

List of Undergraduate Project

2014-15

Group No.	Title	Required Knowledge	Required tools	Student	Project Guide	Over View
1	DESIGN AND FABRICATION OF SOLARMETER	Solar panel and solar power measurement	Hardware	Prithvi Raj Singh Shivam Gupta Yash Mathur	Brajesh Kumar Tiwari	Study of solar power and also for Solar power measurement.
2	WIRELESS ELECTRICITY TRANSMISSION	Knowledge of electromagnetic induction and electromagnetic wave	Hardware	Milind pandey Amishi gupta Ashish kumar	Prof. Pradeep Katariya	Transmission of electricity without any cable or wire .by using concept of electromagnetic induction and resonance.
3	DESIGN OF MICRO HYDRO POWER PLANT	Knowledge of power generation , network analysis and measurement instrument	Hardware	Aachal Jindal Abhishek Kumar Abinav Tripathi	Prof. Pradeep Katariya	this project is to design and build a micro hydro electric power system for use in rural parts of India which do not currently have power, but do have access to streams and small waterfalls
4	AUTOMATIC COST EFFECTIVE PHASE SELECTOR	Knowledge of phase selector, Knowledge of micro controller, knowledge assembly language programm, knowledge of electronics	Microcontroller Programmer , hradware	ASHISH KUMAR GUPTA, GURPREET SINGH CHANDAN SINGH,	ARUN KUMAR	The basic aim of the design and implementation of automatic phase selector is to demonstrate how contactors can be used to switch in between three lines or phases e.g "RED, YELLOW AND THE BLUE PHASE" without interfering with the contacts.
5	DESIGN OF FOLDABLE SOLAR PANEL KIT	Design equation of solar panel & charge controller	MATLAB	Amisha Patel Deepika Mishra Shipra Singh	Prof. Ravi Gupta	To develop a foldable solar panel of about 200 watt in foldable form
6	PROJECT ON DESIGN AND FABRICATION OF STATIC MHO RELAY	Knowledge of electrical power system, Different protection schemes of power systems and Electromechanical MHO Relay	Hardware tools for assembling.	Akash Kumar Kapil Khauneesh Saigal Mohit Mittal	Prof. AK Sharma	Assembling of static MHO relay will be done by using various components
7	MAXIMUM DEMAND CONTROLLER	Required Knowledge : Switch gear and protection, Electrical and Electronics measurements, Control Systems	Hardware	Dheeraj Mishra Dheeru Narnaulia	Prof. Masood Rizvi	It is a device that predicts the demand and intelligently trips/restores load based on the load prioritiesMD control is very important because the utility charges the user not only for the energy consumed, but also for the maximum demand recorded, irrespective of energy consumed (as per two part tariff). Hence, in order to reduce the energy cost, it is essential to control the maximum demand.
8	STUDY AND ANALYSIS OF SINGLE PHASE FRACTIONAL HORSEPOWER ASYNCHRONOUS MACHINE	Knowledge of single phase asynchronous machine and their vector analysis	MATLAB Software	Anamika Sharma Anubha Jain Ayushi Jain	Brajesh Kumar Tiwari	Performance Analysis of single phase fractional horse power asynchronous machine using vector control method.
9	STUDY OF THREE PHASE APPLIANCE PROTECTOR SYSTEM USING ICNE555	Concept for protection of electrical three phase appliances	MATLAB initially. May create hardware.	Manali Singh Abhishek Kumar Kushwaha Abhishek Kumar Pandey	Brajesh Kumar Tiwari	Used for three phase appliances protection
10	PROJECT ON DESIGNING OF PWM BASED INVERTER	Basic knowledge of Power Electronics Switches	Hardware, MOSFETs Transformer lcs	Pankaj Kumar Yadav Prateek Srivastava Sandeep Pandey	Prof. Rajiv Kumar Mehta	Controlling of voltage and reduction of lower order harmonics by Pulse Width Modulation

11	MICROCONTROLLER BASED LPG GAS LEAKAGE DETECTOR USING GSM MODULE.	Knowledge of physics, Chemistry, Material science, instrumentation and sensors.	MATLAB initially. May create hardware	ATUL RANJAN BABALU SONKAR ANKIT SOOD	Prof. Ameer Faisal	LPG Gas Detector is an analytical device used for the detection and identification of mixtures of organic compounds of gas components in the air.
