

Honourable Founder Chairman



Dr. M.S. Ramaiah, FIAE

(1922 -- 1997)

"A True Karma Yogi"

M.S. RAMAIAH INSTITUTE OF TECHNOLOGY

(Autonomous Institute, Affiliated to VTU)

BANGALORE



M.S. RAMAIAH INSTITUTE OF TECHNOLOGY (MSRIT) is a self-financing institution established in Bangalore in the year 1962 by the industrialist and philanthropist, Late Dr. M S Ramaiah. MSRIT, as well as 28 other reputed institutions offering Medical, Dental, Pharmacy, Hotel, and Business Management and Legal Education are managed by the Gokula Education Foundation (GEF). The mission statement of GEF is "To deliver education and health for the betterment of mankind". All eligible Engineering Departments offering Bachelor degree programmes have been accredited by NBA. MSRIT is one of the few institutes with faculty- student ratio of 1:15 and achieves excellent academic results. The institute is a participant in the Technical Education Quality Improvement Programme (TEQIP), an initiative of the Government of India. All the departments are full with competent faculty, over 100% of them being postgraduates or PhD holders. Some of the distinguished features of MSRIT are: State of the Art Laboratories, Individual computing facility to all faculty members, Campus-wide networking connecting all 2000 systems to the net. All research departments are active with sponsored projects and more than 160 scholars are pursuing PhD. The Centre for Advanced Training and Continuing Education, Centre for Research and Industrial Consultancy, and Entrepreneurship Development Cell have been set up on campus. MSRIT has a strong Placement and Training Department with a committed team, a fully equipped Sports Department, Large

Air-conditioned Library with over 1, 50,000 books with subscription to more than 300 International and National Journals. The Digital Library subscribes to several online e-journals like IEEE, JET etc. MSRIT is a member of DELNET, and AICTE - INDEST Consortium. MSRIT has a modern auditorium, several hi-tech conference halls, all air-conditioned with video-conferencing facilities. It has excellent hostel facilities for boys and girls. MSRIT Alumni have distinguished themselves by occupying high positions in India and abroad and are in touch with the Institute through an active Alumni Association. MSRIT obtained Academic Autonomy for all its UG and PG programmes in the year 2007. VTU & UGC have conferred the prestigious status in the year 2007. MSRIT has celebrated its 50th year of existence. The year 2011-2012 was declared as Golden Jubilee year and the yearlong celebrations were planned with various programmes like International and National Conferences, Technical Lectures, Quizzes, Alumni meetings, Sports events and Cultural activities.

Chairman Message



I am delighted to observe that **PRADARSHANA 2017** – Open Day project Exhibition, a dazzling event of MSRIT is being conducted. At this juncture, I would like to reiterate that academic excellence, global relevance and contemporaneous curriculum continue to be the strong pillars of MSRIT. With every stepping stone in the journey of our excellence, our responsibility towards society also increases.

I wish all the very best to the students and the staff of MSRIT. I extend my happiness that **PRADARSHANA 2017** serves as a platform for the students showcasing their innovative and novel project works.

Best Wishes

Dr. M.R. Jayaram

Chairman,
Gokula Education Foundation

Vice Chairman



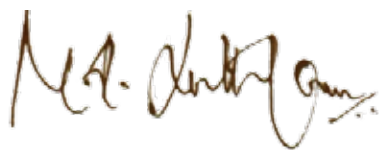
I am pleased to learn that M S Ramaiah institute of technology (MSRIT) is organizing **PRADARSHANA 2017**, - An Open Day project Exhibition. PRADARSHANA has been a unique experiment which encourages the young and the aspiring minds to think innovate and excel in their chosen domain and one can safely say the experiment has been successful.

We at RIT have been continuously channelizing our efforts towards development of essential infrastructure, technology, curriculum and extracurricular activities. Our objective is to instill in our student's confidence, self-motivation, research and problem solving skill sets, by imparting value added education.

As we look into the future, one thing is certain - informative knowledge. Informative knowledge will be a key resource and will be highly sought after in India and around the world.

We at RIT prioritize knowledge and discipline and believe in application of the same for societal progress and upliftment.

I wish to congratulate all the students who have strived hard on their innovative projects to make this event a great success.



Sri. M.R. Seetharam

Vice-Chairman,
Gokula Education Foundation and Director,
M.S. Ramaiah Institute of Technology

Secretary Message



I am very glad that Ramaiah Institute of Technology is organizing **PRADARSHANA 2017**, the annual Open Day Project Exhibition to be held on 9th and 10th of May 2017.

