtered and can be used for gardening. This project shows the model for the same.

COGNITIVE BANKING WORKING MODEL USING MOBILE APP AND ARTIFICIAL INTELLIGENCE SERVICES

Faculty Coordinator: Dr Amal K Saha
Students: Disksharth, Navroop, Khushi, Yogita, Sahil and others



Significance:

An Android mobile application integrated with Google Cloud Platform (GCP) based Artificial Intelligence services, namely, speech recognition and text analytics, and email notifications, has been used as a working model of cognitive banking experience. The entire system has been designed and installed from scratch and it is a live system with which the visitor would interact. The poster explains the design of cognitive banking system being demonstrated and future direction of the system in banking ecosystem around the world including India. The vision 2030 of India has AI as a driving force.

CIRCUIT DESIGN AND OPERATION OF COMMUNICATION SYSTEM USING LASER AND OPTICAL FIBRE

Faculty Coordinator: Dr. Ram Chhavi Sharma
Students: Neha, Poonam, Tannu Shree, Nitesh, Neeraj Gulia



Significance:

This model operates a communication system which uses light from a Laser as carrier wave and free space & Optical fibre as guiding media. It highlights the importance of Laser in communication using propagation of light in free space & through Optical fibre & its relative merits over other communication systems. Ability to see through the dense foliage and space communication from distances measured in millions of miles can be a boon. This option is better than radio as light wavelengths are packed much more tightly, and they transmit more information per second with a stronger signal.

MEASUREMENT OF THERMAL EXPANSION COEFFICIENT BY THROUGH DIFFRACTION OF LASER LIGHT

Faculty Coordinator : Dr Mukesh Kumar
Students: Anjali, Deepak, Kriti



Significance:

The coefficient of thermal expansion (CTE) is a material property that is indicative of the extent to which a material expands upon heating. Different substances expand over small temperature ranges, the thermal expansion of uniform linear objects is proportional to temperature change. There are various techniques used for CTE measurement (dilatometry, Interferometry, thermomechanical analysis etc). In this project CTE has been measured by diffraction of laser light through single slit. The material of which coefficient of thermal expansion (CTE) is to be measured is used as single slit and it is heated and laser light is used for diffraction through this single slit. The diffraction pattern would allow us to measure the CTE at a given temperature. The temperature of the slit would be measured using thermocouple.

DETERMINING THE LOCATION AN EARTHQUAKE USING DATA FROM SEISMIC STATIONS

Faculty Coordinator: Dr Sanjeev Chauhan
Students: Deepak Verma, Kunal, Deepak Kumar

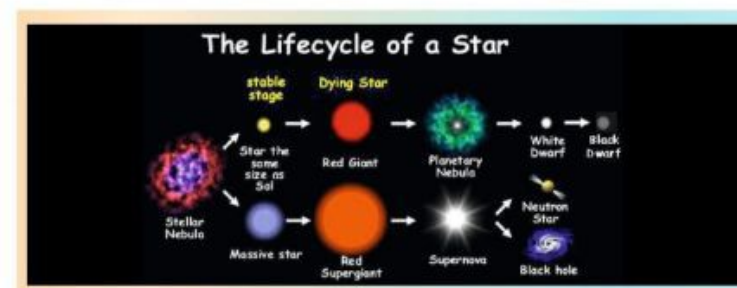


Significance:

The shock waves spreading out from an earthquake consist of P waves and S waves. These waves from the earthquake are recorded using seismometers. Since P waves travel faster than S waves, the difference in travel time between the first P wave and the first S wave can be used to measure the distance of the epicentre of the earthquake from the seismic station. Using data from multiple seismic stations, the location of earthquake can be identified.

LIFECYCLE OF STAR

Faculty Coordinator: Dr Pooja Rana
Students: Anjali, Kirti, Archana, Sonia, Deepika



Significance:

The lifecycle stages of a star have been explained through models. Two major focus areas are:

1. Model showing various stages of a star
This part will show the journey from its birth to death. It includes collection of cloud and dust to form nubalae, change in mass and size of a star to form red faint, white dwarf, supernova and black hole.
2. Working model of black hole
A simple working model which will demonstrate the existence of gravitational forces within black hole.

BRAVAIS LATTICE MODEL

Faculty Coordinator: Dr Sonali Bhandari

Students: Neha, Usha, Priya, Bhavna, Laxit, Naman, Pankaj, Pawan, Naveen

**Significance:**

When the discrete points are atoms, ions, or polymer strings of solid matter, the Bravais lattice concept is used to formally define a crystalline arrangement and its (finite) frontiers. A crystal is made up of a periodic arrangement of one or more atoms (the basis) repeated at each lattice point. In three-dimensional space, there are 14 Bravais lattices. These are obtained by combining one of the seven lattice systems with one of the centering types. The centering types identify the locations of the lattice points in the unit cell as follows: Primitive (P): lattice points on the cell corners only (sometimes called simple) Base-centered (A, B, or C): lattice points on the cell corners with one additional point at the center of each face of one pair of parallel faces of the cell (sometimes called end-centered) Body-centered (I): lattice points on the cell corners with one additional point at the center of the cell Face-centered (F): lattice points on the cell corners with one additional point at the center of each of the faces of the cell.

WORKING MODEL OF WATER PURIFIER

Faculty Coordinator: Mr. Anjaneyulu Bendi

Students: Deeksha, Meera, Nisha Yadav, Nitu Yadav

**Significance:**

Water purifiers work on the principle known as Reverse Osmosis (RO). Water is made to pass through a selective membrane so that smaller impurities pass through the membrane and the pure water remains on the other side of the membrane. Accordingly, it is often the appropriate technique to treat solutions having salt concentrations from 100 to over 50,000 mg/litre.

COLOURS IN TRANSITION METAL COMPLEXES

Faculty Coordinator: Dr Sonali Bhandari

Students: Keertika, Mahima, Shivam, Sangeeta, Taruna, Beenu, Ruchi

**Significance:**

Crystal Field Theory (CFT) is a model that describes the breaking of degeneracies of electron orbital states, usually d or f orbitals, due to a static electric field produced by a surrounding charge distribution (anion neighbours). This theory has been used to describe various spectroscopies of transition metal coordination complexes, in particular optical spectra (colors). CFT successfully accounts for some magnetic properties, colours, hydration enthalpies, and spinel structures of transition metal complexes. The full array of colours obtained with transition metal complexes has been shown. Corresponding wavelengths of the samples measured with a spectrophotometer have been displayed. A synchronous array of colours obtained in nature has been displayed. CFT explains the important properties of transition metal complexes- variable oxidation state, colour, magnetism, crystal field stabilization energy etc.

3D MODELS OF FULLERENES

Faculty Coordinator: Mr. Anjaneyulu Bendi

Students: Deeksha, Meera, Nisha Yadav, Nitu Yadav

**Significance:**

Fullerene is a pure carbon form having at least 60 atoms. It exists in hollow sphere, ellipsoid or tube form. Fullerenes having spherical forms are called Bucky-balls, and cylindrical forms are referred to as carbon nanotubes or Bucky tubes. They are very similar in structure to graphite.

BAND-GAP CALCULATIONS IN VINYLENE-LINKED HETEROCYCLIC CONDUCTING POLYMERS

Faculty Coordinator: Dr Kamlesh Sharma
Students: Neetu Meena, Pinak, Dipti



Significance:

The band gap of vinylene-linked seven member organic heterocyclic conducting polymers 1 to 4, are calculated by implementing Density Functional Theory with B3LYP/6-31G** method. The effect of chemical modification by introducing heteroatom on the electronic structure of polymers is displayed. The fact that introducing a heteroatom increases conjugation, chemical stability and affects the band gap of the aromatic ring is also displayed. It is concluded that vinylene-linked, azepine based polymer 2 has the lowest band-gap among all the investigated systems and hence has a better conducting properties. Our results highlight the use of computational calculations for designing materials with enhanced photovoltaic applications.

LIVE STATION MOCK TAILS

Faculty Coordinator: Mr B L Punjabi
Students: Daniel Andrews, Shravan Raina, Soni Dagar, Abhijot Singh, Sanju



Significance:

FHTM setup the live counter of Mocktail in the Synergy 2017 that displayed various mocktail preparation techniques to the viewers. Mocktails can be described as a smooth blend of only non-alcoholic beverages, which could be fresh fruit juices, syrups, cream, herbs and spices. Mocktails are designed specifically for those who do not take alcoholic beverages or need to refrain from them, which means these blends can be enjoyed by people of all ages. They are particularly favoured over cocktails by drivers, pregnant women and others in parties.

COMMUNITY TV

Faculty Coordinator: Dr Mukesh Kumar & Others
Students: UG & PG Students



Significance:

Being a visual medium, Community television could play a vital role in stimulating development, dialogue, supporting local economies, be a vehicle for decentralized government, E-governance and share local content in local language and local culture -a local voice. It can empower people to articulate their own truths, to seek and develop independent perspectives, and to involve their communities in solving the issues that matter to them most. It teaches them to apply this medium to explore positive values and attitudes through creative expression. In spite of these advantages we don't have single Community TV in India. Even outside India, no model is available for Community TV. Therefore, SGT University is the first institution, which proposes a workable model for the same. We have designed the model in such a way so that the initial investment is almost as low as it is in Community Radio. We are using technology which is very cheap and handy, but it doesn't mean that we have to compromise with the quality. It will have all the facilities any TV channel needs.

TECHNIQUES OF FLOWER DECORATION

Faculty Coordinator: Ms Ambika C Nair, Mr Vivek Kumar
Students: Raj Samjetsbam, Bhanu Pratap Singh, Pawan Shah, Devender Yadav, Simran Kaur, Aeshna Mishra



Significance:

Flower arrangement is a design of beauty. It is essentially a decorative piece and should be the centre of attraction. An arrangement can be composed of only flowers and or foliage or in combination with vegetables and fruits. Flower arrangements have an ability to introduce a personal touch in an otherwise staid and impersonal hotel room. Arrangements can be used in lobbies, restaurants, suites etc. Guests appreciate flowers for the freshness they bring to the surroundings. Students of hospitality studies learn about various types of arrangements as a part of their curriculum. Their oeuvre d'arts was displayed in the stall for the visitors to appreciate.

LIVE STATION CREPE SUZETTE FLAMBE

Faculty Coordinator: Chef Kaushal Gaur, Mr Vivek
Students: Jatin Juneja, Ajay Sharma, Laskay Sharma, Ravi Kharb, Nikunj, Vikas, Arvind, Jitender



Significance:

Crêpes Suzette is a French dessert consisting of a crêpe with beurre Suzette a sauce of caramelized sugar and butter, tangerine or orange juice, zest, and Grand Marnier or orange Curaçao liqueur on top, prepared in a tableside performance, flambé. FHTM students prepared live dish of this French Delicacies and helped viewers to learn the techniques.

CANAPE PREPARATION

Faculty Coordinator: Chef Jaslien
Students: Sachin Yadav, Deven Singh, Jatin



Significance:

Canapé is often desired to be either salty or spicy, in order to encourage guests to drink more. A canapé may also be referred to as finger food, although not all finger foods are canapés. Crackers or small slices of bread or toast or puff pastry, cut into various shapes, serve as the base for savoury butters or pastes, often topped with a "canopy" of savoury foods as meat, cheese, fish, caviar, foiegras and purées.

CHOCOLATE MAKING TECHNIQUES

Faculty Coordinator: Mr Vivek Kumar, Mr Jaspreet
Students: Jaspreet, Mayank Shreshtha, Sahil Sangwan



Significance:

FHTM showcases the live chocolate making technique. Chocolate is one of the most popular food types and flavours in the world and a vast number of foodstuffs involving chocolate have been created, particularly desserts including cakes, pudding, mousse, chocolate brownies, and chocolate chip cookies. Many candies are filled with or coated with sweetened chocolate, and bars of solid chocolate and candy bars coated in chocolate are eaten as snacks. Gifts of chocolate moulded into different shapes (e.g., eggs, hearts and coins) have become traditional on certain western holidays such as Easter, Valentine's Day and Hanukkah.

PYRAMID CAKE

Faculty Coordinator: Chef Jasvinder Singh, Mr Harsh
Students: Babloo, Gopal, Vipin, Rahul, Utkarsh, Pankaj, Nitesh, Vikas, Jai Kumar, Raman, Mohit, Anil, Bhanu, Sahil, Shamim, Dharmender



Significance:

FHTM put forth 4 feet pyramid cake. It is a form of a dessert that is typically baked.

FCM SHOWCASING

Faculty Coordinator: Mr Amit D, Ms Nisha, Dr Sunaina, Dr Yamini, Dr Varsha, Ms Neha, Dr Heena
 Students: Ashish, Seema, Anuradha, Nancy, Abhishek, Deepank, Ashish, Rohit, Vikas, Nitish, Kamal, Shweta, Hemlata, Sneha, Bikram, Abhishek, Sachin, Vaishali, Samiksha



Significance:

FCM'S representative unit offers an opportunity to reflect all the features, working, courses, USP's and its core strength which makes it distinguish from all other Departments. It also generates awareness about the future career opportunities & prospects. It supports the department in the way to get the feedback for further improvements thus making the department richer in academic industry. It helps to develop team spirit, group working, collaborative learning and other managerial qualities among students.

PERSONALITY TEST: MBTI (MYERS-BRIGGS TYPE INDICATOR)

Faculty Coordinator: Dr Sunil Kumar, Mr. Chand Prakash, Dr.Neha
 Students: Sahil, C Lalrohluva, Sunandan, Sweta, Kanchan, Shubham, Harshita, Rishika



Significance:

Personality Test: MBTI (Myers-Briggs Type Indicator) is an important tool to identify and guide the personality of an individual in the direction of betterment of individual both in personal as well as professional life. 16 combinations of personality using eight (E, I, S, N, T, F, J, P) letters will be demonstrated to the audience wherein audience will be asked to fill a standard questionnaire and analysis will be done on the same basis. Combination cards as outcome will be distributed to the respondents for future reference. The project will be useful for visitors to identify their personality traits and the key traits which are contributors to the success of their personal and professional life. MBTI also suggests key changes that an individual needs to bring in their personalities in order to increase the capacity of problem solving and better decision making.

BUSINESS PLAN: A WAY TO SMART VILLAGE

Faculty Coordinator: Dr Sunil , Mr. Chand Prakash, Dr.Neha
 Students: Kailash, Saif Ahmad, Simran, Rishabh, Shubham, Sagar, Himani, Padam, Gaurav, Nisha, Nicky, Saurabh, Rananjay, Gajanand



Significance: A team of students presents a business plan for a way to smart village. Students show two stage of village (i.e. before and after) implementation of the business plan, wherein the first stage shows the poor financial conditions of the villagers and after implementation of business plan how village achieved financial independence. Six businesses which are interconnected are Animal Husbandry, Renewable energy (Bio gas, ethanol), Vermi-Compost, Flour mill (small size), Rice mill (small size) & Sweets production (purity being the essence). Agenda of the project is to interconnect all the business activity and meet the internal demand of the village as well as to generate employment and revenue for the village. The project showcased through project prototype and explained through PPT's. The project can be explained through three major pillars which are: Organic Farming, Employment generation, and Financial Independence and keeping the geographical profile of the university in mind the project will be motivator for the visitors to understand a business plan which will help them for organic farming with various other connected business activities helping in generating the employment within the village which ultimately leads to financial independence.

BUSINESS LAB - WORKING TOGETHER FOR BETTER BUSINESS & STRONGER SOCIETY

Faculty Coordinator: Dr Yogesh, Dr Yamini, Ms Nisha
 Students: Harshit, Payal, Deepika, Rahul, Mayank, Deepika, Shipra, Kanchan, Chirag, Khushboo, Ketan, Ritu, Sonam, Dheera, Poonam, Pratap, Snigdha, Khushi, Saumya, Rohit, Deepak, Sushma, Jitendra, Paras, Rajendra, Salim, Sonam, Ajay, Nitin, Komal, Nikki, Chetna, Soni



Significance:

Business Lab is the Commerce and Management Department's supporting unit which offers an idea of collaborative learning which suit to different group of students. It consists of various poster based models, prototype models related to major functional areas of a business, simulators, tools, and software, etc. It will support the department in the following way: Pose a variety of open-ended questions that help students develop critical thinking & Manage student interactions by grouping students for discussion, teamwork, and peer-to-peer learning. Decision making simulations by putting students in the role of manager as they make a series of decisions based on a realistic business challenges.