12	BRAKE FAILURE INDICATOR FOR FOUR WHEELERS	Electrical and Electronics measurements, Control Systems, OPAMS, Microcontroller	Hardware	Anant Kumar Varshney Kush Singh Mohit Kumar Yadav	Prof. Masood Rizvi	his devices senses the chance of a brake failure by monitoring the brake system and raises the alarm
13	FABRICATION AND DESIGN OF STREET LIGHT USING MICRO CONTROLLER	Basics of microcontroller		Abhay Prataap Singh Anuj Kumar Azad Mohd. Sharique Raza	Prof. Anmol Gupta	in this hardware project students will make street light system automatic, sense based system which will run according to traffic frequency.
14	SMALL SCALE POWER GENERATION FOR HOUSEHOLD PURPOSE IN RURAL AREAS	basics of electrical machines, Drives	Hardware	AVTAR SINGH ARORA. LOVE JAIN MANAV ATREY	PROF. SWATI SINGLA	Small power is a renewable and clean energy option in modern times for electricity generation. Energy generated from such sources can be used for low power applications.
15	SOLAR INVERTER	Knowledge of critical component in a solar energy system, converts and solar panels.	MATLAB and Hardware of solar panel.	ANIKET PRATAP SOLANKI ANKIT DUBEY NITESH PRIYADARSHI	Prof S K Tripathi	Solar Inverter is a critical component used in any PV system where alternative current (AC) power output is needed. It converts direct current (DC) power output from the solar arrays or wind turbine into clean AC electricity for AC appliances. Inverter can be used in many applications. In PV or solar applications, inverter may also be called solar inverter.
16	LABVIEW BASED SPEED CONTROL OF DC MOTOR USING PID CONTROLLER	DC motor, Chopper, Power Electronics, Controllers	Simulation model in MATLAB.	Dileep kumar Shaurya varendra tyagi Mazhar hussain	Prof. Ravi Gupta	D.C motor is considered as a SISO (Single Input and Single Output) system which has torque/speed characteristics and is compatible with most mechanical loads.
17	POWER SAVING SOLAR STREET LIGHT WITH FOG LIGHTS	Fog Sensor, Solar Module etc.	Microcontroller Programmer	Arun Kumar Ranjeet Singh Verma Vipin Yadav	D. Blandina Miracle	Being an energy saving era, it is prior to save energy effectively. The project explains how the energy can be saved from the street lights through effective management. The key objective is to design an intelligent system that takes decisions for luminous control (ON/OFF/DIM) considering the light intensity during day and night simultaneously. System enables anti-thefting of power and it is easily adoptable to the present street lights using single computer module. The intelligent system is suitable for solar cell installations.
18	GSM BASED STREET LIGHT AUTOMATION	Micro controller, GSM modem, control circuitry, electrical devices.	MATLAB, JAVA	Rishabh Saxena, Saurabh Singh, Tanmay Srivastava	Shariz Ansari	As we have suggested that the system is built to provide Remote access to Street Lights by accessing them just through a server. The system is thus built to save the power consumption of the area under the system. This power can be diverted to different areas under load shedding and attempt to reduce the problem of load shedding can be achieved.
19	IDENTIFICATION OF PHASE SEQUENCE IN THREE PHASE SUPPLY.	Micro controller, GSM modem, control circuitry, electrical devices. LCD, Energy meter	MATLAB, JAVA	Kaavya Sah, Kishan Kumar, Shivank Bhatnagar	Shariz Ansari	In this project, we propose a system which measures the current consumption unit through IR sensor unit.
20	INDUCTION MOTOR DRIVING USING MULTILEVEL INVERTER FOR VARIABLE LOAD TORQUE OPERATION.	Knowledge of induction motor, Knowledge of multilevel inverter, Knowledge of variable speed drive, Knowledge of MATLAB simulation	MATLAB	SHUBHAM CHAUDHAR, YOGESH SAHU TARULIKA JAIN,	ARUN KUMAR	Our main focus is to control the speed of an induction motor by using multilevel inverter using MATLAB simulation

21	FOOD SPOILAGE DETECTOR	Knowledge of physics, Chemistry, Material science, biology, instrumentation and sensors	MATLAB initially. May create hardware	SURENDRA K VARUN KUMAR SINGH YAGYA DEO	Prof. Ameer Faisal	Food Spoilage Detector is used for identification of Food Spoilage. Each food species has unique and distinctive odors. This system consist multi-sensor gas array which detects gas through an increase in electrical conductivity when reducing gases are absorbed on the sensor's surface.