Our institution has been striving consistently to establish ourselves as pioneers in development and implementation of the next generation teaching and learning techniques and to promote individual excellence in the entire array of curricular, extra-curricular and cultural activities in our students while making them societally responsible.

PRADARSHANA relevant in this regard as it brings out the best in our students and gives a platform to showcase the same.

I wish to convey my felicitations to the faculty, staff and to all the participating students.

I wish PRADARSHANA 2017 all the success.

Best Wishes

Sri. M.R. Ramaiah

Secretary, Gokula Education Foundation and Director,
M.S. Ramaiah Institute of Technology

CE Message



M S Ramaiah Institute of Technology is happy to open its doors to its students, their parents, students from other seats of learning and members of the public to another occasion of **PRADARSHANA**. The event showcases the creativity and ingenuity of students of MSRIT. It will enthral the visitors to realize the talent in MSRIT.
I wish the event all success.

Best Wishes

Sri. S.M. Acharya, IAS (Rtd)
Chief Executive, GEF

Principal Message



It is indeed my pleasure to note that **PRADARSHANA**-Open Day project exhibition' of our institution is organized to exhibit the projects being carried out by our students.

One of the main challenges in engineering education is to help generate ideas that will benefit the society and to educate and train students to work in the field where they will be valued both for their specialized knowledge, and for their ability to research, communicate and solve problems.

PRADARSHANA serves this purpose by providing an opportunity to showcase the innovative ideas among the students from various disciplines and to engage and excel in confronting real world design problems every year. It provides a means for students to put to work various skills acquired in their undergraduate study, including project management, multi-disciplinary teamwork, design skills, and fabrication techniques. Students can demonstrate their creative skills in identifying real world problems, formulating alternative solutions, and systematically arriving at final designs that satisfy various professional standards and realistic design constraints.

I invite students, parents and common public to the Open Day Project Exhibition to witness the work done by our students and appreciate their efforts.

The faculty along with the staff members, students and organizers deserve my heartiest congratulation for taking this wonderful initiative forward. I wish that this event – PRADARSHANA 2017 achieves its intended purpose and wish a great success.

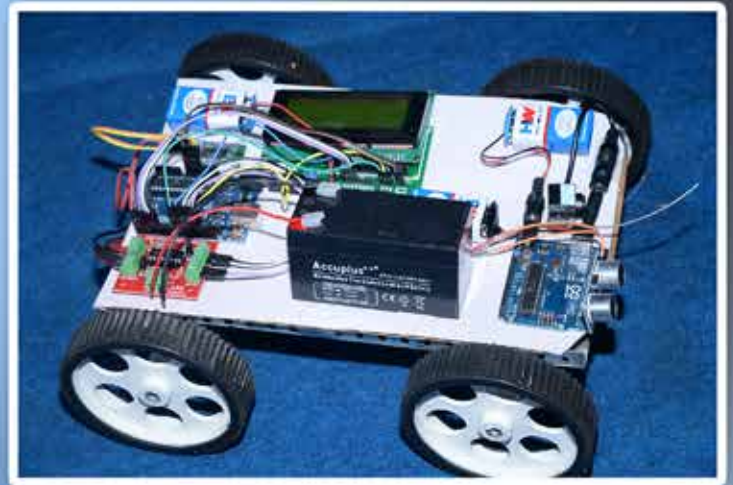
A handwritten signature in black ink, appearing to read 'N.V.R. Naidu', followed by a horizontal line.

Dr. N.V.R. Naidu
Principal, M S Ramaiah Institute of Technology

GLIMPSE OF PRADARSHANA 2016



GLIMPSE OF PRADARSHANA 2016



GLIMPSE OF PRADARSHANA 2016



GLIMPSE OF PRADARSHANA 2016



About the OPEN Day

The project exhibition will provide a unique opportunity for the students to showcase and promote their conceptual ideas and prototypes in front of some of the leading decision makers in the industry. Students from all the departments of MSRIT will be actively involved in this exhibition, showcasing their technical knowledge and innovative ideas for technical development. This exhibition will also see the involvement of angel investors and venture capitalists - people who can help the students realize the true potential of their ideas and give them a chance to take it to the next level.

The scope of this exhibition goes beyond what will be on display on the two days as the students are not only expected to present their technical prowess but also to come up with projects which can prove to be of great good for the society. MSRIT has always promoted such projects and will continue to do so in the future.

Apart from what the students will have to showcase during the OPEN DAY, the exhibition will also have upcoming projects and ventures from some of the big names in technology on display.

The event is expected to receive huge footfall as people from all across the city of Bengaluru will be coming to witness this exhibition along with several media personnel and dignitaries from various educational institutions in the city. Overall, the event is destined to be one of a huge stature and appeal with undergraduate students from various engineering disciplines showcasing their projects under one roof, with an aim to make it big!