Different Papers & Materials - Development Paper Dresses

Faculty Coordinator: Ms. Swati Yadav
Students: Kirti, Sonika, Astitav, Bhavik, Anusha, Sapna, Sachin, Ratna, Pakhi, Madhu, Parmila, Shreya, Varsha, Aakash, Palak, Praveen, Suraj, Sushmita, Deepali, Sanjana



Significance:
Dress design development from different kinds of papers like newspaper, cardboard, handmade sheet etc. display to highlight the innovations in Fashion Industry in today's world.

Non-Stitch Garments - Draping

Faculty Coordinator: Ms. Anuradha
Students: Ritu, Praveen, Shreya, Aakash, Sushmita



Significance:
Non-stitch garments is a technique in which stitching is not required but these will be functional garments.

Recycled Products - Best Out of Waste

Faculty Coordinator: Ms. Swati Yadav
Students: Kirti, Sonika, Astitav, Bhavik, Anusha, Sapna, Sachin, Ratna, Pakhi, Madhu, Parmila, Shreya, Varsha, Aakash, Palak, Praveen, Suraj, Sushmita, Deepali, Sanjana



Significance:
The objective of this project Innovative learning with the use of waste material and is to developed.

Competition - Skilled & Fun Games

Faculty Coordinator: Mr. Vineet
Students: Sachin & Ritu



Significance:
Skilled games like sketching, painting and many more fun games organises students and visitors so as the skills of art and transforming them to fashion in all forms of society can be highlighted.

FACULTY OF LAW

MOOT COURT & MOCK TRIAL

Faculty Coordinator: Prof. Rajeev Khanna, Prof. V.R Dinkar, Prof. J.M Gandhi, Dr. Akhtar, Mr. Nishit, Mr. Amit, Ms Teena, Ms Komal, Ms Appoorva, Mr. Shekhar, Ms Anchal, Ms Rishu
Students : Apsara, Babita, Harsh Kumar SinghSumrita, Sheereen, Akansha



Significance:

In Legal education, Moot Courts and Mock Trials are essential to develop the mootings skill and trial skills of the law students. Both of them are mirror images of the regular court room proceedings of the appellate and trial courts in the settlement of various civil, criminal and constitutional issues. The fictional problems for the mootings and mock trials will be framed by the law professors in advance. The written memorials and the oral presentations of the parties shall be evaluated by the judges who comprise of Judges of the Supreme Court, High Courts, Senior Lawyers who are specialized Professors of faculty of Law. The project is very useful in SYNERGY to make the audience understand about the judicial process in specific and the legal system in general.

FACULTY OF LAW

CLIENT COUNSELLING

Faculty Coordinator: Prof. Rajeev Khanna, Prof. V.R Dinkar, Prof. J.M Gandhi, Dr. Akhtar, Mr. Nishit, Mr. Amit, Ms Teena, Ms Komal, Ms Appoorva, Mr. Shekhar, Ms Anchal, Ms Rishu
Students : Apsara, Babita, Harsh Kumar SinghSumrita, Sheereen, Akansha



Significance:

Client counselling is vital in a law school for developing the skills of the law students. It is part and parcel of clinical legal education. The clinical legal aid projects will be conducted with the help of District Legal Services Authority.

FACULTY OF LAW

GENERAL AWARENESS QUIZ

Faculty Coordinator: Prof. Rajeev Khanna, Prof. V.R Dinkar, Prof. J.M Gandhi, Dr. Akhtar, Mr. Nishit, Mr. Amit, Ms Teena, Ms Komal, Ms Appoorva, Mr. Shekhar, Ms Anchal, Ms Rishu
Students : Apsara, Babita, Harsh Kumar SinghSumrita, Sheereen, Akansha



Significance:

There is a maxim in law "Ignorantiajuris non excusat" which means ignorance of law excuses no one. The overall meaning is that a person who has violated the law cannot come forward with the defence saying that when he has committed any offence he was not aware about the law. The law will always presume that the person who has committed the wrong has awareness about the law at the time of commission. Therefore, all persons are presumed to know the law. The Constitution quiz is useful to create more awareness in the audience especially the students at least about their constitutional rights, duties, democratic setup, constitutional positions etc.

FACULTY OF EDUCATION

CONTRIBUTION OF INDIAN WOMEN IN SCIENCE AND TECHNOLOGY

Faculty Coordinator: Dr.Snehlata Verma
Students: Ibadarilnye, Priya, Basanti, Yamini, Shivani, Manisha



Significance:

Beti Bachao Beti Padhao (BBBP) scheme was started on January 22, 2015 as a joint initiative of the Ministry of Women and Child Development, Ministry of Health and Family Welfare and Ministry of Human Resource Development under coordinated and convergent efforts to empower the girl child. Beti Bachao Beti Padhao is a social campaign of the Government of India that aims to generate awareness and improve the efficiency of welfare services intended for girls. The scheme intends to improve the efficiency of services for the welfare of women and to raise awareness regarding women's rights. According to the Hon'ble Prime Minister Sh. Narendra Modi, "Our mantra should be: son and daughter are equal." In the backdrop of the above, Faculty of Education, SGT University has made a humble attempt to display the advantages of Beti Bachao Beti Padhao through the sculpture of a Woman with a Girl Child and converging the concept with the contribution of Indian Women in Science and Technology through the construction of TECH PARK OF WOMEN.

CENTRE FOR LANGUAGE COMMUNICATION

Faculty Coordinator: Dr Sarju, Dr Umesh, Dr Usha, Dr Abhilasha, Ms Sonia, Ms Arvinder, Mr Arvind, Ms Amita
Students: Ishant, Amit



Significance:

Centre for Languages and Communication (CLC) aims to develop the skills of our students to express their views and ideas confidently. The main focus is on Listening, Speaking, Reading and Writing skills in English and other foreign languages. CLC team engages classes for UG, PG and Diploma students in more than 14 Faculties in SGT University. English Language, German Language, Professional Communication, Communication and Personality Development, Aptitude and Career Building and Soft Skills are handled by CLC team. CLC team believes that effective communication is the key to building healthy and strong professional relationships.

FACULTY OF AGRICULTURAL SCIENCES

ECO FRIENDLY EARTHEN REFRIGERATOR

Faculty Coordinator: Dr. S.S. Sharma
Students: Sunita, Neelesh, Tarun



Significance:

It is a low cost earthen refrigerator. It not only cools the water for drinking but also cools the stored vegetables and fruits. The cooling is done through the evaporation of water from earthen pitcher. No electrical power will be required to run this refrigerator and thus it is a cheaper and eco-friendly option for refrigeration.

FACULTY OF AGRICULTURAL SCIENCES

USE OF WASTE POLYETHYLENE BOTTLES FOR MICRO IRRIGATION IN POTTED PLANTS

Faculty Coordinator: Dr. S.S. Sharma
Students: Rohan Yadav, Veenu Singh



Significance:

The polyethylene bottles filled with water supply the need based controlled irrigation water to the potted plants, saving the maintenance and water cost. The waste management is an added advantage. Waste plastic bottles are reutilized which helps in mitigating plastic pollution.

FACULTY OF AGRICULTURAL SCIENCES

SOLAR CELL OPERATED SGT Knap SACK SPRAYER

Faculty Coordinator: Dr. S.S. Sharma
Students: Ankur, Shivan



Significance:

There are Manually Operated, Power Operated, Battery Operated and Solar Cell Operated Knap Sack sprayers available in the market but they are cumbersome to use in the harsh weather conditions during hot season. Fuel consumption is also high and the efficiency is very low. To overcome these problems an improved model of the same is proposed which provides body cover against the scorching sun shine as it is fitted with an umbrella and solar cells. The initial cost will be slightly higher but its operational cost is much lower than the existing versions and ultimately it will be energy efficient and easy to use.

DIVERSITY IN THE INSECT WORLD

Faculty Coordinator: Dr. S.S. Sharma
Students: Anjali, Monika, Khushi



Significance:

It is a general notion that insects are only harmful and they should be killed and eliminated. To quell this notion, an Insectarium model has been established to harbour different species of insects in a protected closed environment. Live harmful as well as useful insect species will be displayed in this unit. Among the insect world there are lots of insect species, such as Honeybees, Bumblebees, Wasps, Lac insects, Silk Worm, Parasitoids, Predators, Aesthetic and Food insects which are human- friendly and useful to us. The project creates awareness among students by enhancing their knowledge of the useful & harmful insects to farmers, general public and college & school students.

THE VERMI-GARDEN TOWER

Faculty Coordinator: Dr. Vinita Rajput
Students: Naveen Sinha, Rhea Ditto, Hitesh Yadav, Himadari, Rohan, Ajay, Naveen



Significance:

The project will demonstrate the advance form of container garden combined with the benefits of vermi-compost feature. In today's' world when the population is increasing and the available land per capita is decreasing, it becomes necessary to utilize the resources and land effectively. Therefore, this model has been designed which can be transferred from one place to another and can be placed in comparatively less space. The earthworms will enhance nutritive quality of growing media. This system can be used for growing multiple greens at once in the same structure. Waste plastic tanks or containers will be used for growing vegetables. The available space will be utilized effectively.

PLANT TISSUE CULTURE: PROPAGATION, CONSERVATION AND CROP IMPROVEMENT

Faculty Coordinator: Dr. Vijya Laxmi
Students: Ankit Kumar, Ankit Atri, Anshu Siwach, Rohan Kumar Singh



Significance:

Plant tissue culture or micropropagation technology has made invaluable contribution to agriculture by enabling the production of disease free, quality planting material of commercial plants and fruit trees, throughout the year. It is a technique for in-vitro growth of plantlets from any part of the plant in a suitable nutrient medium under controlled aseptic conditions. The main advantage of tissue culture technology lies in the production of high quality and uniform planting material that can be multiplied on a year-round basis under disease-free conditions anywhere irrespective of the season and weather.

AQUAPONICS CHANGES THE GAME

Faculty Coordinator: Dr. Ashok Kumar Dehinwal
Students: Robin Singh, Tarun, Anshu, Madhukar, Priya, Rhea, Neelesh, Ajay, Naveen



Significance:

It is the combination of aquaculture (raising fish) and hydroponics (the soil-less growing of plants) together in one integrated system. The fish waste provides an organic food source for the plants, and the plants naturally filter the water for the fish. The third participant is the microbes (nitrifying bacteria). These bacteria convert ammonia from the fish waste first into nitrites, and then into nitrates. Nitrates are the form of nitrogen that plants can uptake and use to grow. Solid fish waste is turned into vermin-compost that also acts as nutrition for the plants. In combining both hydroponic and aquaculture systems, Aquaponics capitalizes on their benefits, and eliminates the drawbacks of each.

MAIZE COB GRAIN SHELLER MACHINE

Faculty Coordinator: Dr. N.K. Tiwari
Students: Puneet Sharma, Piyush Saini, Jayant, Sourabh



Significance:

As we know manually removing mature grains from the cob is a very difficult task for the farmers, Machine are available in the market but they are very expensive. Keeping this point in mind, a maize grain removal machine that is easy to operate and affordable has been designed and presented in Synergy 2017.

FACE MASK FOR CHRONIC OBSTRUCTIVE PATIENTS

Faculty Coordinator: Dr Sonia
Students: Shivangi, Asha, Sujata, Subhangi, Monika



Significance:

This mask has one fourth aperture of the mouth. It provides resistance at the mouth during exhalation which transmits back pressure that splints the airways open and prevents compression and closure of dilated alveoli. This helps in reducing dyspnea by reversing dynamic hyperinflation through increased intra-luminal pressure in the airways resulting in a shift of the equal pressure point from distal to proximal and will prevent dynamic collapse. This mask works similar to pursed lip breathing which is prescribed in Chronic Obstructive patients to relieve dyspnea and work on regular. It will be beneficial in case of exacerbation of Chronic Obstructive patients to whom it is very difficult to teach the pursed lip breathing technique or who are unable to follow the command.

HYDROPONICS: SOIL AND MEDIUM LESS CULTIVATION

Faculty Coordinator: Dr. Mohinder Singh
Students: Ankit Kumar, Madhu Sangwan, Aman Jain, Kenrik Ete



Significance:

Hydroponics is a method of growing plants in water based nutrient rich solution. Hydroponics does not use soil. Instead the root system is supported using an inert medium such as perlite, rockwool, clay pellets, peat moss, or vermiculite. The basic premise behind hydroponics is to allow the plants roots to come in direct contact with the nutrient solution, while also having access to oxygen, which is essential for proper growth. Careful control of nutrient solution flow and pH level in the system is required. Hydroponic gardening is also known as NFT (nutrient film technique). A hydroponic system will use much less water than soil based plants because the system is enclosed, which results in less evapo-transpiration. This technique is environment friendly too because it reduces waste production, toxicity and pollution resulting from traditional methods.

GAIT TRAINING WALK WAY FOR PARKINSONISM

Faculty Coordinator: Dr Bharti, Dr Priyanka
Students: Mona, Pankaj, Juhi, Shweta, Damanpreet



Significance:

Proposed study is to prepare a 6 m walkway where patient walks with audiovisual/ sensory cues. The major goals are to lengthen stride, broaden BOS, improve stepping, improve heel-toe gait pattern, increase speed and provide a program of regular walking. Place a mark on the mat used for the walkway based on the average step length of the patient. Whenever foot touches the mark on the mat, the patient gets Signal either in terms of audiovisual or sensory cue that he has to withdraw the foot and place it on the next mark on the mat or next step length. The clinical implications of this project are Time management, Motor re-education & Sensory re-education.

MULTI EXERCISE UNIT

Faculty Coordinator: Dr Sheetal, Dr Sajjan, Dr Joginder
Students: Pooja Sharma, Akash, Basudeo, Pohap, Hemant, Ajay, Ankit

**Significance:**

It is a complete exercising unit which has different attachments for administration of accurately controlled forms of different exercises-progressive resisted exercises, stretching exercises and restoration of motion of all the major joints of body. It consists of a seat, backrest (movable) with springs and can be used to exercise trunk muscles. The tubes and springs are attached to the chair which offers wide range of resistance and is used for upper body and lower body strengthening. This unit is useful for patients with musculo-skeletal problems (reduced mobility, body strength, power, stamina); patients with neurological problems and for general maintenance of strength, stamina, fitness at home.

'Garbhini Paricharya' (Antenatal Care according to Ayurveda)

Faculty Coordinator: Dr. Himani Goswami, Dr. Supriya Gupta, Dr. Neeraj Gupta
Students: Manish Kumar, Monika, Ayushi Bhardwaj, Chanchal Soni, ShwetaKaushik, Shweta Prajapati, Urvashi, Pallavi, Shreyanshi, Chanchal, Jyoti Devi, Priya, Mukul, Satyawan

**Significance:**

This project is about the dietic regimen including special food and few herbs that are meant to be taken month wise (Mansanumask Pathya) by pregnant women to protect their health. If the mother is healthy, her foetus will also be healthy. The aim of our project is to promote, protect and maintain the health of the mother during pregnancy and have a healthy mother and a healthy baby at the end of pregnancy.

BALANCE TRAINER WITH SENSORY RE-EDUCATION UNIT

Faculty Coordinator: Dr Sajjan Pal, Dr Sheetal Kalra, Dr Joginder Yadav
Students : Pooja Shrivastav, Khumanshi, Kiran, Prerna, Neha, Nidhi

**Significance:**

It is a re-education unit which will be used to train balance in patients with sensory deficits such as is present in different neurological conditions. It consists of a Harness system, Trampoline and sensory re-education unit with adjustable side support for maintaining safety of patients. Patients with cerebral palsy, geriatric population with impaired balance, sensory re-education program and patients with various other balance disorders including neuromuscular disease can use this unit.