22	SPEED CONTROL OF DC MOTOR USING PWM METHOD	Knowledge of speed control of DC Motor. Knowledge of Power Electronics and MATLAB	Hardware	Disha Singh Anamika Singh	Alok Kumar Pandey	PWM technique is explored in controlling of DC Motor
23	MODELLING & SIMULATION OF PHOTO VOLTAIC ARRAY AND ITS ANALYSIS UNDER PARTIAL SHADING CONDITIONS	Knowledge of Solar photovoltaic system. Knowledge of Electrical and electronics engineering. Knowledge of Matlab Simulink	MATLAB	SANTOSH KUMAR SHAKYA VISHAL KUMAR POPINDAR	PROF. MOHD. FAISAL JALIL	when a solar photovoltaic array is under partial shading (non-uniform insolation) conditions than there will be large power losses in the array. Under partial shading conditions in the array there exist multiple peaks in power-voltage characteristics
24	RFID BASED AUTOMATIC CHALLAN SYSTEM	Knowledge of Radio Frequency Identification technology basics.	MATLAB and Hardware to develop the model.	PARAMJEET SINGH KALER SHEETAL SINGH SHUBHANGI SINGH	Prof S K Tripathi	Basic idea of our project is to develop the automatic challan system that can check for signal break by any vehicle. The RFID reader reads the information like vehicles number and automatically send a report to the owner of vehicles and simultaneously an information is given on the site itself through LCD. Radio-frequency identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders.
25	SPEED CONTROL OF BLDC MOTOR USING MATLAB/SIMULINK	Knowledge of physics, material science, electrical engineering materials, power electronics and power system.	MATLAB/SIMULINK initially. May create hardware	Jitendra Kumar Mohit Sharma MD. Samin	Prof. Swati Singla	Controlling of BLDC motor through DC-DC converters.
26	SOFT START OF INDUCTION MOTOR USING PWM TECHNIQUE.	Knowledge of Induction Motor and its control	MATLAB	Anil Kumar Prateek Chaturvedi	Alok Kumar Pandey	Starting of induction motor using soft starters.
27	SPEED CONTROL OF DC MOTOR USING CHOPPER	DC motor, Chopper, Power Electronics, Controllers	Simulation model in MATLAB.	Paras kumar sengar Vipin kumar gaurav Vijay singh	Prof. Ankit Singhal	In this controlling DC motor speed using Chopper as power converter and PI as speed and current controller is investigated mechanical loads.
28	DUAL MODE DC MOTOR	Knowledge of principles of Induction Motor, Working Principles of DC Machines, Motor Windings, Mixed Mode of Winding and Laminations	Hardware	SHUBHRA UTTAM NISHTHA YADAV RADHIKA GARG AYUSH SRIVASTAVA	PROF. RAHAT ULLAH KHAN	This project is related to the Dual Mode of operation of Single DC Motor applicable in Electric Vehicles and also recommended for PV Cell operated electric vehicles, Off-road and On Road Vehicles.
29	SMART STREET LIGHTING SYSTEM USING SMART SPEED BREAKERS	Basics related to alternator, as well as some basic concepts of mechanical engg.		Pratish Kumar Das Rishabh Saxena	Prof. Anmol Gupta	in this hardware project students will make street light system automatic and use the electricity that will be generated with the help of smart breakers
30	AUTOMATIC IRRIGATION SYSTEM USING GSM	Knowledge of Microcontroller op-amp.	Hardware	Parag Gupta Rahul Pandey	Prof. Anmol Gupta	In this hardware project students will use smart sensors for Irrigation purpose

31	SOLAR INVERTER USING MICRO CONTROLLER	Knowledge of physics, Material science, electrical engineering materials, power electronics and power system.	Hardware	Abhishek Shukla Ayush Khare Kartikey Singh	Prof. Suneel Kumar	Solar Inverter converts the variable DC output of a PV solar panel into a utility frequency AC that can be fed into a commercial electrical grid or used by a local, off-grid electrical network. In this project solar inverter is designed and performance is evaluated.