Since it is conducted during the Open Day Event at MSRIT, public is also invited for the Event.

The Genesis of a New Realm of Possibility in MSRIT
Creating a common forum to Introduce students Innovation to
Early stage Funding agencies, which leads to students startups

M.S.Ramaiah Institute of Technology

(Autonomous Institute Affiliated to VTU)

OPEN-DAY Project Exhibition 2016

PATRONS

Dr. M.R. Jayaram,
Chairman, GEF

Sri M.R. Seetharam,
ViceChairman-GEF, Director- MSRIT

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Secretary- GEF, Director- MSRIT

Sri S. M. Acharya,
Chief Executive- GEF (Engg.)

Sri G. Ramachandra Murthy,
Chief of Finance, GEF

ADVISORY COMMITTEE

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Principal, MSRIT

Dr. T.V. Suresh Kumar,
Registrar (Academics), MSRIT

Sri Ramesh Naik S,
Registrar (Admn.), MSRIT

Organizing Committee



Department Coordinators

Sl. No.	Committee Name	Faculty Name
1.	Publicity/ Media committee	Co-ordinator: Dr. V. Ramachandra Murthy, Prof, Dept of Mathematics Dr. Annapurna Patil, Prof, Dept of CSE C.G. Raghavendra , Asst. Prof, Dept of E&CE Dr. Bharath S, Associate Prof, Dept of IEM Dr. Ahalya N, Associate Prof., Dept of Biotechnology
2.	Printing Committee	Co-ordinator: Dr. Shobha K.R, Associate Professor , Dept. Tele communication Dr. Siddaraju C, Asst. Prof., Dept. Mechanical Engineering Dr. S. Ajitha , Associate Professor , Dept. of Computer Applications
3.	Stage Committee	Co-ordinator: Prabha Ravi, Asst. Prof, Dept. of Medical Electronics Dr. Chandra Prabha M. N. Associate Professor, Dept. of Biotechnology Jyothilakshmi R. Asst. Prof, Dept. of Mech
4.	Proceedings committee	Co-ordinator: Dr S Seema , Prof. Dept. of CSE Dr. Mydhili K Nair, Prof. Dept. of IS&E Dr. Monica R Mundada, Associate Professor, Dept. of CSE

- Suresh Kumar K. R., Asst. Prof., Dept of .IS&E
Pradeep Kumar D, Asst. Prof., Dept. of CSE
Keshav Karanth, Student, Dept of .IS&E
5. Infrastructure committee **Co-ordinator:**
Dr. C K Narayanappa , Associate Professor, Dept. of Medical Electronics
Jyothi M R , Asst. Prof, Dept. of Civil engineering
J Sumalatha, Asst. Prof Dept. of Civil engineering
Jotirmay Chari, Associate Professor, Dept. of Architecture Department.
6. Food and hospitality committee Sagar J S , Asst.Prof, Dept. of Chemical Engineering
Prashanth Kambli, Asst.Prof in IS&E Department
7. Reception / Documentation **Co-ordinator:**
Dr. S. Ajitha , Associate Professor, Dept. of Computer Applications.
Prabha Ravi, Asst.Prof Dept. of Medical Electronics
Prashanth Kambli, Asst.Prof, Dept. of ISE committee
8. Photographs of Event Coverage **Co-ordinator:**
Dr.K.R. Phaneesh, Prof, Dept. of Mech =(i-Click)
Sandeep B.L, Asst.Prof in IS&E Department
Shreyas Somashekar, Student, Dept. of Mech

Dr. Lingaraju G M

Professor, ISE Department

Co- Ordinator (Pradarshana 2017)

ABSTRACTS

School of **Architecture**



Project Abstracts

2016 - 2017

TITLE	Automobile Industry	
SL.NO	USN NO.	NAME
1	1MS12AT041	Nitya Mohan
Mentor Name		INTERNAL GUIDE- Ar. Deepthi Reddy THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>An automobile industry is involved in producing and selling self-powered vehicles. It is primarily associated with- design, development, manufacturing and marketing of motor vehicles.</p> <p>The main objective of this project is to break away from the conventional industry design and provide an alternative approach to factory design. The secondary intent was to take up a topic that hadn't been dealt with in the previous semesters, thereby giving to learn about an unfamiliar subject.</p> <p>The focal point of the project is the manufacturing me an opportunity unit which caters to the core manufacture and production of four wheelers (Honda Cars- live site). An essential aspect is to concentrate on the architecture as much as the functional requirements of an automobile industry</p>		