Yoga: To Keep Mind and Body Healthy

Faculty Coordinator: Dr.Premraj Chaudhary, Dr.Milind Deshmukh
Students: Ajay Goel, Ajeet, Sonali, Shweta Prajapati, Manoj Yadav, Krishna Murari

**Significance:**

Yoga is not only a way to fitness, it is our lifestyle and it works beautifully when integrated in our daily life. It is a combination of physical and mental disciplines. Yoga makes body stronger and healthier and mind calmer and controlled. Pranayam has capacity of freeing the mind from anxiety, stress, anger, disappointment and other mental problems. Yoga asanas help to improve muscle strength and flexibility which reduce risk of injury. Regular practice of yoga (asanas, pranayam and meditation) improves physical, mental and emotional conditions. Yoga keeps joints flexible and increases muscle strength around joints.

Swarn Bindu Prashan

Faculty Coordinator: Dr. Vidya Hiremath, Dr. Arvind Kumar
Students: Kamal Singh, Manisha Yadav, Sonu Raghav, Vishal



Significance:

Swarna Prashana is an ancient technique to modulate the immunity and improve quality of life. It is mentioned under Jatakarma Samskara (neonatal care), one of the 16 essential Samskara described in Ayurveda. As a cultural practice, swarnaprasan is very popular in India. In this samskara, swarna Bhasma with herbs like Vacha Churna (Acoruscalamus), Brahmi (Bacopa Monnieri) etc is mixed with honey and ghee to be administered in the oral form to the baby (from birth to 16 years) for enhancing immunity and intellectual development. In Ayurveda, Swarna Prashan is quoted to be effective in increasing memory power, intelligence, strength and potency to longevity.

MIRROR THERAPY – REJUVENATE AND REGENERATE THE IMPOSSIBLE

Faculty in Charge: Dr. Nithin Krishnan R, Dr. Sangeeta Gupta
Students: Vidhi, Suvarna, Paras, Piyush, Shrey



Significance:

Mirror Therapy (MT) has a strong neural basis to be utilized in the motor rehabilitation of stroke. This simple and economical technique is non-invasive technique to stimulate the brain. Through MT, numerous brain areas are harnessed to induce favourable neuroplasticity and associated motor recovery. The regime activates not only the areas corresponding to the moving hand but also the ipsilateral (to the moving hand) brain by means of the mirror-illusion of movement. Brain stimulation is possible among both the healthy individuals and post stroke hemiparetic subjects. MT reorganizes the damaged brain and balances the activity of both the hemispheres.

Swasthya Rakshan through Ayurveda

Faculty Coordinator: Dr. B. Kothainayagi, Dr. Anupam Sharma
Students: Shivangi, Amit, Usman, Nancy, Veena, Kanishka, Monika, Yashasvi, Reema, Meenakshi, Parul, Kamal, Bhawna, Manjeet, Madhu, Bharat, Abhinav, Dharmendar, Mohit, Jaisharma



Significance:

Ayurvedic Medicine is a medical speciality that focuses primarily on Preventive and Curative Medicine. Ayurveda emphasizes more on being healthy through Dinacharya (Daily Regimens), Ritucharya (Seasonal Regimens) and individual's Prakriti (Temperament). Following Ayurvedic principles is not difficult. When it comes to health, there should be no wait and watch period. For a more balanced, harmonious, healthy and satisfying living the Ayurvedic regimen is a great solution.

FOETAL CIRCULATION - (PRENATAL)

Faculty Coordinator: Mrs. Akoljam Mamata Devi, Ms. Prempati Mayanglambam, Ms. Anu Grover
Students: Munesh, Rashmi, Vinita, Nitika, Rashmi, Sapna, Shilpa, Ajeesh, Pooja, Geeta, Manisha, Komal, Mamta, Anjali, Ritika, Karuna



Significance:

The foetal circulation is the circulatory system of a fetus. The term usually encompasses the entire fetoplacental circulation, which includes the umbilical cord and the blood vessels within the placenta that carry foetal blood. Temporary structures during foetal circulation are the umbilical vein, the ductus venosus (from vein to vein), the foramen ovale (oval opening), Ductus arteriosus (from an artery to an artery) and the hypogastric arteries. At birth, major changes take place. The umbilical cord is clamped and the baby no longer receives oxygen and nutrients from the mother. With the first breath of air, the lungs begin to expand, and the ductus arteriosus and the foramen ovale both close. The baby's circulation and blood flow through the heart now function like an adult's.

FERTILIZATION & IMPLANTATION

Faculty Coordinator: Mrs. Akoijam Mamata Devi, Ms. Prempati Mayanglambam, Ms. Anu Grover
 Students: Munesh, Rashmi, Vinita, Nitika, Sapna, Shilpa, Ajeenesh,
 Pooja, Geeta, Manisha, Komal, Mamta, Anjali, Ritu, Karuna



Significance:

Fertilization is the fusion of the nucleus of the oocyte with that of sperm. The zygote continues its passage through the fallopian tube and undergoes divisions into two cells, then four cells, eight cells, and sixteen and so on, until a mulberry like ball of cells is known as morula. Morula reaches uterine cavity 4 days after fertilization. On 4th and 5th day, morula freely floats on endometrial surface, takes in the fluid through canaliculi in zonapellucida. Zonapellucida degenerates and morula expands with accumulation of fluid in it, and is called blastocyst. It is developing off spring till 8th weeks of implantation.

INCUBATOR WITH PHOTOTHERAPY

Faculty Coordinator: Ms. Rashmi & Ms Shweta Handa
 Students: Tarun, Amit, Nitu, Amandeep, Ritu, Annu, Badal, Nitin, Aakash, Himanshu,
 Ujjwal, Tanya, Priya, Pinki, Sakshi, Poonam, Jyoti, Monika, Godwin



Significance:

This device, Incubator with Phototherapy, maintains thermoregulation and reduces the level of bilirubin in neonatal jaundice together in a single unit. This model has several specifications along with general systems. It has a temperature control system, humidity control system, infant phototherapy unit, Height adjustment alarm system and other configuration system. This system serves as a healing force which will give healthier life to the newborns.

FETAL DEVELOPMENT

Faculty Coordinator: Mrs. Akoijam Mamata Devi, Ms. Prempati Mayanglambam, Ms. Anu Grover
 Students: Munesh, Rashmi, Vinita, Nitika, Sapna, Shilpa, Ajeenesh,
 Pooja, Geeta, Manisha, Komal, Mamta, Anjali, Ritu, Karuna



Significance:

Prenatal development is the process in which an embryo and later fetus develops during gestation. Prenatal development starts with fertilization the first stage in embryogenesis which continues in fetal development until birth. By the end of the tenth week of gestational age, the embryo acquires its basic form and is referred to as a fetus. The next period is that of fetal development where many organs become fully developed. This fetal period is described both topically by organ and chronologically by time with major occurrences being listed by gestational age.

MODIFIED PEDIATRIC NEBULIZER

Faculty Coordinator: Ritu Yadav
 Students: Mohit, Alka, Ujjwal, Rekha, Priya, Kajal, Nakul, Jyoti, Parvesh, Reema, Hement, Ekta, Lokesh



Significance:

It is a modified nebulizer machine for children. Here we have modified the simple nebulizer into a toy shape i.e. rabbit form which is child friendly and attractive. These child friendly nebulizers can be in the form of any toy of children. The purpose of this model is to reduce the fear that child has for hospital equipments, to make it more attractive and appealing. Hence it will help the paediatric patients with respiratory problems to improve faster.

EMBRACE INFANT WARMER

Faculty Coordinator: Prof. Chinna Devi & Ms. Sarika Yadav
 Students: Ritu, Annu, Jatin, Badal, Nitin, Aakash, Himanshu, Ujjwal, Tanya, Priya Pinki, Sakshi, Poonam, Jyoti, Monika, Godwin

**Significance:**

20 million premature and low-birth-weight babies are born every year; 4 million of these babies die, and many of those that do survive grow up with life-long health problems. Many of these deaths and illnesses are caused by hypothermia and can be prevented with an incubator. Embrace Nest is an easy-to-use, portable infant warmer that does not need continuous power and to be used anywhere. The insulated wrap and heat-releasing phase change material pack keeps infants warm for 4-6 hours at a time. Babies are still able to be held and fed within the warmer, unlike with regular incubators. The material is easily washable. The clear plastic window allows doctors to monitor skin color (an indicator of problems) and the way it wraps the baby allows for IV's and monitoring wires.

FORMULATION AND HOMEMADE USES OF SOY PRODUCTS

Faculty Coordinator: Dr. Akanksha Yadav
 Students: Sneha, Priyanka, Nidhi, Hemavati, Preeti, Princy, Shruti, Bhawna, Anjali, Lalita

**Significance:**

Soybeans possess a very high nutritional value. Soy protein comes from soybeans and offers multiple health benefits. Nutritionally, soy protein is the most balanced plant protein for human consumption. It is high in protein, is low in fat and carbohydrate and contains no cholesterol. It is an excellent food for children, elderly people and pregnant and lactating women since it contains vegetable protein, which is very nutritious and easy to digest. Besides possessing high nutritional values, Soya milk is best for people suffering from diabetes and lactose-intolerance. The objective of the project is to explore the awareness of consumer for soy products especially of soy milk, okra, Soy custard and crackers and to educate them about the health benefits, nutritional aspects, functional uses and preparation of soy based products.

HAEMODIALYSIS

Faculty Coordinator: Prof. (Mrs.) Soma Kumari, Ms. Varsha, Ms Kavita, Ms Archana, Ms Bharti
 Students: Priyanka, Pinky, Sudesh, Kavita, Bharti, Manish, Shivani, Mansi, Mohit, Manshi, Nukul, Shiksha, Ramesh, Ankit

**Significance:**

There is an epidemiological transition taking place in India, with the decline in communicable diseases and a growing burden of chronic non-communicable diseases. It has been noted that 53% of deaths in India in 2005 were due to chronic diseases. The numbers of End Stage Renal Disease (ESRD) patients that need Renal Replacement Therapy (RRT) are increasing rapidly in the world. This RRT consists of either renal transplantation or some form of dialysis (peritoneal dialysis or hemo-dialysis). As renal transplantation may not be a feasible alternative for everyone suffering with ESRD, hemo-dialysis is the treatment of choice in such clients. In hemo-dialysis blood is withdrawn from the body through an arterial end and passed through dialyser. After purification, it is returned to the body through venous end. As a result, body is left with reduced uraemic burden.

A MASS BALANCE EDUCATIONAL APPROACH TOWARDS IRON DEFICIENCY ANAEMIA

Faculty Coordinator: Ms. Anu Agrawal
 Students: Priya, Zishan, Nishi, Bharti, Gunjan, Monika, Bhumika, Ragini, Babita, Shneya

**Significance:**

Iron deficiency (ID) is the most common micronutrient deficiency worldwide with >20% of women experiencing it during their reproductive lives. The major cause of iron deficiency Anaemia is poor dietary practices. As per research, Iron deficiency can be treated with iron fortifications, proper combinations of Iron sources which help to maximize Iron absorption. This practical approach resolves misconceptions about iron sources and makes people aware about Iron sources & Iron fortification.

STAY HEALTHY WITH THE POWER OF PROTECTIVE FOOD RAINBOW

Faculty Coordinator: Dr.G.B.Bhatt

Students: Nikita, Pooja, Priyanka, Manasvi, Shreya, Sahil, Mona, Parinita, Gunjan, Nupur



Significance:

The protective food rainbow project is designed to disseminate scientific information on nutritional content and health benefits of colourful produce of nature. Fruits and vegetables are well known for nutritional richness and healing power that plays a remarkable role in human health. A well balanced healthy diet that includes variety of these colourful produce of nature provide a broad spectrum of essential vitamins, minerals, antioxidants & various other phytonutrients which are known for their protective role against various non-communicable diseases. Different colours of these edibles are indicators of different nutritional and therapeutic properties. The above said project is developed to disseminate information on healing power and nutritional richness of these miracles of nature and to promote their regular consumption for wellbeing and optimal health of the society.

WORKING MODEL OF COMPUTED TOMOGRAPHY

Faculty Coordinator: Mr. Nitish Virmani

Students : Mohit Dahiya, Navreet Boora, Jyoti



Significance:

We have tried to explain & bring awareness to the society about the advantages & disadvantages of CT Scan & radiation . We have also advised them not to go for any radiological scan or test on their own, first consult their doctor & then get appropriate test done. The aim of this working model is to demonstrate the working, functioning & usage of CT Scan.

WORLD OF MICROBIOLOGY

Faculty Coordinator: Dr.Manisha Sharma, Ms.Upasana Sharma

Students: Gimmi, Jasina, Saadat, Alisha, Madhuri, Mehandi, Anjali



Significance:

This presentation covers positive and negative aspect of microorganisms. Positive part includes microorganism's application in food, pharmaceutical, industrial, textile and agricultural applications. Negative part includes microbial infection due to poor hygiene of mouth, hands, gadgets etc. Results of same can be displayed in petri-plates to show various comparative research analyses done by students beforehand. Microscopic slides will also be displayed under microscope for better understanding. A cartoon video of microorganisms, lab equipments, microorganisms will be flashed on screen. Virus model, charts related to microbial world made by students will be displayed. A quiz was conducted by students. The scope of microbiology was highlighted covering industry, medical, research, food, agricultural, pharmaceutical and corporate sector.

WORKING MODEL OF MAGNETIC RESONANCE IMAGING (MRI)

Faculty Coordinator: Ms. Nitika, Mr. Rajdeep

Students : Deepak Chouhan, Prajina Khanal, Sonia



Significance:

MRI Scanner is used to generate radiograph of inner body structures without any ionizing radiation. We explain the drawbacks of MRI that is the MRI is not fit for the patients which has the metallic implants & also we made them aware that there is no need to fear from MRI Scan, especially for claustrophobic patients & also explain them MRI gives complete & good details of their past medical history for better & safe MRI. The aim of this working model is to demonstrate the working, functioning & usage of MRI Scan.

WORKING MODEL ULTRASONOGRAPHY (USG)

Faculty Coordinator: Mr. Nitish Virmani
Students : Jyoti & Mohit Dahiya



Significance:

We have made a working model of USG to demonstrate the working, functioning and usage. USG scan during pregnancy in all three trimesters helps to monitor growth of fetus & it has no known harmful effects during pregnancy. USG is also a first preference for breast imaging. USG is most widely used radiological modality which is a necessary awareness. The aim of this working model is to demonstrate the working, functioning & usage of USG.

GENDER IDENTIFICATION WITH HUMAN SKELETON

Faculty Coordinator: Dr. Leena Bhardwaj
Students: Vipin Yadav, Nidhika, Md. Irshad, Divya, Saranya



Significance:

Anthropology plays a significant role in characteristic age and gender of skeleton or parts of it can be differentiated with its counterparts by assessing its size and shape: especially with cranium and pelvis. In female pelvis bone shows wider, more circular opening than that of male pelvis because of its child bearing capacity. The female sacrum is wider and shorter than that of male sacrum. In male cranium are larger in overall size than female cranium with more pronounced brow bone (supra orbital ridge) and mastoid bone behind the jaw. The growth stage of decedent can be identified with growth curve.

RADIO-IMAGING INNOVATION & AWARENESS

Faculty Coordinator: Mr. Nitish Virmani, Ms. Nitika
Students: Prajina, Ritu, Deepak, Sonia, Rajat, Aditi



Significance:

A day full of knowledge, empowerment, awareness and technical concepts was presented on prostate and breast cancer is a burning topic these days. Out of 8 there is one woman who is diagnosed with breast cancer. The important aspects about breast & prostate cancer i.e. awareness, treatment, health package, symptoms & signs was discussed. Not only breast cancer but prostate cancer & T.B., A.C.L., P.C.L., Rickets etc. are other causes of concern. The objective is to make people aware about modalities of Radiology Department like Computed Tomography, Magnetic Resonance Imaging, Ultrasonography, DEXA, Mammography etc.

SUSTAINABLE/GREEN BUILDING DESIGN

Faculty Coordinator: Dr. Manbir Singh
Students: Dipansh, Tushar



Significance:

The project model depicts the essential components of an energy efficient, self-waste managing and eco-friendly basic house design. The model shows how a simple house can be designed or incorporated with changes that can affect the energy use significantly and can deal with its solid waste by waste minimization methods. Use of directions in house construction and modification can also be thought of. The house model also depicts the basic rainwater harvesting system which can be of use in water scarce regions.