32	SPEED CONTROL OF INDUCTION MOTOR USING STATIC KRAMER DRIVER	Knowledge of Induction Motor, operating Characteristics of motor and Different speed control strategies	MATLAB initially. May create hardware	Shubham Gupta Ankita Mittal Mohit Kumar Yadav	Prof. AK Sharma	Various schemes of speed control will be studied and most efficient method will be implemented on the machine for wide range of speed variation
33	OPTICAL FIBRE BASED HOME SECURITY SYSTEM (PROPOSED)	Knowledge of Micro-controllers, Sensors & Hardware Preparation is required.	Hardware	Harshit Samadhiya Jogendra Singh	Prof. Yaduvir Singh, Dr. Yatendra Chaturvedi	This project gives a home security system with GSM interface. so you can get sms alert from your home when the security fails. The system has 1 motion sensor, 2 magnetic sensor for doors and 1 temperature sensor. The whole system is controlled by at mega8 microcontroller. It continuously reads the sensors and if any of the sensor fails then it will send an SMS to the house owner.
34	3-PHASE INVERTER USING MOSFET	Knowledge of physics, material science, electrical engineering materials, power electronics and power system.	Hardware may be simulated	Ankit Dubey Vivek Mishra Varun Awasthi	Prof. Suneel Kumar	In this project, a 3-ph inverter is designed using MOSFET for the conversion of DC into variable AC which can further be used for controlling purposes.
35	GSM BASED TRACKING AND MONITORING SYSTEM FOR VEHICLES	knowledge of GSM	programming of microcontroller 8051, AVR	Kuldeep Ojha	Prof. Ruchika Singh	Vehicle Tracking System is the technology used to determine the location of a vehicle using different methods like GPS and other radio navigation systems operating through satellites and ground based stations. Vehicle information like location details, speed, distance traveled etc. can be viewed on a digital mapping with the help of a software via Internet.GSM based tracking and monitoring of vehicles is done with the microcontroller programming.
36	IRRIGATION MANAGEMENT AND POWER CO GENERATION.	Knowledge of Electrical and electronics. Knowledge of basic electric energy generation system. Some knowledge of current energy demands	Hardware	JATIN SINGH, SHIKHAR GOEL, SHIVAM MISHRA	PROF. SWATI	Generation of energy using renewable energy resources for providing energy in rural areas.
37	REAL TIME STUDY AND ANALYSIS OF DUAL MODE OPERATED DC MACHINE.	Knowledge of principles of Induction Motor, Working Principles of DC Machines in Series and Separately Excited Modes, Motor Windings. Methods Of Starting of DC Series Motor and Separately Excited Motor	Hardware	MOHD IMTIAZ MOHD KASHIF PRATHAM AGGARWAL	PROF. RAHAT ULLAH KHAN	In this project a Brushed DC Motor is Designed for partial and full mode of Input and Output Electrical Power , specially for solar based applications.
38	AUTOMATIC STREET LIGHT CONTROL SYSTEM USING LDR AND MICROCONTROLLER.	Basic and circuit operation knowledge of IC, timer, voltage control unit, transformer etc for hardware development.	MATLAB and Hardware to develop the model.	NITISH KUMAR SAGAR AGARWAL SHASHANK SHEKHAR RAJ	Prof S K Tripathi	Automatic Street Light Control System is a simple yet powerful concept, which uses transistor as a switch. By using this system manual works are 100% removed. By using this system energy consumption is also reduced.
39	MODULATION AND SIMULATION OF SOLAR PHOTOVOLTAIC ARRAY UNDER DIFFERENT CONDITIONS.	Knowledge of Solar photovoltaic system. Knowledge of Electrical and electronics engineering. Knowledge of Matlab Simulink	MATLAB	AAKANKSHA PANDEY SUDHA SURAJ RAI	PROF. MOHD. FAISAL JALIL	The performance of a solar photovoltaic array (SPVA) is dependent upon the temperature and irradiance level and it is necessary to study the characteristics of photovoltaic (PV) array.
40	HOME AUTOMATION USING DTMF TECHNOLOGY.	Knowledge of image processing and MATLAB.	MATLAB	Pintoo Kumar Sumit Garg Prakhar Chaturvedi	PROF. PRIYANK BHARDWAJ	DTMF remote appliance control system using mobile phone.