TITLE	National Institute Of Design- A Multidisciplinary Approach	
SL.NO	USN NO.	NAME
2.	1MS12AT042	Niyathi C Nadagouda
Mentor Name		INTERNAL GUIDE- Ar. Shubi Sonal THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>The racecourse in Bangalore is one that was made during the British rule and till today has not been brought upto to the present standards of racecourses. The racecourse has a case to shift the present location. Hence, the thesis topic is a proposition on a new location on the outskirts of the city with state of the art facilities. It has a training Academy to bring out the best jockeys and trainers. The Academy also teaches people the art of riding, grooming and training a horse.</p> <p>It also has a 5 star hotel on the premises for guests which has a private view of the ongoing races. This topic was chosen to bring the racecourse upto an international level.</p>		

TITLE	Indian Institute Of Technology,Hyderabad	
SL.NO	USN NO.	NAME
3.	1MS11AT015	Bhavani R
INTERNAL GUIDE- Anuradha		THESIS COORDINATOR- Anuradha
<p>The development in science and technology can be achieved only by the means of high level of technical education. To develop in the field of science and technology, we need to improve and rework of our infrastructures, resources, and basic foundation of the infrastructures that is technical education. So to be developed in the field of science of technology, the field of technical education has to be made strong.</p>		

TITLE	A Retreat For Health And Rejuvenation	
SL.NO	USN NO.	NAME
4.	1MS12ATO43	Nupur S Gurjar
Mentor Name		INTERNAL GUIDE- Ar. Vishwa S THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>This health facility offers a wide range of facilities in ancient medicinal therapies while embracing modern diagnosis, addressing treatments that are a continuum of what nature has to offer; exploring “Panchabhoota” and the corresponding five senses of the human body. The proposal is situated in Udupi, Karnataka, with an abundance of medicinal plants , rich resources and a soothing environment enhanced by the adjacent Suvarna river, with the backdrop of the breathtaking Agumbe (western) ghats that overlook the center. Looking ahead into the future, the project tries to achieve ideas of Architectural Phenomenology that affect the mind, body and soul.</p>		

TITLE	Multi-speciality Hospital	
SL.NO	USN NO.	NAME
5.	1MS12ATO44	Pooja. H. S
Mentor Name		INTERNAL GUIDE- Ar. Ganesh Babu THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>This health facility offers a wide range of facilities in ancient medicinal therapies while embracing modern diagnosis, addressing treatments that are a continuum of what nature has to offer; exploring “Panchabhoota” and the corresponding five senses of the human body. The proposal is situated in Udupi, Karnataka, with an abundance of medicinal plants , rich resources and a soothing environment enhanced by the adjacent Suvarna river, with the backdrop of the breathtaking Agumbe (western) ghats that overlook the center. Looking ahead into the future, the project tries to achieve ideas of Architectural Phenomenology that affect the mind, body and soul.</p>		

TITLE	Cruise Terminal and A Hotel	
SL.NO	USN NO.	NAME
5.	1MS12ATO45	Prakrithi Sharma
Mentor Name		INTERNAL GUIDE- Dr.Prof. Sridhar Rajan THESIS COORDINATOR-Ar. Vishwas Hittalmani
ABSTRACT		
<p>Today, the cruise industry in India is mainly driven by international tourists, with most of the domestic tourists flying to Singapore and Hong Kong to embark on cruises. Presently, Mumbai and Kochi are the favoured ports of call in India for cruise ships.</p> <p>The main project idea is to have world class cruise terminal in Karnataka along with a ‘Karnataka village’ within the terminal and a resort.</p>		

TITLE	Urban Entertainment Centre	
SL.NO	USN NO.	NAME
6.	1MS12AT046	Prarthna M
Mentor Name		INTERNAL GUIDE- Ar.Jotirmay Chari THESIS COORDINATOR- Ar.Vishwas Hittalmani
ABSTRACT		
<p>The social and economic needs of an urban society are vast and need to be provided with a central node, congregation point, a hub where the urban society can come together for different activities and develop an urban consciousness. An urban hub will help in development of the urban setting and mindset of inhabitants in urban settlement. It creates a positive, holistic environment in urban setting. Urban Entertainment Centre can be defined as family-oriented entertainment destination. These centres combine shopping and recreation with entertainment to form an overall experience.</p> <p>The project, proposed in Bengaluru aims to serve as a node in the architectural thread of the city, to provide better entertainment and shopping facilities to tourists (both foreign and domestic), to reflect the community's local character and personality, to encourage interaction among a diverse cross section of public and to integrate open spaces with built spaces, yet providing a conducive community environment.</p>		