RAINWATER HARVESTING

Faculty Coordinator: Dr. Vikram Mor
Students: Pulkit, Sumit

**Significance:**

Rainwater harvesting means collection of rainwater and to store it in different containers applying proper means to keep the water fit for any use. This model depicts the roof-top rain water harvesting. It is effective technique for homes and buildings. The rain water from the top of the roof is diverted to any surface tank or pit through a delivery system which can be later used for several purposes. Also, it can be used to recharge underground aquifers. This model of rain water harvesting is low-cost with little maintenance expenses.

UNWINDING MYSTERY BEHIND THE THOUGHT: FANTASY TO FACT

Faculty Coordinator: Dr Archana Chaudhary, Dr Leena, Ms. Rashmi
Students: Vipin Yadav, Naveen, Dimpi

**Significance:**

The objective of this project is to decipher the methods to rejuvenate lifestyle by opting certain techniques. Rhythmic pronunciation drastically unwinds the mysteries behind the fantasies and tune up human life into reality. It helps to mimic the vitality of potential created by the frequency of phonetics present in surrounding. The resonance established by these phonetics will create imminent effect on thought process, either in positive or negative way; depends on an individual's perception.

NUTRIENT REMOVAL FROM DOMESTIC RUNOFF USING CONSTRUCTED WETLAND SYSTEM

Faculty Coordinator: Dr. Simranjeet Singh, Ms.Mamta
Students: Nikhil, Harish

**Significance:**

This model is about attaining wastewater treatment goals by using natural components and their processes that significantly reduces the use of energy intensive mechanical devices and technical complexity. The model shows natural systems as Constructed Wetlands (CWs) that consists of a properly designed basin containing waste water, a substrate (gravel and soil), and most common, vascular plants. It involves biological, chemical and physical mechanism for nutrient and pollutant removal. This helps in prevention of low eutrophication problem of open water bodies. It is an eco- friendly, easy to operate, less energy-intensive and cost-effective waste water treatment technology.

CRIME SCENE INVESTIGATION AND MANAGEMENT

Faculty Coordinator: Dr. Ruchika
Students Naveen, Priyanka, Sonal Wadhwa, Ishant, Vaishali

**Significance:**

Locard's Exchange Principle says, "Every criminal and victim transfer evidences even in minute form." Physical, Chemical and Biological evidences present at the scene of crime are generally blood, seminal fluid, hair, bullets, saliva, bones, fingerprints, nail, fibres, weapons, drugs etc. All of these play a vital role in crime detection. These evidences are minutely located on victim, objects and on bare soil surfaces. These evidences also relate chain of events, criminal to victim and the modus operandii. Therefore identification, collection and analysis of all these evidences in any crime scene are of utmost importance in Criminal Justice Delivery System.

LATENT FINGERPRINT DEVELOPMENT BY HOMEMADE FINGERPRINT POWDER

Faculty Coordinator: Dr.Ruchika
Students: Priyanka, Anupam , Amit Kumar, Prashant, Hritik

**Significance:**

A fingerprint is an impression left by the friction ridges of human fingers. Fingerprints are of three types- Patent prints, Latent and Plastic prints. Patent prints are visible prints, Latent prints are Invisible prints and Plastic prints are 3-Dimensional impressions made by pressing your fingers on wax, soap or tar etc. Fingerprints describe their uniqueness and no two fingers are found to have identical ridge pattern and form the same pattern throughout the life. To see the latent prints, development is required. With the help of developing powder, these prints can be made visible. The powder particles adhere to the humid, sticky and greasy substances in latent print residue. Mostly fresh fingerprints are developed by this method. These methods vary depending on the substrate on which they are.

PROBLEM SOLVING ABILITY- TOWER OF HANOI

Faculty Coordinator: Prof. Rajbir Singh
Students: Shubham, Baroj, Onam, Minam, Crishtie, Riya, Aditi, Sunali

**Significance:**

We all engage in solving day to day problems, works setting problems, academic and scientific problems, as well as life problems. It is the highest form of cognitive capacity where we understand a problem, set the strategies, compare them and make choice to execute. We may not always be able to solve at first attempt and then make another choice and so on. Many do it only mentally while others do it manually. Some may strive till it is solved while some may leave in between. We also learn while attempting and use experience. 'Tower of Hanoi' is a performance test to assess the problem solving ability. It is a simple and quick assessment procedure. Try it, to

SMART IRRIGATION CONTROL DESIGN

Faculty Coordinator: Ms.Rashmi
Students: Dimpi, Jatin, Sonam, Rohit

**Significance:**

The aim of this project is to develop an irrigation system by continuously monitoring the soil moisture level in the field. The main components used in this project are microcontroller, LCD, switch pad, motor, and moisture measuring strips, accelerometer sensor and GSM modem. The user can enter the desired moisture level through switch pad. Whenever the moisture value reaches the limit entered by the user then the controller automatically sends a message "PUMP OFF" to the authorized person by using GSM module. After the person receives a message, he can have an option to switch OFF the water pump according to requirement by just sending a message with his mobile phone. An accelerometer sensor is used to protect the system from theft. If the system detects movement, it sends the alert message through the GSM modem.

ACTIVITY: SPAN OF ATTENTION

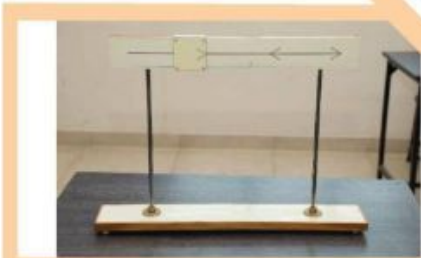
Faculty Coordinator: Dr. Lokesh Gupta
Students: Kajal, Anantika, Srishti, Saloni, Pooja, Richa, Akansha, Suffa, Ekta, Raksha

**Significance:**

All of us are always bombarded with information from external and internal environment including social media, but our nervous span system cannot process all the information at one time. Attention selects information to our system and we perceive (or are aware of) that information only. Span of attention is that capacity which determines how many bits of information our system can handle in a short period. Tachistoscope is an instrument which presents visual information for 100 milliseconds. Usually the span varies 7 ± 2 i.e. from 5 to 9 units. It is good to have an extensive span. Lower span indicates some pathology. Quick assessment of the same can be done in a few minutes.

ACTIVITY: ILLUSION

Faculty Coordinator: Dr. Nudrat Jahan
Students: Sumi, Anshul, Aayushi, Vishakha, Sarthak, Kalpana

**Significance:**

Perception is not always correct, despite different sensory information it may be perceived differently. Geometrical illusions are universal i.e. we all are likely to misperceive, however the extent shall vary. Some stimulus characteristics and person's styles determine our extent of illusion or error in perception. Muller-Lyer illusion is the perception of length of a straight line to judge the relative length of two lines enclosed by arrow heads and feather heads i.e. the context where lines are perceived. Field independent persons make less error whereas field dependent person will make more errors. One can quickly assess one's accuracy of visual perception.

ACTIVITY: COGNITIVE INTERFERENCE- COLOR STROOP TEST

Faculty Coordinator: Miss. Syma
Students: Rakhi, Akansha, Tage, Kartika, Meenakshi

**Significance:**

Stroop test is named after John Ridley Stroop who is credited for its discovery in 1930s. It is based on Stroop effect which is the degree of difficulty people have with naming the colour of the ink rather than the word itself. It is based on well established principle and measure the ability of attending to certain environment stimuli while ignoring other. Stroop test is a widely used test of executive functioning which assesses an individual's cognitive processing speed and level of cognitive control. It is a quick screening assessment tool that can be simply administered in basic testing set up.

ACTIVITY: TIME PERSPECTIVE

Faculty Coordinator: Mrs. Srishti B. Lall
Students: Sumreena, Parvneet, Divya, Kiran, Prachi, Preeti, Kamal

**Significance:**

We all exist in time and space. Perception of time is necessity and our cognition travels to from remote past through present past future. However, the tense influencing our thoughts vary from individual to individual. Some are past oriented (many be positive or negative) while many keep engaged with their future (planning dreaming etc.) where as some keep themselves in the present. Any way there has to be a balanced time perspective for well being. Line and circle test of cattle is "One Minutes Some Projective" technique to know one's time perspective.

Activity: Pass Along Test

Faculty Coordinator: Dr. Shivani
Students: Devanshi, Jigyasa, Anjali, Divyanshu, Isha, Prachi

**Significance:**

Intelligence is our capacity to think rationally, act purposefully and to adjust appropriately in the environment. It helps us to educe relations among varied features of the environment. Intelligence can be assessed by a variety of tests including performance test. Pass-along test can be used to have objective measurement of one's intelligence. The scores can be converted into percentile that is one's standing in a group of hundred or can be converted to popular measure, Intelligence Quotient (IQ). This test is used in variety of Batteries of intelligence, including Bhatia Battery of Intelligence.

ACTIVITY: INTELLIGENCE - PICTURE CONSTRUCTION TEST

Faculty Coordinator: Mr. Ved Prakash
 Students: Honey, Umang, Simran, Prachi, Shweta, Indu, Priya, Nikhil



Significance:

It is a performance measure which taps intelligence. Some meaningful pictures comprising many human, animal and physical features of the contexts. Six pictures cut into 2,4,6,8,10,12, pieces are presented to complete one by one for 2 to 3 minutes. Time to complete is recorded. It is a simple test which taps speed of information processing. Time taken is converted into raw scores and finally to popular Percentile or IQ. The test is interesting and quite simple.

ACTIVITY: NUKKAD NATAK- 'DEKHI ANDEKHI'

Faculty Coordinator: Mrs. Srishti B. Lall
 Students: Kriti, Devanshi, Chitra, Kavita, Jefflin, Mehak, Dheeraj, Kanan, Laxmi, Pulkit, Sandeep, Rounak, Radha, Shubham, Ankita



Significance:

Students of FBS performed 'Nukkad Natak' on Theme 'Drug Addiction' for creating awareness among youth. The activity took approximately 10-15 minutes.

ACTIVITY: PSYCHOLOGICAL CONSULTATION

Faculty Coordinator: Dr. Mustafa Nadeem Kirmani
 Students: Devika, Prerna, Vandana, Khushboo, Mahima



Significance:

Consultants shall be available for discussing mental health issues and providing help. The consultant shall also take up matters related to Vocational Guidance for visiting students. They shall also appraise all the facilities offered at Department of Clinical Psychology at SGT Hospital. They will also handle the queries of visitors taking various tests in different stalls for further improvement and training etc. Publicity material for awareness in regard to psychological problems shall be handed over to the visitors.

JOURNEY OF A DRUG

Faculty Coordinator: Ms. Aarti Rajput
 Students: Akash Deep Gawar, Jayant Khemani, Harshit Arora, Hritik Kaushik, Susheel Kumar, Vinay Yadav, Tanish Sharma



Significance:

This project is about the development of a drug from its core origin, its tests and approvals, to its availability in the market. An innovative representation of this process is the aim of the project. This simply provides an interesting as well as an informative glance to the audience about the life of a drug. The value of natural products in this regard can be assessed using 3 criteria: the rate of introduction of new chemical entities of wide structural diversity, the number of diseases treated or prevented by these substances and their frequency of use in the treatment of disease.

GASTRO RETENTIVE DRUG DELIVERY SYSTEM: A TARGET SPECIFIC DRUG DELIVERY SYSTEM

Faculty Coordinator: Mr. Manish Yadav, Ms. Kavita Attri
Students: Sumit Sharma, Manish Kumar, Komal, Palak, Hemant Singh

**Significance:**

Oral controlled release and site specific drug delivery system interest people in the pharmaceutical field to achieve improved therapeutic advantage. Gastro retentive drug delivery system is one of such novel approaches to prolong gastric residence time, thereby targeting site specific drug release in the stomach for local or systemic effects.

TO STUDY THE IN-VITRO DISSOLUTION OF DRUGS AT DIFFERENT PH RESEMBLING TO BIOLOGICAL SYSTEMS

Faculty Coordinator: Dr. Neelam Vashist, Mr Vinod Gahlot, Mr. Nitin Mittal
Students: Vinay Shokeen, Sandesh Verma, Mohit Yadav, Deeksha

**Significance:**

To produce a pharmacological effect in human body a drug should be dissolved in respective biological fluids at physiological pH. Different drugs dissolve at different pH depending upon their acidic or basic nature. In-vitro drugs were investigated for their dissolution under different pH conditions. The pH varied from 1.5 to 8.5. The drugs used in this study included Furosemide, Paracetamol, Aspirin, Diazepam, Levodopa, Theophylline, Ketoconazole & Nitroglycerine. It was concluded that acidic drugs like Aspirin absorbed better in acidic medium in stomach and basic drugs absorbed better in alkaline media in intestine.

DEVELOPMENT OF HERBAL LARVICIDAL FLOATING TABLETS

Faculty Coordinator: Dr Manisha Vats
Students: Nikita, Shivdhar Dwivedi, Ashanand, Arun Yadav, Keshav Goyal and Ashutosh Shivam

**Significance:**

Mosquitoes act as a vector for most of the life threatening diseases like malaria, yellow fever, dengue fever, chikungunya fever, filariasis, encephalitis, West Nile Virus infection etc. To prevent proliferation of mosquito borne diseases and to improve quality of environment and public health, mosquito control is essential. The present project explains development of herbal larvicidal floating tablets which will include extraction from the herbal plants and then development of floating tablets using the crude extracts so that larvae of the various species can be targeted so that they do not develop into the adult mosquitoes.

ROTATING MODEL OF DNA

Faculty Coordinator: Sushma Maratha, Sonia Yadav
Students: Jatin, Hunny

**Significance:**

Double helix model of DNA (Deoxyribonucleic acid) was discovered by Watson and Crick in 1953 by announcing that "We had found the secret of life". DNA had specific pairing between the nitrogen bases i.e. Adenine - Thymine, Cytosine - Guanine. DNA is wrapped tightly around histones and coiled tightly to form chromosomes. An attempt was made to elaborate the phenomena, mechanism, extraction and role of DNA in human beings.

FORMULATION AND DEVELOPMENT OF HERBAL MOSQUITO REPELLENT

Faculty Coordinator: Dr.Vandana Chaudhary
Students: Amardeep Kharb, Hemant Dhanda, Mandeep Yadav, Manisha, Khushali



Significance:

There is a need for development of effective herbal mosquito repellent. In this investigation an attempt has been made to prepare herbal based mosquito repellent formulations at in-house level. The liquid formulations were formulated as "All Out" and "Good Night" liquids and evaluated for texture, efficacy, and stability etc. Mosquito repellent liquid with Neem oil, clove oil and dill oil and camphor as a carrier were formulated and evaluated.

PRP (PLATELET RICH PLASMA) FOR HAIR REGROWTH & Q SWITCHED ND YAG LASER FOR TATOO REMOVAL

Faculty Coordinator: Dr. Shikhar Ganjoo
Students: Shrishty Chaudhary, Sumeet Bora



Significance:

PRP (Platelet rich plasma) is used for hair regrowth in scalp hair loss disorders like Androgenetic Alopecia. It stimulates hair growth by providing platelet rich factors required for hair growth Q switched and YAG Laser can be used for Tatoo removal. Use of Q switched laser decreases the pigment level in the tatoos by light amplification of stimulated emission of radiation.

PATIENT REMINDER SMS ALERT SYSTEM

Faculty Coordinator: Mr. Dheeraj Kumar Sharma
Students: Amit Pawar, Sachin Vashist, Nitin Sharma, Sagar



Significance:

In our country, a large number of patient population doesn't comply with treatment recommendations. An important reason being forgetfulness/confusion about the schedule/dosage regimen. To overcome this hurdle, proper and timely communication can play a significant role. Hence, we have designed a SMS alert system for patients by which after getting registered in hospital will start receiving SMS containing registration number, name and time of administration of prescribed medicines with vehicle (if required) and special remark (wherever required).