41	LOAD FREQUENCY CONTROL OF MICRO GRID	Knowledge of physics, Material science, electrical engineering materials, power electronics and power system.	MATLAB/SIMULINK initially. May create hardware	Satyendra Kumar Yadav Satish Kumar Rohan Kumar	Prof. S. K. Tripathi Prof. Nitish Verma	Incorporating the renewable power into main grid
42	AUTOMATION FOR THERMAL PROTECTION OF TRANSFORMER.	Knowledge of microcontrollers and transformer.		Swadesh Kr. Gautam Vaibhav Chaudhry	PROF. PRIYANK BHARDWAJ	PROTECTION OF TRANSFORMER.
43	ECG ANALYSIS USING ADOPTIVE NEURO FUZZY INTERFERENCE SYSTEM	Tele-health, ECG, MATLAB, Android	MATLAB, Android	Shivam Sharma Anugya Verma	Dr. Neeraj Kumar Gupta	ECG signal from the patient, sends it through the Internet and stores it into a hospital server. The system also processes the ECG using MATLAB to alerts the doctor and hospital staff by sending email and SMS message if any abnormality is detected.
44	MICRO CONTROLLER BASED BODY RELAXING MACHINE	Programming of Microcontroller	Microcontroller /Microcontroller Programmer	AVINASH KUMAR RAWAT JONISH KUMAR MIRZA MOHD. RASHID	PROF. SWATI SINGLA / Prof. Jyoti Srivastava	The Mind Body Harmonizer is an experimental device similar to what is known in the USA as "Cranial Electrotherapy Stimulation" or CES. In Europe it is called "ElectroSleep". CES is used for treating depression, anxiety, sleep problems, pain and drug addiction over the last 50 years in the USA. The FDA report of 2012 on CES also shows a small but repeatable IQ increase of about 5 to 15 points with regular use. As a result it has become popular in the USA for university students.
45	AUTOMATIC POWER GRID CONTROLLER	Knowledge of Electrical and electronics. Knowledge of microcontroller. Some knowledge of relays and their interfacing with other units.	MATLAB, MICROCONTROLLER	ADARSH SHUKLA AJAY KUMAR AMAR KAUSHAL	Prof. Sheetal Singh	Controlling all the appliances connected to the power grid from PC.
46	MICROCONTROLLER BASED SMART HOUSE	Programming of Microcontroller	Microcontroller /Microcontroller Programmer	ABHINAV KHANNA ASHUTOSH YADAV	PROF. SWATI SINGLA / Prof. Jyoti Srivastava	In this hands on Real World Engineering project the students will program a simple microcontroller to measure temperature and control functions such as heaters or coolers in a prebuilt smart house. The house is made of a foam shell electric heater, thermoelectric air conditioner and an attic fan with vent.
47	PUNDER FREQUENCY LOAD SHEDDING USING ADAPTIVE NEURO FUZZY INTERFERENCE SYSTEM	Intelligent Load Shedding (ILS), Power System Transient Stability,	MATLAB	Shivam Bhatti Siddharth Bhatnagar Saurav Chopra	Dr. Neeraj Kumar Gupta	Load shedding is a process by which the electrical authority handles the dearth of the electrical power being consumed by the society. Shedding is done to minimize the load being consumed by the society through several substations which are connected to the main power station . An intelligent load shedding system can provide faster and optimal load relief by utilizing actual operating conditions and knowledge of past system disturbances.
48	SPEED CONTROL OF SLIP RING INDUCTION MOTOR USING ROTOR RESISTANCE.	Speed control of induction motor, Power Electronics, Controllers	Simulation model in MATLAB	Ashish kumar	Prof. Ankit Singhal	At the time of normal running of induction motor, for a constant torque load, Slip is proportional to rotor resistance. Therefore we can also control the speed of the Induction motor for a given load.
49	PID BASED D.C. MOTOR SPEED CONTROL	Knowledge of Electrical and electronics. Basic knowledge of PI, PD and PID controller. Also have knowledge about DC machines	MATLAB, EMBEDDED SYSTEM	SAHIL JAIN DEEPANSHU SHARMA	PROF. SWATI	Controlling the speed of DC motor using different controllers.