ENDOSCOPY IN ENT

Faculty Coordinator: Dr. Jasdeep Monga
Students: Abhishek, Renu



Significance:

Advent of endoscopes has revolutionized the medical field including the otorhinolaryngology(ENT) procedures. Particularly the short angulated rigid endoscopes can give bright, close view of the tympanic membrane and can even pass through a perforated ear drum to determine the integrity of the small bones and visualization of the hidden areas of middle ear. Along with sharing this information, the department will take an opportunity to provide awareness about different ear diseases and their prevention.

EVALUATION AND PREVENTION OF CATARACT, GLAUCOMA AND COMPUTER VISION SYNDROME

Faculty Coordinator: Dr. Harshraj Nehra
Students: Reeta, Reema Bana



Significance:

In the ever progressive and developing world the eye diseases are progressively increasing namely cataract, glaucoma and computer vision syndrome. For this we will educate elderly and adult population about healthy lifestyle habits and their prevention. These problems are dealt by Ophthalmologists with a basic setup of charts, torches, ophthalmoscopes and schiotztonometers.

SPIROMETRIC EVALUATION FOR OBSTRUCTIVE DISEASES & HARMFUL EFFECTS OF SMOKING

Faculty Coordinator: Dr. Kapil Sharma
Students: Dr. Sheena Taneja, Preeti Mor, Yamini Miglani, Sheetal Dagar, Smriti Raheja



Significance:

With increased incidence of environmental pollution and rise of smoking habits, it is necessary for screening of population for the obstructive lung diseases. The tool utilized is spirometry, performed by clinician on OPD basis, for assessing the respiratory capacities of people and in differentiating restrictive diseases from obstructive diseases. Also, we aid in proper counselling of the youth and the elderly for the avoidance of tobacco consumption and smoking habits, which further enhances the fatal consequences of respiratory diseases.

DIARRHOEA IN CHILDREN

Faculty Coordinator: Dr. Shashi Sharma
Students: Girish, Nidhi



Significance:

Diarrhoea is the condition of having at least three loose or liquid bowel movements each day. It often lasts for a few days and can result in dehydration due to fluid loss. Signs of dehydration often begin with loss of the normal stretchiness of the skin and irritable behaviour.

OSTEOPOROSIS

Faculty Coordinator: Dr. Mushtaq
Students: Pooja, Nisha



Significance:

Department of Orthopedics present various informative posters on osteoporosis which is of great interest to students, teachers and general public. As a whole, Osteoporosis is a disease characterized by low bone mass and deterioration of bone tissue, which can lead to increased risk of fracture. Known as the "silent thief", bone deterioration can occur over a number of years without any symptoms. Unfortunately, by the time affected bones break or fracture, the disease is already fairly advanced and less treatable. The most common fractures associated with osteoporosis are in the hip, spine, wrist, and shoulder.

EMERGING INFECTIOUS DISEASES

Faculty Coordinator: Dr Mukesh, Ms L Sumitra Devi
Students: Priyanka



Significance:

We live in an era of rapidly changing global landscapes and local environments. Various factors like changes in human demographics, behaviour and vulnerability along with many other factors led to the emergence of new infectious diseases. Deforestation which brings humans in close contact with new infectious agents, insects and animals; rapid urbanisation; advances in speed and volume of travel and many pathogenic factors like drug resistance and mutations in RNA viruses led to the emergence of many new and re-emergence of old infectious diseases. The department of Microbiology present posters on some of these diseases like HIV/AIDS, Chikungunya, Zika, Swine Flu, Dengue, Rabies, Scrub Typhus and Leptospirosis. These posters have information on common clinical features, spread and prevention and control of these diseases which will be useful for the general public.

BENEFITS OF YOGA IN LIFESTYLE DISEASES

Faculty Coordinator: Dr Anil, Dr Nilmenpreet, Dr Ritu
Students: Kiran, Myukhraj



Significance:

Department of Physiology presents various posters showing benefits of yoga in lifestyle diseases. Stress in day to day life is the causative factor of lifestyle diseases in addition to the poor eating habits, sedentary lifestyle and sleep deprivation. To overcome it, yoga practicing in our daily life is a holistic approach towards health. Awareness programmes are conducted worldwide to adopt Yoga as a daily routine for a healthy life. The goal of Yoga is to bring self-transcendence or enlightenment through observation of controlled breathing (pranayama), postures (asanas) and meditation (dhyana). Yoga is beneficial in patients of metabolic disorders and it helps in keeping the body fit, increases the oxygenation, reduces the anxiety and improves the quality of life.

PHARMACOLOGICAL PRINCIPLES

Faculty Coordinator: Dr Kapil Hazarika
Students: Tishya, Parthvi



Significance:

Department of Pharmacology will be presenting various informative posters which will be of great interest to students, teachers and general public as a whole. The topics of the posters were chosen keeping in mind the fact that few areas of pharmacology are not well known or not properly understood by general public for example the various routes of administration of medicines, although very commonly are seen and being used by everyone will definitely arouse interest in young as well as old. Similarly, we have presented posters on Pharmacovigilance and drug interactions which although very important, are less known by non-medicos. So main endeavour behind presenting these posters is to create awareness among the viewers.

PROMOTING HEALTH & PREVENTING DISEASE

Faculty Coordinator: Dr Shalini Ray
Students: Dr Shambhavi, Dr Priyanka, Dr Shubham



Significance:

Community Medicine is that branch of medicine which deals with promoting health and preventing disease. The cardinal goal of Community Medicine is to avert the occurrence of disease. The department is involved in various research activities measuring the health needs of populations and develops strategies for improving health and wellbeing through health promotion, disease prevention and health protection. Epidemiological principles and methods, epidemiology of communicable and non-communicable diseases, the relevant aspects of the social sciences, nutrition, maternal and child health and the principles of administration and management and ability to apply this knowledge to the management of health services and study of diseases as a community physician are the overall goals of the department.

BLOOD SAMPLE COLLECTION AND PROCESSING IN HEMATOLOGY LABORATORY

Faculty Coordinator: Dr. Uma Sharma, Dr. Prachi, Dr. Rajkumar, Dr. Komal, Dr. Shagun, Dr. Sonu
Lab Technicians: Virender, Rajesh Jha and Surender



Significance:

The main purpose is to educate students about blood collection and sample processing in hematology laboratory. They are made aware about various vacutainers, their uses and further processing of samples in Sysmex K21. Also there are live demonstrations of stepwise procedure of blood collection and processing. The students of various colleges and schools showed keen interest in knowing it. Also many students and policemen got free testing done.

DISEASE OF THE MOUTH AND FACE

Faculty Coordinator: Dr. Suma G N
Students: Dr. Jyoti, Vatsala, Garima



Significance:

There are various diseases affecting oral and facial structures. These diseases could be congenital (by birth) or acquired during life time. This 3D working model is designed to display diseases like oral cancer, precancer, cleft lip, salivary gland disorders, TMJ, eyes, ear, and nose abnormality. Also early detection of precancer by chair side optical instrument is demonstrate

ANATOMY

Faculty Coordinator: Dr. Susmita Shah, Dr. Shavi Garg, Dr. Shilpi Garg, Mr. Pawan Kumar, Mr. Arvind Deswal
Students: Dr. Harvinder Singh, Dr. Vikram Singh, Dr. Diksha Arora, Doyal Kataria, Deepanshu Mudgil



Significance:

The subject of anatomy is the fundamental for understanding other disciplines of medicine. Knowledge of clinical anatomy/ surgical anatomy/ neuroanatomy/ embryology is essential for understanding the aetiology of various disease conditions, to diagnose and manage these conditions & subsequently treating these conditions. For teaching in Anatomy cadaveric dissection is a must. For this we should have a cadaver and basic knowledge of preservation and biomedical waste management. We are creating awareness regarding the importance of body donation, embalming the body (preservation) and how to dispose the biomedical waste. We are also presenting a brief history of anatomy showing how the dissection was done in earlier times. For teaching in Anatomy from the cadaver first thing is to sensitize students to respect the cadaver.

SMOKING RELATED CHANGES IN ORAL CAVITY & FACE ALONG WITH ORAL SELF EXAMINATION

Faculty Coordinator: Dr Lavina Arya
Students: Anamika, Priya, Clarissa, Nidhi



Significance:

3D models representing changes in mouth like smokers palate, stained teeth, periodontitis, leukoplakia and oral cancer along with a model representing changes on face that is premature signs of aging i.e sagging, wrinkling on skin, early gray hair etc thus underlining the message that smoking and smokeless tobacco which is misled as trendy, attractive option is having drastic ill effects both in oral health and looks. A practical demonstration of how to do self examination of oral cavity at home using household available things like tongue blade, spoon, mirror, torch etc will be done for general awareness about detection of oral cancer.

JAL HAI TO KAL HAI (RAIN WATER HARVESTING)

Faculty Coordinator: Dr Atul Kaushik
Students: Shilpi, Tanya, Tanu, Sonia



Significance:
The project highlights judicious harvesting and conservation of rain water, which is usually drained waste. The water is stored in storage tanks and is reused for various household purposes. Rain water harvesting when applied on community basis can lead to huge conservation of life providing water, thus saving our planet earth.

PERIODONTAL MEDICINE

Faculty Coordinator: Dr. H.S.Grover, Dr. Vidushi, Dr.Neha
Students Kanika, Arpit, Bhargavi, Monica



Significance:
Offenbacher (1996) defines periodontal medicine as a rapidly emerging branch of periodontology which focuses on the research of new data establishing a strong relationship between periodontal health or disease and systemic health and disease. Periodontal medicine has the relationship between periodontal disease (a chronic inflammatory condition) – and overall health, as well as how systemic condition impact the progression of periodontal disease. For a long time it is felt that the bacteria is the factor that links periodontal disease to other infection in the body. However, more recent research demonstrates that inflammation may link periodontal disease to other chronic inflammatory conditions, such as diabetes, cardiovascular disease, Alzheimer's disease. Therefore, treating inflammation may not only help to manage periodontal disease but may also help with the management of other chronic inflammatory conditions.

PROCEDURE FOR RADIOGRAPH

Faculty Coordinator Dr Astha
Students: Dr Sana, Shweta, Smriti, Manushree



Significance:
Patient is asked to sit upright on dental chair. Procedure is explained to the patient and instructions are given not to move during procedure. X-ray machine is positioned alongside patient's head and exposure parameters are adjusted according to the area of interest then radiographic film is positioned in the oral cavity and X-ray is taken. Radiographic film is then removed from the mouth, washed with water to remove saliva and developed, fixed in dark room and then viewed in X-ray viewer for any abnormalities.

TELEDENTISTRY

Faculty Coordinator: Dr. Priyanka, Dr.Shalini, Dr.Vidushi
Students: Ashish, Sakshi, Yukti, Neha



Significance:
Recent advances in dental care have documented that early diagnosis, preventive treatment and early intervention can prevent or reduce the progress of most oral diseases, conditions that, when left untreated, can have painful, disfiguring and lasting negative health consequences. Teledentistry is an exciting new area of dentistry that combine electronic health records, telecommunications technology, digital imaging and internet to link health care providers in rural or remote communities to enhance communication, the exchange of health information and access to care for underserved patients. Most of the dentists are unaware about goals, advantages and how to get involved into Teledentistry. This article illustrates as to how Teledentistry can be effective solution for dentists and their patients

DENTAL IMPLANTS: DAWN OF A NEW ERA IN TOOTH REPLACEMENT THERAPIES

Faculty Coordinator: Dr. H.S.Grover, Dr. Vidushi, Dr.Neha
Students: Aakriti K, Aakriti B, Vishal, Vandana



Significance:

Tooth loss is very common and it can happen as a result of disease and trauma; therefore, the use of dental implants to provide support for replacement of missing teeth has a long and multifaceted history. Dental implant is a "root" device, usually made of titanium, used in dentistry to support restorations that resemble a tooth or group of teeth to replace missing teeth. Dental implants have a history of several centuries starting with the early civilizations more than 2,000 years ago. The biomaterials used for manufacturing dental implants include metals, ceramics, carbons, polymers, and combinations of these. It has various advantages which include : Replacing one or more teeth without affecting bordering teeth, support a bridge and eliminate the need for a removable partial denture, Provide support for a denture, making it more secure and comfortable, etc. Before placing implants it must be considered that there must be enough bone in the jaw, and the bone has to be strong enough to hold and support the implant and natural teeth and supporting tissues near where the implant will be placed.

HEAD MOVEMENT CONTROLLED WHEELCHAIR FOR QUADRIPLEGIC PATIENT

Faculty Coordinator: Dr. Sumit Phukela, Dr.Shefali Phogat
Students: Sakshi, Shalu, Karamdeep, Kiran, Magandeep



Significance:

Quadriplegic patients cannot move their arms to control their environment. These patients are not able to drive electric wheel chair. In such a situation we prepare a system where patient can wear the helmet and head movement device will be attached to it and change in the direction of the head will control the wheelchair movement. Micro electric mechanical sensor will translate the head movement into computer interpreted signals. Accelometer measures the static of motion. It then passes on this data to microcontroller. The microcontroller will then control the wheelchair motion.

FRETTING OVER TOOTH LOSS...NO MORE!!

Faculty Coordinator: Dr. Pooja, Dr. Reshu
Students: Tejender, Akshay



Significance:

The most reliable long term solution for tooth loss is Dental Implants. Implant supported prosthesis can be for a single tooth as well as for replacement of all teeth. General awareness regarding healing and rehabilitation or treatment procedure and protocols is lacking. We present models to create this awareness and encourage this treatment modality.

CAD-CAM TECHNOLOGY IN PROSTHODONTICS

Faculty Coordinator: Dr. Nupur Dabas, Dr.Bharti Raina
Students: Dr. Pooja, Tarshit, Aditi

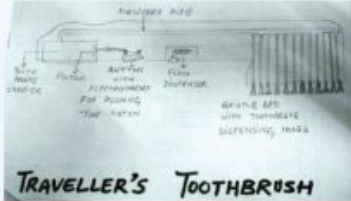


Significance:

This project shows steps involved in fabrication of prosthesis using CAD- CAM technology (Educational Project) and its uses in prosthodontics. Educational video will be prepared and displayed on LCD screen presenting the latest technology of CAD CAM showing steps involved in fabrication of different types of dental prosthesis. Project includes videos and a flex with diagrams and photographic representation of a aesthetic rehabilitations.

TRAVELLER'S TOOTHBRUSH WITH SELF CONTAINED TOOTHPASTE AND DENTAL FLOSS

Faculty Coordinator: Dr Nupur Dabas, Dr Bharti Raina
Students: Dr. Pooja, Abhinav, Divanshi, Aditi



Significance:

Objective of the project is to fabricate a model of toothbrush with self contained toothpaste and dental floss for traveller use. A toothbrush model has been fabricated where toothbrush has self-contained dentifrice and dental floss. The storage chamber for toothpaste in the handle of toothbrush and connected to a electromagnetic push button and piston system which when pressed dispenses adequate amount of toothpaste at the bed of toothbrush bristles.

CORRECTION OF INCOMPETENT LIPS BY BIMAXILLARY SURGERY

Faculty Coordinator: Dr Rahul Kashyap, Dr Jitender Phogat
Students: Aarzo, Abhinav, Abhishek, Aditi Sharma, AditiChaturvedi, Ashish, Anuj



Significance:

This is a 2D working model of 2 1/2 feet x 2 1/2 feet dimension describing the problem of incompetent lips and excessive incisor show secondary to Class I bimaxillary protrusion. In the model, the anatomy of the Class I bimax shall be shown in the profile view with the lips in an incompetent position at rest. When the model is activated, the first movement shall demonstrate the simultaneous extraction of the maxillary and mandibular 1st premolars creating space for the retraction of the interior segment. The 2nd movement shall involve the backward pulling of the incisor & canine segment into the extraction space with the automatic closure of the incompetent lips thus demonstrating the role of Anterior Maxillary Osteotomy with Lower Subapical Osteotomy in such cases.

BITE FORCE ANALYZER

Faculty Coordinator: Dr Bhupinder, Dr Shagun, Dr Manoti
Students: Dr Pankaj, Dr Lovleen



Significance:

It is a device that can measure force between any two surfaces and is durable enough to stand up to most environments. The sensor acts as a force sensing resistor in an electrical circuit. When the force sensor is unloaded, its resistance is very high. When a force is applied to the sensor, this resistance decreases. The resistance can be measured by a multimeter.

SGT HEALTH TIP APP

Faculty Coordinator: Dr Ankit Srivastava
Students: Mohd. Faisal, Nihal, Jyoti, Nancy, Nancy, Vipul.



Significance:

This app can be downloaded by android users. The information in this app will be under headings: A. Prevention, B. Dietary regime, C. Common diseases, D. Epidemic/Endemic diseases, E. SGT updates. Every morning one notification will be sent to the users, who have this app installed on their mobile phone. This will help local people to get daily preventive health tip app to inform local people about correct dietary regime to give the information about endemic and epidemic disease break out. This app will be instrumental in making local people understand about common diseases and their prevention. This app can be linked to SGT blog. If a patient wish to read more about the diseases can read on the blog. This app will help to maintain a good relation between university hospital with the local population by updating them about the surgeries, equipment and facilities available in hospital.

EARLY CHILDHOOD CARIES:- AETIOLOGY, CONSEQUENCES AND PREVENTIVE STRATEGIES

Faculty Coordinator: Dr Payal Chaudhuri, Dr.Shikha
Students : Jyotika, Monika Nagpal, Rijul, Sabreen, Riddhi, Renu, Harender,
Himadri, Deepali, Rajashree, Nitika, Nitika, Nisha, Nitika, Nisha, Nisha,
Nisha, Nisha, Nishtha, Mukul, Nishtha, Pooja, Pooja, Preetika



Significance:

Early childhood caries (ECC) is most common disease of pediatric dental patients which results in functional, aesthetic and psychological disturbances in the child. Further it may cause malnutrition, low self esteem, decay and malocclusion in permanent dentition. Causative factors of ECC is attributed to prolonged bottle use or breastfeeding at night, frequent snacking in between meals, consumption of sticky junk food eg:- chocolates, cold-drinks, burger etc. In this project, we can raise awareness about causative factors, consequences of bad eating habits, prevention along with healthy dietary patterns for maintenance of oral health with the help of charts and models.

ROOT CANAL TREATMENT

Faculty Coordinator: Dr. Gaurav, Dr. Anshul
Students: Dr.Apurva, Dr.Gagandeep, Karamdeep, Ankit, Madhur, Harsheen, Himanshu, Supriya



Significance:

Endodontic therapy or root canal is a sequence of treatment for the infected pulp of a tooth which results in elimination of infection and protection of the decontaminated tooth from further microbial invasion. Endodontic therapy involves removal of dental pulp structures, the subsequent shaping, cleaning and decontamination of the hollows with small files and irrigating solutions, and the obturation of the decontaminated canals. Filling of the cleaned and decontaminated canals is done with an inert filling such as guttapercha and typically a eugenol based cement. Root canal treatment has a success rate of more than 95%.

AESTHETIC RESTORATIVE DENTISTRY

Faculty Coordinator: Dr. Mamta, Dr. Astha
Students: Dr. Armish, Dr.Chinansa, Jyoti, Rinki, Himanshi, Jayati, Shubeena, Jaiprin



Significance:

Dentistry has developed a lot in the last decades especially in regards to the materials used and computerized technologies. One of the aspects of dentistry that has a good share of interest by the practitioner and the patient is AESTHETIC DENTISTRY. A lot of patients are victims of tetracycline discolorations, fluorosis of areas and hypocalcifications, these are common clinical scenarios that are best treated using veneers. All the new trends of modern aesthetic dentistry from routine basic treatments to the most advanced and technology based aesthetic treatments include introduction of the new composite systems, conventional and modern ceramic materials, bleaching techniques and porcelain ceramic veneers

3-D WORKING MODEL OF ORTHODONTIC TOOTH MOVEMENT USING MINI-IMPLANTS

Faculty Coordinator: Dr Mona Prabhakar, Dr Ashish Dabas, Dr Namrata Dogra
Students: Abhishek Dhiman, Rishabh Saini, Mahima, Nikhat



Significance:

Orthodontic speciality is concerned with correction of malaligned teeth. This is achieved through movement of teeth through alveolar bone. In many patients in order to achieve alignment of teeth, extraction of premolars is required. This extraction space is utilized to move the anterior teeth backwards. Many patients are apprehensive about teeth extractions and repeatedly inquire regarding whether this space will get completely filled or not. This model will showcase how Orthodontics moves the teeth backwards into the extracted teeth. Thus this model can be effectively used for patient education. Mini-implants are a new addition to orthodontic armamentarium so in this model we are showcasing how the front teeth move backwards with the help of mini-implants. It will help in educating the patient that extraction space can be closed very efficiently using a new modality, mini-implants.

3 D MODELS SHOWING NORMAL, PROGNATHIC MAXILLA AND PROGNATHIC MANDIBLE

Faculty Coordinator: Dr Seema Grover, Dr Vikas Malik
Students: Rishabh, Richa, Vaishali, Harshul



Significance:
Patients report to us not only for their dental irregularities, but also for facial deformities Orthodontics can successfully deal with these deformities patients report to us during growing stages. Common deformities are mandible and maxillary prognathism. Many orthopedic appliances are available which can be used according to the underlying skeletal problem. This model shows the most common facial abnormality seen which can be treated using Orthopedic appliances. This helps in educating patients about usage of headgear and chin cap for correction of Prognathic Maxilla and Prognathic Mandible.

PREVENTIVE MEASURES TO ORAL HEALTH

Faculty Coordinator : Dr. Sachin Chand, Dr. Suchi Khurana
Students : Shreya, Sumedha, Sonam, Taruna, Vipul, Vaishali, Vaishali K, Vikas



Significance:
Oral health is linked to one's overall health. Poor oral hygiene practices and mistreatment of oral diseases can easily affect our quality of life. Good oral hygiene is not limited to merely brushing and flossing. To prolong the life of our teeth and mouth, we need to adhere to a good dental care routine and consider other factors like Balanced Diet, limited consumption of sugary foods and drinks, avoiding tobacco usage in any form and regular dental checkups.

WATER TREATMENT PLANT

Faculty Coordinator : Dr. Shourya Tandon, Dr. Sachin Chand
Students: Aakriti, Abhishek, Abhishek, Anamika, Ankit, Ankita, Anshita, Anuj



Significance:
Water treatment is the process that makes water more acceptable for a specific end-use. The end- use may be drinking, industrial water supply, irrigation, river flow maintenance or many other uses, including being safely returned to the environment. Waste water treatment plants have to process polluted water through several steps before it is acceptable to be put back into the water supply.

DENTAL HEALTH EDUCATION

Faculty Coordinator : Dr. Shourya Tandon
Students: Sakshi , Sakshi, Shalini, Shalu, Shatakshi, Sheetal, Sheetal, Shivam, Saurabh, Shafia



Significance:
It is the process of imparting information about the dental health which helps an individual to keep the oral cavity healthy as good oral hygiene helps a person to prevent oral diseases such as dental caries, periodontal diseases, bad breath and other dental problems. It helps to create awareness among people regarding the importance of oral hygiene as well different oral hygiene aids like tooth brush, Mouthwashes, Tongue cleaner and Floss. It helps to inculcate healthy oral habits among individuals

OUTREACH DENTAL CAMP

Faculty Coordinator: Dr. Shourya Tandon
 Students: Garima, Geeta, Geeta, Gulshan, Harsheen, Harshul, Heena, Jyoti, Jyoti, Kunal



Significance:
 The Dental Outreach Program runs to provide dental services to areas of the province that were identified as isolated and under serviced. Inequitable distribution of dental workforce and population ratio across rural and urban areas augmented the need of effective dental outreach programs. The Mobile Dental Van can provide services which include oral health screening, cleaning of teeth (Scaling), filling of cavities as well as dental extractions. Dental Camps are conducted by active participation of dental students with a supervision of dental teaching staff.

NAV-MUSKAAN CLEFT EDUCATION MODEL

Faculty Coordinator : Dr Dayashankar Rao, Dr Kriti Jain, Dr Raman Kapoor
 Students : Rakshita, Sehar, Namrata, Tanya, Rishabh , Praanshu, Nishant, Ashish



Significance:
 An LED based electronic model devised in-house by Nav-Muskaan Cleft Centre (A Cleft Care Initiative by SGT University), Department of Oral and Maxillofacial Surgery, Faculty of Dental Sciences, in collaboration with the Department of Electronics, (Faculty of Engineering). The model aims at educating the public about the cleft treatment protocol and the sequencing of various interventions required. Complete rehabilitation of cleft patients requires various surgical and non surgical interventions at different stages of a cleft patient's life. The general public is largely unaware of the timing and staging of these treatments. The model, with its attractive light based circuit, will truly "enlighten" the general public regarding the complete treatment of cleft lip and palate patients.

MOBILE AND PORTABLE DENTAL SERVICES CATERING TO THE BASIC ORAL HEALTH NEEDS OF THE UNDERSERVED POPULATION

Faculty Coordinator: Dr. Charu Khurana, Dr.Neha Shukla, Dr.Abhinav B
 Students: Dr. Sonia, Dr.Tarvi



Significance:
 Mobile and portable dental units are an effective and efficient way to take the sophisticated dental services to the doorsteps of the rural masses, school premises and urban slums. Mobile and portable dental services offer a viable option to address the issues of oral health-care delivery with the help of portable dental chair and dental trolley. The basic system includes an operator light source, an examination kit, a portable head rest, and a first aid kit for dental purposes. These portable dental units used have a rotary instrument and an operator light fixture, vacuum canister, ultrasonic scaler, radiographic equipment along with compressors for air-water syringes and high- and low-speed hand pieces. The increasing dental manpower can best be utilized for the promotion of oral health through mobile and portable dental services.

METASTASIS

Staff Involved – Dr Pulin, Dr Aparna, Dr Manpreet



Significance:
 Metastasis is a spread of tumor cells from primary site to other part of the body. This may take place via blood stream or via lymphatics . This is a working model that depicts the process of spread of tumor cells from a primary site to a distant site. The actual movement of the tumor cells via blood vessel has been shown in the model. With this model we can make people understand how does the cancer spreads from primary site to the other sites of the body.

DENTIN HYPERSENSITIVITY

Staff Involved – Dr Pulin, Dr Aparna, Dr Manpreet

**Significance:**

Dentine sensitivity is one of the most commonly encountered clinical problems. It is an exaggerated response to application of a stimulus to exposed dentine, regardless of its location. Three major mechanisms of dentinal sensitivity have been proposed in the literature- Direct nerve stimulation theory, Hydrodynamic theory & Transduction Theory. The model depicts the method of transmission of pain through dentinal tubules based on the hydrodynamic theory. With the help of lights a visual display of pain transmission has been shown.

PERIODONTAL LIGAMENT FIBERS

Students Involved – Simran, TechI Akey, Lisam, Jyoti Saini, Mahima

**Significance:**

The periodontal ligament is a specialized connective tissue which connects the tooth to the alveolar bone and lies in periodontal ligament space around the tooth. A Model showing the cross section of a tooth along with the Periodontal ligament fibers has been shown so as to explain how the fibers hold the tooth within the socket.

CLINICAL SET UP WITH DENTAL CHAIR

Students Involved – Rajat, Neha, Renu, Danish, Vandana, Tanvi Dagar

**Significance:**

A display model exhibiting a clinical set up along with an actual working Dental Chair has been shown inside the set up. Dental chair is based on the principle of Pascal's Law which is a principle in fluid mechanics stating that a pressure change occurring anywhere in a confined incompressible fluid is transmitted throughout the fluid such that the same changes occurs everywhere. The model has been made to explain the working mechanism of Dental Chair.

TONGUE ANOMALIES

Students Involved – Simpy, Vidhi, Chetna, Naina, Ankit Thakur

**Significance:**

Abnormalities of the tongue can present a diagnostic and therapeutic dilemma for physicians. Most of the disorders are developmental in nature. It is important to recognize these entities. Various anomalies/disorders affecting the tongue are shown in this model.

DENTAL CARIES

Students Involved – Priya, Shikha, Tanya, Tanmay, Lavanya, Rudrani, Nupur, Jyoti Pandey



Significance:

A cross section of the tooth along with the spread of caries has been shown in this model. The lights have been used to show the constituents of pulp including nerve, artery and vein. Dental caries is the bread and butter of dentistry and thus with the present model we have tried to explain the spread of dental caries in a simplified way.

WASTING DISEASES OF TEETH

Students Involved – Archit, Aishwarya, Ankita, Sushmita, Pooja



Significance:

A model showing the causes and preventive measures for Attrition, Abrasion and Erosion of tooth has been prepared. Sitting and getting treatment on a Dental Chair is a cumbersome job but there are certain diseases which can be easily prevented if we are a little bit aware of them. With the present model we have explained all the causes and preventive measures for these in details so that a common man is aware of all the consequences.

ANATOMICAL LANDMARKS

Students Involved – Rishab, Nidhi, Kritika, Jyoti Yadav, Tannupriya, Tanvi Mahajan



Significance:

A model showing the various anatomical landmarks of the crown of a tooth has been prepared using the plaster models. Dental student works in the future his or her practice begins with the in depth knowledge of anatomy of a tooth. Thus with this model we have depicted the major landmarks of a crown of a tooth which will make the understanding of the subject easier.

FORENSIC SCIENCES

Students Involved – Ayesha, Avradita, Pranav, Girisha



Significance:

A model showing a crime scene has been prepared so as to explain the role of a Forensic Odontologist for Victim identification. The role of Cheiloscopy and Bite Marks has been specially emphasized in the Model. The present model has been made to create awareness of the role of a dentist in Forensics.

SYNERGY 2017

The Annual Technofest

PARTICIPATED SCHOOL

BASANT VALLEY PUBLIC SCHOOL
GURUGRAM

GST FOOD AND SERVICE TAX

Name of the Participants: Kajal, Surbhi, Rajiv.



1. GST food and services tax information.
2. We show the difference between the value of goods and services before and after GST .
3. In phase one which is before GST we show that how tax indirect tax is charge again and again on the same product and how the cost of product is raised.
4. In Phase -2 which is after GST we show that how liability of tax transfer from one to another. After GST only one tax is charged on the particular products.
5. This model is based on GST food and service tax information.

BASANT VALLEY PUBLIC SCHOOL
GURUGRAM

USE OF PIEZOELECTRIC EFFECT IN SMART CITY

Name of the Participants: Suraj, Dherem Dev, Priya.



The Piezoelectric effect in the ability of certain materials like QUARTZ crystal to generate an AC wattage when subjected to mechanical stress or press. We are going to use this Phenomena for the electricity generation in our future smart cities for this we have to assemble these peizamaterials beneath the roads. When vehicle would passed through it there mechanical pressure would generate an electrical potential. This generated electricity can be used to provide electricity to street light.



GLOBAL WARMING AND GREEN HOUSE EFFECT

Name of the Participants: Anjali, Aarti, Rajesh.



A Greenhouse effect is a process by which the rotation from a planet's atmosphere warms the planet's surface to a temperature about what it would be without its atmosphere increasing pollution. We should reduce the burning of fossil fuel area by spreading awareness.

PROJECT – P.E.T

Name of the Participants: Vardhan Sharma, Neeraj Yadav, Suraj.



P.E.T. robot is an automated taxi which is going to follow a line of any dark colour. We can place such tracks throughout the city and at every taxi stop at a t-point will be present and our taxi is going to sense that t-point and stop for some time. When the taxi is about to move an L.E.D and it will blink and that will tell the passengers that if someone comes in the path of the taxi then an ultrasonic sensor is going to sense the distance between the taxi and the object. If the distance is less, then the taxi is going to stop till the object moves away from the track.

PROJECT – FROSK

Name of the Participants: Priyam Jain, Pranay Varshey.



Frosk is a cleaning bot which makes the task of cleaning your house much more faster and easier. It consists of various components like, Chassis, Empty plastic bottle, Motors and Gears. It can perform various functions i.e. vacuum cleaning, sweeping, moping, dusting blowing dusting and various articles in household. It is a remote-controlled device which can easily move around the house.

PROJECT – ROVER

Name of the Participants: Shivansh, Rohan.



It is a DIY Rover that is fire proof as well as water proof. In today's exoplanetary missions there are many shortcomings. These shortcomings have been fulfilled by our interstellar robot. It is the future technology device. many of times, the heating of rockets causes the whole mission to fail and death of our astronauts. To counter this and other problems we have made our robot fireproof. It is manually controlled however we would be automating it. It can perform various functions i.e. vacuum cleaning, sweeping, moping, dusting blowing dusting and various articles in household. It is a remote-controlled device which can easily be moved of around the house.

SENSOR SHOES

Name of the Participants: Kumar Rishav, Rachit Pasrija, Mehak, Navya.



The main problem faced by the blind people is finding their way and to detect their obstacles, so we present the shoe for blind. BLINDS :- B-eing, L-inked, I-nto, N-otification , D-evice, S-hoe. The reflection of sound - the bouncing back of sound when it strikes a hard surface is known as reflection of sound. Reflection of sound does not require a smooth and shining surface. The reflected sound is known as echo. The Concept Used (REFLECTION OF SOUND). The reflection of sound follows the law " angle of incidence equals angle of reflection some times called the law of reflection.

CYCLIC ORGANIC FARM

Name of the Participants: Kumar Rishav, Rachit Pasrija, Mehak, Navya.



Organic farming is an alternative agriculture system which originated early in the 20th century in reaction to rapidly changing farming practices . It deals with fertilizers of organic origin such as composted manure, green manure , and bone meal the places emphasizes on techniques such as crop rotation and companion planting.

CONSUMER PROTECTION ACT 1986

Name of the Participants: Vinita, Pooja, Jigyasa, Monika.



We have prepared the model on 'CONSUMER PROTECTION ACT 1986(COPRA).In this model we have shared about what comes under this Act. Consumers are now the kings of markets. So, the government has presented this Act, in favour of the consumers. As to safeguard the interest of the consumers is the need of the day, under this Act (COPRA), the consumers are given rights and grounds for complaints and their remedies. We have also used some signs ISI for the electrical appliances. FPO for food products, Hallmark for jewellery determination etc. It is also to share that if in case the loss is below 20 lakhs, a consumer can appeal to a District Court and if it exceeds 20 lakhs but below 1 crore can be appeal to state court and if it is more than 1 crore, a consumer can appeal to the Supreme Court. That's all about our model based on consumer protection act. 1986.

STOCK EXCHANGE MARKET

Name of the Participants: Simran, Vaishali, Bharat, Mukul.



BSE (Bombay Stock Exchange) in which top 30 companies deal in shares and NSE(National Stock Exchange) in which top 50 companies deal in shares. There are many companies but top companies result in higher/lower price of sensenx. This model shows money supply. Money i.e. earned from agricultural sector and deposited to banks and banks lend money to investors to invest in market. In this way, money flow from all sector. SEBI which protects the investor's right so that no unfair trade practiced happened with investors. Higher the money supply more is the development. It leads to rise in the price of share.

POLLUTION CONTROLLED BY ELECTRIC CAR WITH THE HELP OF ELECTRO MAGNETIC INDUCTION :

that a voltage is induced in a circuit whenever relative motion exists between a conductor and a magnetic field and that the magnitude of this voltage is proportional to the rate of change of the flux".

Name of the Participants: Himanshu, Shanawar, Depender.



Electromagnetic Induction is the process of using magnetic fields to produce voltage, and in a closed circuit, a current. How much voltage (emf) can be induced into the coil using just magnetism. Is determined by the following 3 different factors. 1). Increasing the number of turns of wire in the coil – By increasing the amount of individual conductors cutting through the magnetic field, the amount of induced emf produced will be the sum of all the individual loops of the coil, so if there are 20 turns in the coil there will be 20 times more induced emf than in one piece of wire. 2). Increasing the speed of the relative motion between the coil and the magnet – If the same coil of wire passed through the same magnetic field but its speed or velocity is increased, the wire will cut the lines of flux at a faster rate so more induced emf would be produced. 3). Increasing the strength of the magnetic field – If the same coil of wire is moved at the same speed through a stronger magnetic field, there will be more emf produced because there are more lines of force to cut. If we were able to move the magnet in and out of the coil at a constant speed and distance without stopping we can generate a continuously induced voltage that can alternate between one positive polarity and a negative polarity producing an alternating or AC output voltage and this is the basic principal of how a Generator works similar to those used in dynamos and car alternators. In small generators such as a bicycle dynamo, a small permanent magnet is rotated by the action of the bicycle wheel inside a fixed coil. Alternatively, an electromagnet powered by a fixed DC voltage can be made to rotate inside a fixed coil, such as in large power generators producing in both cases an alternating current.

WATER LEVEL INDICATOR

Name of the Participants: Swami, Mandvi, Khushi.



It is called the Water Level Indicator. Now a days everybody has overhead tank at their homes. But everyone who has a water tank above knows the kind of problems that they face. Firstly there is no system to track the water in the tank. Then there comes a secondary problem that is when their water pump is started they have no idea when it gets filled up and sometimes there are situation where the pump keeps on pumping water to the tank and the water starts spilling out from the tank. There is wastage of energy as well as wastage of water.

MOBILE DETECTOR

Name of the Participants: Shivam, Abhishek, Dimple.



This mobile phone detector can sense the presence of an activated mobile phone from a distance of four to five meter, so it can come handy in an examination hall or meetings where mobile phones are not permitted. The circuit can detect incoming and outgoing calls, SMSes, Internet and video transmissions even if a mobile phone is kept in silent mode. When it detects an RF signal from an activated mobile phone, its LED starts blinking and continues to blink until the signal stops.

CITIES IN THE FUTURE

Name of the Participants: Rahul Bhardwaj, Sandeep Kumar.



Summary: This model is about how cities in India will look like in the upcoming future. It shows lift parking system which will overcome the parking problems of the upcoming scenario to a great extent. This model also includes bullet train and the automatic street lighting system such that street lights will get automatically on during night and will get turned off as the day arises using sensor technology. Here a missile named NGARM (New Generation Anti Radiation Missile) is also shown which is going to be launched by DRDO in 2022. It is having a range of 100 kms and its broadband seeker is able to pick up radiation or signals emitted by radars and communication systems, home onto the target and destroy the network. This will put our India miles ahead of China and Pakistan.

HUMAN EXCRETORY SYSTEM



The Model was regarding The Excretory system of human being kidney is the main organ for human excretory system .Its functional unit is nephron. Different artery brings impure blood from the Body to the kidney where the blood is filtered by the glomerus and then pass in to tubular part of nephron where reabsorption and secretion of some useful substance takes place. The purified blood is transported in to the Body via renal vein . The filtered called urine is collected in the urinary bladder where it is stored and then pass out through urethra.

INTEGRATED CIRCUIT APPLICATION



Water Level Indicator It is very useful to indicate the water levels in tank. Whenever tank gets filled, an alter is initiated on particular levels. There are four levels (Low, Medium, High, and Full) in which 3LED s are used to indicate initial three levels (A,B,C) and one Buzzer to indicate FULL level (D) .when tanks get filled completely a beep sound from Buzzer is obtained. In this transistor is used as a switch. Initially, there is no voltage applied to base of the transistor and the transistor is on OFF state and no current is flowing through collector and emitter and LED is OFF. When the water level reaches to Point A in the tank, the positive side of the battery gets connected to the base of the transistor through the water. So, when a positive voltage has been applied to the base of the transistor, it gets in to ON state and current starts flowing from collector to emitter and LED glows. The same is applicable to all the levels.

Musical Alarm In this zener diode, voltage regulator is used. This will maintain the required supply voltage less than 4.5 while combining with other circuits. Here zener diode with a breakdown voltage of 4.7 V is used .This will maintain output voltage nearer to 4.7V for a wide range of reverse current .Supply input (pin 2) of the UM66 is given to the regulator output .Melody output is taken from pin 3. This output is lower in amplitude and cannot drive a loudspeaker. Thus an NPN transistor is used for amplification .Output of the melody generator is given to the BC547 NPN transistor through 1K resistor for limiting the current .Amplified output is given to the loudspeaker .This circuit is commonly used in calling bell, phone ,toys ,musical bell in doors, home security alarm systems burglar alarm etc.

PROJECT ON ORGANS OF UNO



The project on organs of UNO presenting the structure concept and system of UNO. The main organs of UNO .The security council, General assembly, International Court, Economic Council were depicted with min faculty and pictures. There were systematic postures of buildings, Power duties of UNO in this Model.

GOODS AND SERVICE TAX (GST)



An indirect tax which was introduced in India on 1st July 2017. It was introduced as per constitution act 2017. The GST is governed by a GST Council 122nd amendment Act Bill. The GST is Governed by a council and its chairman is the finance Minister of India. Component of GST 1.CGST – Collected by the Central Government 2.SGST- Collected by the State Government 3.IGST- Collected by the Central Government Effect on Roadways. The incident of tax will come down to 5% to 6%.But transport department has merged as new bumps to faster movement roadways started constructions and improving the road.

TOPIC : GST

Name of the Participants: Prachi, Preeti, Gaurav.



In this model we show that how the previous taxes in India are merged into single tax GST. It shows how GST saves the time and makes the procedure simple.

MODERN SECURITY

Name of the Participants: Sahil, Rashi, Subham.



Modern are a trusted name in home alarms and security system, and we specialize in supplying outstanding alarm systems to secure your home and valuables. By protecting your home, not only avoids financial loss but also the emotional distress to yourself & your family.

CONSERVATION OF ENERGY

Name of the Participants: Sakshi, Bhawna, Sachin.



In this project we present how to conserve energy. We can generate electricity by purifying water and clean our city by purifying polluted air. Our motive is to make our city clean & green with the pollution free environment.

SEWAGE TREATMENT

Name of the Participants: Preety, Anjali, Priya.



Sewage treatment is the process of removing contaminants from waste water, primarily from household sewage. It includes physical, chemical, and biological processes to remove these contaminants and produce environmentally safe treated waste water or treated effluent.

HYDROPONIC PLANT PRODUCTION

Name of the Participants: Archana, Laxmi, Shivani yadav.



In 1860 The technique of growing plant in a nutrient solution is known as hydroponics. It is good for saving water purpose Now, a days the plantation is diseasable so, the main purpose behind this to grow the disease free plant. To get fresh product with high yield quality plants are grown without soil particles or soil. Water and nutrients are supplied through a plant tray. Conditions are customized based on the needs of the plant. In some cases, support structure is built to support the body of the plant. It maintains the pollution caused by the cropping in soil. It does not affect the Ecosystem, so this technique is very important.

SEWAGE TREATMENT PLANT

Name of the Participants: Niket, Riya, Prateek.



Students of GPS designed a cost effective model for using sewage water. This kind of model has wide application in villages. The treated water can be used for agriculture. Waste can be used in many purposes.

PAPER THAT GROWS INTO PLANT

Name of the Participants: Simran, Sameer, Rahul.



An initiative taken by the students of GURUGRAM PUBLIC SCHOOL SECTOR-55 by their project based on eco friendly paper that can be used for making materials like wedding cards, birthday cards and visiting cards etc. The seeds are embedded inside paper. When shredded paper is put into the soil it will grow into a plant.

AREA OF CIRCLE DERIVATION

Name of the Participants: Mayank, Shagun



We all know that area of circle is πr^2 . But only some of us know how this formula came .This innovative project by GPS tells us how area of circle is πr^2 .

APPLICATION OF TRIGONOMETRY

Name of the Participants: Nisha, Pratham, Mayank, Shagun



The word trigonometry has been originated from greek word trigono means triangle and meteron means measure. It is a branch of mathematics, dealing with the relation of sides and angles of triangle and with relevant function of any angle. This project made by GPS helps us to get an angle, height or distance

STEAM ENGINE GENERATOR

Name of the Participants: Garima.



A steam engine generator is a power station in which the electric generator is steam driven. Water is heated, turns into steam and spins a steam turbine which drives an electrical generator. After it passes through the turbine, the steam is condensed in a condenser. To condense steam in a cylinder, thus causing atmospheric pressure to drive a piston and produce mechanical work.

METAL ION DETECTOR

Name of the Participants: Tushar, Akansh, Rohit



A metal ion detector is an electronic instrument which detects the presence of metal nearby. Metal ion detectors are used for finding metal inclusions hidden within objects or metal objects buried underground. Metal ion detector consists of an oscillator producing an alternating current that passes through a coil producing an alternating magnetic field. The change in magnetic flux occurs due to metallic object is detected.

SMART CITY

Name of the Participants: Arpit, Bhawna, Naina.



A smart city is a complex, long term vision of a better urban area, aiming at reducing its environmental footprint. The smart city is conceptualized on the framework of Digital City. It supports the creation of a wired, ubiquitous, interconnected network of citizens and organizations sharing data and information and joining online services. Green City: It regards an ecological vision of the urban space, based on the concept of sustainable development. Knowledge City: It regards the policies aiming at enforcing and valuing data, information and knowledge available and produced in city.

SMART CITY

Name of the Participants: Preeti, Afridi, Nittin.



In our Smart City Model, We have shown the following :-

1. Metal Detector Purpose :- It is used to detect metal like Knife, lighter etc.
2. Vehicle Sensing Lights Purpose :- Save Electricity
3. Straddling Bus Purpose :- To reduce traffic on the roads.

ACID RAIN AND ITS EFFECTS

Name of the Participants: Nittin, Indrani, Bhupendra.



The topic in chemistry is Acid and its harmful effects on the society and fertilization of soil. The purpose behind it to create awareness among the students against Air Pollution needier is the reason to produced the Acid Rain. Students present their views through two parts of the model. The first part of the project shows Air Pollution to produced Acid Rain and its harmful effect on fertilization of soil on society and human beings.

GLOBAL WARMING PREVENTION

Name of the Participants: Monu, Gulshan, Chandershekhar.



We want showcase through this model how we can preserve our environment and free it from pollution. We can use natural sources like solar plants, tree etc.

DEVELOPMENT OF VILLAGES

Name of the Participants: Jiya, Mahima, Ankita



We must maintain and conserve our environment and also try to reduce pollution as purification of water, as oxygen and water are the basic need of human so we should conserve it

MARI GOLD SR. SEC. SCHOOL
GURUGRAM

WATER TREATMENT PLANT

Name of the Participants: Paras, Mukul, Rishiraj



With the help of water treatment plant we obtained the pure water which we can drink and used for domestic purpose now a days water becomes polluted by human wastage sewage waste and other garbage thus the filter of sewage water, we setup water treatment plant to reduce the scarcity of water in the areas.

MEENAKSHI PUBLIC SCHOOL
GURUGRAM

GST

Name of the Participants: Prerna, Nandini.



GST, Goods and Service Tax is an indirect Tax applicable throughout India which replaced multiple cascading taxes levied by the Central & State Government. Under GST, tax will be levied only on the value added at each stage, It is a destination based tax, which is levied where goods and services consumed. The idea of GST was given by former Prime Minister of India, Sh. Atal Bihari Vajpayee government in the year 2000. GST was launched on the midnight of 30 June, 2017 after struggle of 17 years.

MARI GOLD SR. SEC. SCHOOL
GURUGRAM

GREEN AND EVERGREEN CITIES

Name of the Participants: Vradhi, Shivani, Khushi



The model 'Evergreen' is based on plantation. Pollution is being the reason for increasing in health and environmental issues. This model is helpful in giving guidance in such situations.

M. M. PUBLIC SR. SEC. SCHOOL
SECTOR - 4, GURUGRAM

MODERN CITY USING HYDRAULIC LIFT

Name of the Participants: Bijender, Kartik, Anshul, Shivam



The second model is Hydraulic city (Hydro means fluid and oilic means pressure) This project is based on Pascal's law and consists of five parts hydraulic crane, lift, brake, bridge and hydro power plan. Hence, both the models are basically prepared to make people aware about Hydraulic system.

FOOD ADULTERATION AND DISEASES

Name of the Participants: Jyoti, Ritika, Sanyam, Anamika



The Model 'Food Adulteration' helps to distinguish the adulterated food item from non-adulterated food.

POLLUTION FREE DESIGNS OF AUTOMOBILES

Name of the Participants: Deepak, Vishal, Sweta, Jatin



This model suggests alternate energy sources including wind mill, solar plated and piezo chip to run automobiles. The energy is stored in a battery house and vehicles are run with this energy.

SMART DUSTBIN

Name of the Participants: Nisha, Diksha, Komal, Puja



The sensor based dustbin will detect the level of garbage. When the dustbin is filled with garbage, it sends a message to the Municipal Corporation Office indicating the need for replacement.

FEPIZO ELECTRIC SHOES

Name of the Participants: Bhawna, Prateek, Rajkumar.



Piezo Chips are attached in shoes, where potential energy is converted to electrical energy when the wearer walks with the shoes.

FORMATION OF BIOETHANOL FROM LIGNOCELLULOSIC BIOMASS CROP RESIDUE

Name of the Participants: Yashasvi, Mritunjay Rana.



The cell wall lignocellulosic biomass contains lignin and cellulose. With the help of converting techniques this cellulose can be converted into bioethanol which can be used as a fuel. The large sized crop residue is washed and grinded. The glucose formed during the process reacts with yeast and leads to fermentation which produces ethanol. Complex Cellulose are converted into simple cellulose.

HUMAN KIDNEY

Name of the Participants: Anirudh, Rishabh, Ritik, Mitali, Vandana, Supriya.



A working model of kidney was made which displayed kidney filters the blood and how urine passes out from the body. Astephon pump was used as the heart used pipe for making the mental vines and level asters . The kidney are two bean – shaped organs each about the size of a fist. They are located just below the rib cage one on each side of the spine. Every day the two kidneys filter about 120 to 120 quarts of blood to produce about 1 to 2 quarts of urine composed of wastes and extra fluid the bladder stores urine.

SOUND OPERATED SWITCH

Name of the Participants: Devanshu, Prithvi, Rishabh.



Sound activated switch is designed to provide a mechanism which can switch on/off an electrical appliance remotely by sound (preferably a clap). Clapping twice would toggle between on and off. Audio signal received via microphone is amplified and compared with a specified threshold voltage to detect occurrence of sound event. The designed circuit presently compares the voltage level received from microphone; hence any spurious sound which exceeds the threshold will be able to turn on/off the switch.

HYDRAULIC CRANES

Name of the Participants: Aditya, Hirdesh, Vineet.



This model is based on the fact that when you push the plunger on a syringe, water is forced into a second syringe, extending it's plunger and lifting a mechanical arm. The process illustrates aspects of fluid pressure, force and mechanical work.

PINE CREST SR. SEC. SCHOOL
DLF PHASE- II, GURUGRAM

AUTOMATIC STREET LIGHT

Name of the Participants : , Priyanka, Anita, Saroj



This model is based on the fact that there is no need of manual operation for switching on and off when there is a need of light it automatically switches on. Whenever any vehicle passing through the road, street light will automatically turns ON.

RAWAL CONVENT SCHOOL
BALLABHGARH

QUADCOPTER DRONE

Name of the Participants: Rahul Singh, Gaurav Kumar.



This model demonstrates the working of aerial vehicles and encourages farmers & other potential makers to learn about this aerial vehicle named 'Quadcopter Drone'. Used for agriculture purpose for pollination in fields, these quadcopter drones have great potential to replace big aircrafts such as paragliders for use in agricultural purposes.

RAJMALA SR. SEC. SCHOOL
FARUKHNAGAR

MINI SMART CITY MODEL

Name of the Participants: Shikha, Mansi, Rashmi.



Electricity is the need of the hour and with depleting energy resources like water, coal etc., there is an immense need to find alternate ways of generating electricity. So far, solar panels have been used to convert solar energy into electrical energy which is stored in the form of a battery.

RAWAL CONVENT SCHOOL
BALLABHGARH

BLUETOOTH VOICE APP CONTROLLED CAR

Name of the Participants: Rahul Singh, Gaurav Kumar, Gaurav Nagar



In today's world everything is becoming smarter day by day. To make our life smarter we have tried to make a car having Bluetooth connectivity with smart phones controlled by voice using an app named 'AMR VOICE'. It can also be made on large scale by taking all the precautions and safety features inbuilt.

RAILWAY MAINTENANCE DRONE

Name of the Participants: Ryan, Rahul, Sachin.



Railway maintenance automated drone is a futuristic concept design for the Indian Railways. It will ensure that railway tracks remains safe and secure, preventing accident caused by human errors. Equipped with the latest technology available to us and having cloud based computer system, you won't see any accidents no more. Its main function is to detect defects and flaws in tracks, carryout regular inspection and minor maintenance and help out trackmen for large maintenance.

RECYCLED SCHOOL BAG

Name of the Participants: Nitin, Ankur, Naman Chauhan.



A school bag which stands out. This is not just a bag. It can be converted into a study table which is equipped with 6v-2amp solar panels battery powered LED lights. Material used in making the bag can be recycled , but can be used for many other purposes as well.

DOMESTIC WATER TREATMENT PLANT

Name of the Participants: Nancy, Pallavi, Sneha.



GREY water filtration system can be made at home to save water. Grey water is passed through mesh filter, then traditional three layer filter, a fish tank used to prevent breeding of mosquito and larva, filtered water is pumped to utilize for flush , irrigation and washing clothes. It has both pros and cons, but with thorough research it can be proved as a boon.

DNA FAMILY FINGER PRINTING

Name of the Participants: Isha, Kajal, Sudhanshu.



The finger prints are based on DNA or are created randomly. Topic was interesting for the audience as they all were excited to know about their personality based on the pattern of their fingerprints.

S. D. MEMORIAL SR. SEC. SCHOOL
GURUGRAM

SEWAGE TREATMENT PLANT

Name of the Participants: Arjun, Jahiman, Prateek, Subham.



Purify sewage water to do the household work and to make the environment safe using cheaper chemical as compared to the one used in conventional method.

SEHWAG INTERNATIONAL SCHOOL
JHAJJAR

SEWAGE TREATMENT PLANT

Name of the Participants: Deepall Sehrawat , Varsha Sangwan, Gurpreet.



Based on the principle of filtration, sedimentation, coagulation and sterilization which is able to purify water upto 99% that can be reused for various purposes such as irrigation etc. Very helpful in disposing sewage, slurry, garbage etc. without causing damage to the environment.

S. D. MEMORIAL SR. SEC. SCHOOL
GURUGRAM

ROBOTIC FLOOR CLEANER

Name of the Participants: Anshika, Dipti, Vishal Sharma.



Project related to Physics i.e. Robotics floor cleaner . A multi-functional robotic floor cleaner to reduce the manual efforts in cleaning purposes.

SEHWAG INTERNATIONAL SCHOOL
JHAJJAR

WATER MOTOR

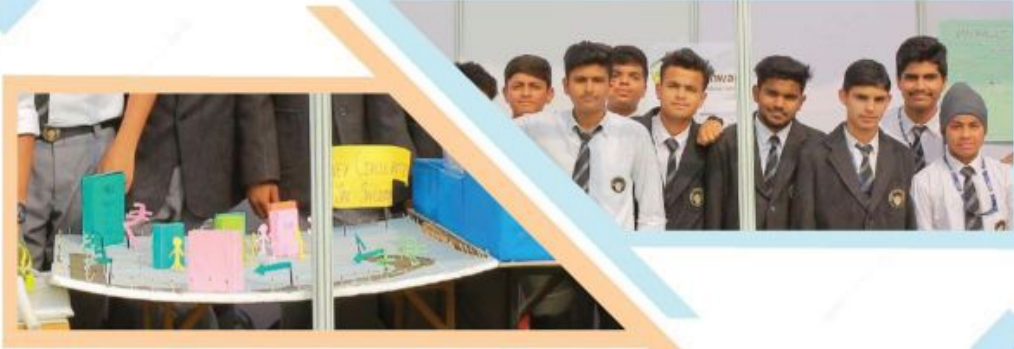
Name of the Participants: Harshvardhan, Kaushik Pradhan.



Under the pressure of difference of the principle of work. As the moving pump part i.e impeller vane, piston diaphragm etc begins to move, air is pushed out of the way. The movement of air creates low pressure which can be filled up with more air or in case of water pumps. This is similar to the sucking action of a straw.

CIRCULATION OF MONEY

Name of the Participants: Archit, Rushik Patel, Ankit.



The project depicts the circulation of money in various circles across the country, Functioning of RBI and other commercial establishments including commercial banks. The RBI is one organization which circulates the money, controls money supply, receives the money back from banks and the tax department.

AUTOMATIC RAILWAY GATE CONTROL

Name of the Participants: Punit, Naman, Aman, Arshi, Ayub, Shalu, Shivani, Sharad.



Automatic Railway Gate Control system is a simple and very useful device for us. Which help in automatically opening and closing the railway gate up on detecting arrival or departure of the train. In general, railway gates are opened or close manually by a gate keeper. The information about arrival of train for opening or closing of door is received from nearby station. To avoid the human intervention at level crossing, we need to automate the process of railway gate control.

E-BUSINESS

Name of the Participants: Aryan Pansari, Rohan.



The concept of this model is a comparison between traditional and e-business highlighting benefits of purchasing items online. Buying from shops or malls is a long, troublesome and time consuming process wherein the buyer has to actually move or visit certain places for purchasing; whereas, in online shopping the buyer needs to have a computer and an internet connection and without actually visiting the places the consumer can purchase and pay online.

LDR BASED SECURITY

Name of the Participants: Ankita, Anjali, Diksha, Shivani, Mona, Sumit, Vidur.



This security system controlled by an electronic eye project which is based on photo sensing arrangement. The proposed system uses a 14-stage ripple carry binary counter to sense the intensity of light using LDR. The o/p makes a relay and buzzer for the required action. This project is very useful to deter burglars from shopping mall, bank and jewellery shops etc. This project uses a light dependent resistor. When light falls on the LDR sensor, then the resistance of the sensor decreases, which lead to activate an alarm to give an alert to the user. This project is suitable in the application of providing security system for lockers, cash boxes which are found in the bank, shopping mall and jewellery shops.

METAL DETECTOR

Name of the Participants: Pickshy, Vikshit, Varun, Aman, Vishkarma, Simran, Aditya.



Metal detector is a very common device that is used for checking people, luggage or bags in shopping malls, hotels, cinema halls etc. To ensure that no one is carrying any metal or illegal things like gun, bombs etc. Metal Detector detect the presence of metals. It is a simple project, we can use this in our home to scan nails, metal scraps etc. which are not easily to spot by naked eye.

TRAIN TRACK FAULT DETECTOR

Name of the Participants: Anand Pratap Tiwari.



1. Inspired by the train accidents and mishappening due to problems on tracks eg cracks on the Tracks.
2. Detects the intensity of crack and alert the driver.
3. Can be equipped with battery during the night .
4. Can be equipped with solar power cells to supply power.

D.C DYNAMO MODEL

Name of the Participants: Saurabh, Neha, Vandana.



The electric dynamo uses rotating coils of wire and magnetic field to convert mechanical rotation into a pulsing direct electric current through Faraday's law of induction. A dynamo machine consists of a stationary structure called stator, which provides constant magnetic field and a set of rotation windings. This law creates an electromotive force that pushes electrons in the metal to create electric current in wire. An important development by Wild and Siemens was the discovery by 1866 that a dynamo could also bootstrap itself to be self-excited using current generated by the dynamo itself.

FUTURE MACHINE

Name of the Participants: Prashant Arya, Nitin.



1. Inspired by the case studies patents in hilly regions future ordinary ambulance cannot reach.
2. Three wheels with independent movement.
3. Vehicle is able to move on all terrains.
4. Can be operated by remote efficiently.
5. First aid facility possible in the capsule.

ST. CRISPIN'S SR. SEC. SCHOOL
BUS STAND, GURUGRAM

SHOE POLISHING MACHINE

Name of the Participants: Anand , Prashant , Nitin, Yogesh.



1. Inspired by day to day problems we have created a ware cost machine.
2. Camy forque motor with 4 directional rough brushing cloth.
3. Two pumps for pumping the liquid above the shoe.

SUCHETA MEMORIAL SR. SEC. SCHOOL
SECTOR-5, GURUGRAM

MAGENETIC LEVIATION TRANSPORT

Name of the Participants: Simarjeet singh, Yash Shrivastava, Garima, Santosh



As we all are aware that approx 5838000 accidents and accused per year only in USA to reduce these phenomenon we have made a car which stop automatically when some object come in front of them.

SUCHETA MEMORIAL SR. SEC. SCHOOL
SECTOR-5, GURUGRAM

SAVE RESOURCES WITH MODERN TECHNOLOGY

Name of the Participants: Lakshay, Aman Gupta, Surbhi, Tanya



The sensor based dustbin will detect the level of garbage. When the dustbin is filled with garbage, it sends a message to the Municipal Corporation Office indicating the need for replacement.

SUCHETA MEMORIAL SR. SEC. SCHOOL
SECTOR-5, GURUGRAM

SMART CITY INDUSTRIALISATION

Name of the Participants: Riya, karishkiti, Rachna, Deepa, Suman.



A smart city is build around its users and its main motive is to optimize the resources and promote sustainable development we have used solar panels here today we are just heading towards exhausting our resources we should try to move towards the utilization of non conventional sources of energy.

IMPORTANCE OF BANK

Name of the Participants: Simran, Monika, Nancy, Kanika, Sapna, Mohini.



A bank is a financial Institution that accepts deposits from the public and creates Lending activities can be performed either directly or indirectly through capital markets. Due to their importance in the financial stability of a country, banks are highly regulated in most countries. Most nations have institutionalized a system known as fractional reserve banking under which banks hold liquid assets equal to only a portion of their current liabilities. In addition to other regulations intended to ensure liquidity, banks are generally subject to minimum capital requirements based on an international set of capital standards, known as the Basel Accords.

ADVERTISING (UNDER MARKETING)

Name of the Participants: Monika, Gunjan, Radhika, Tannu, Himanshi.



Marketing is the bridge between the product and the customer. A marketer and uses the four P's -- product, price, place, and promotion -- to communicate with the consumer. Promotion is a combination of all forms of communication to the customer, including advertising and public relations. The marketer must choose which is the best form of promotion for the target audience, so he or she will develop a marketing plan.

HYDRAULIC ROBOTIC HAND

Name of the Participants: Vaishali, Anshika, Sakshi, kapil, Vikas.



The project is a model of a typical robotic arm. The model has been made to illustrate the growing popularity and use of robots and robotic arms is almost all fields like manufacturing, medical fields, automobile industry etc. The basic principle on which the whole project is based is hydraulics, which takes the application of fluids to transmit force or pressure from one point to other. The same project can also be made by using the principle of pneumatics but the cost would be very high in that case. So, keeping in mind the cost and the facilities available, we have created a cost effective design of hydraulic robotic arm. The robotic arm takes the advantage of three pairs of syringes acting as cylinders containing fluid i.e. water to transmit pressure. The application of force is controlled by using three levers to which the pistons are attached. Now, talking about the degrees of freedom of the arm, we can say that it has three degrees of freedom which are as follows: Vertical up and down motion of the arm.

INDUSTRIAL NITROGEN FIXIATION

Name of the Participants: Harshita, Ishika.



Industrial fixation under great pressure, at a temperature of 600° C and with the use of a catalyst atmospheric nitrogen and hydrogen (usually derived from natural gas or petroleum) can be combined to form ammonia.



SGT UNIVERSITY

SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY
(UGC Approved) Gurugram, Delhi-NCR

EDITORIAL



The Handbook of Projects, Synergy 2017, the Annual Technofest forms the Architectural Ornament originating from the Solidarity and Strength of this University over the past five years. It aspires us to surge our energies in our ever longing pursuit for astounding excellence.

This marvel edition completed under the guidance of Dr. M.S. Sidhu, Dr. Suma GN & Dr. Joginder Yadav is meticulously designed by Mr. Ranbir Singh. The editing, formatting has been a cumulative effort of Dr. Shourya Tandon, Dr. Bharti Raina, Dr. Reshu Madan, Dr. Shefali Phogat, Dr Sarju Devi, Dr Usha, Student Outreach Team and Audio-Visual Team.