TITLE	Urban Entertainment Centre	
SL.NO	USN NO.	NAME
7.	1MS12AT047	Pratiksha J Kadur
Mentor Name		INTERNAL GUIDE- Ar. Deepthi Reddy THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>This is a world class venue for conventions, shows and celebrations designed to international standards with state of the art acoustics, lighting, connectivity and ergonomic seating. It contains multiple halls that can be used for different purposes. The convention centre will also have a business and media centre, a documentation hall and a studio. The aim of the thesis is to design unique spaces that reflect the city's culture, leaving visitors with a more authentic experience. To evolve a design with forms and spaces with distinct architectural characteristics focusing on space utilization and functions. This project deals with design which is well adoptable in terms of typology, function and climate conditions. The site is at New Town, Kolkata. It is a fast growing satellite city of residential and cultural hub.</p>		

TITLE	Sports Institute	
SL.NO	USN NO.	NAME
8.	1MS12AT048	Preethi Nandakumar
Mentor Name		INTERNAL GUIDE- Dr.Sridhar Rajan THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>Sports is an integral part of human evolution and it is required for the development of human society. Participation on a massive scale is one of the basic requirement for the promotion of sports in India. The main objective of this project is to cater to the deteriorating standards of sports in India by establishing an Institute with all the necessary standard infrastructure and facilities. Sports succeeds in uniting the people of different caste and creed, bringing human understanding, exchange of ideas and culture. They are the Institutions created by man to maintain and perpetuate society</p>		

TITLE	Film Institute And Studio	
SL.NO	USN NO.	NAME
9.	1MS12AT049	Priyanka Marupudi
Mentor Name		INTERNAL GUIDE- Ar. Vishwa S THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>Cinema and the Architectural Promenade, engages and addresses the complex and interwoven relationship between the virtual world of cinema and the built environment. The thesis questions whether the architectural promenade, enhanced by the cinematic use of sequence and montage, can create an enhanced and holistic experience for the users of a building and its accompanying site. This enhanced experience will aid in re-sensitizing the visitor to their surroundings within the realities of both the natural and man-made worlds. In creating a cinematically inspired architecture the program of the visual arts and film are shown to enrich, heighten, and embed meaning within the audience's experience as they interact with the project. These ideas will be examined through the program of a film school and studios.</p>		

TITLE	International Trade Centre	
SL.NO	USN NO.	NAME
10.	1MS12AT050	R.Shweta
Mentor Name		INTERNAL GUIDE- Ar. Kriti Bhalla THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>International Trade Centre is a commercial skyscraper which will be located on the once – glorious Kohinoor mills, Mumbai and will facilitate international trade in textile by providing a platform for the convergence of exporters and importers around the globe, thus keeping a reminiscence of the past. Looming large over the financial capital's skyline, it would be designed to offer a textile trade centre, a shopping mall, a convention centre, office spaces for MNCs and a business hotel.</p> <p>The International Trade Centre, located in the heartland of Mumbai, will act as a trading and networking place for people thereby transforming the cultural centre of Mumbai into an international commercial hub.</p>		

TITLE	Film Institute And Studio	
SL.NO	USN NO.	NAME
11.	1MS12AT051	Rajani .G
Mentor Name		INTERNAL GUIDE- Ar. Kriti Bhalla THESIS COORDINATOR-Ar. Vishwas Hittalmani
ABSTRACT		
<p>Fashion design is influenced by cultural and social attitudes, and has varied over time and place. In the past decade, the professional world of fashion in India has expanded to much more than the art of designing clothes. There is a need to build Centers of Excellence for fashion education and research and to provide practical field experience to the graduates.</p> <p>The main objective of this project is to design, orient and sensitize students towards understanding of fundamentals of fashion business: design, technology and management. It is an attempt to design a campus in Panchkula, Haryana which will have different styles, blending the functions, environmental research and technology in accordance with site's climate, landscape and cost, material.</p>		

TITLE	Mixed Use Development	
SL.NO	USN NO.	NAME
12.	1MS12AT052	Rakshita Kanekal
Mentor Name		INTERNAL GUIDE- Ar. Vishwa S THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>Mixed use development is an urban design approach to cities in developing countries. Most cities in the developing countries are urbanizing at a very fast rate. Smart growth is an alternative to urban sprawl, traffic congestion, disconnected neighborhoods, and urban decay. Economic locating of people near each other, near jobs, and near shopping, reduce travel time and transportation infrastructure costs. Compact, livable urban neighborhoods attract more people and business. Creating such neighborhoods is a critical element of reducing urban sprawl and protecting the climate. Public health Transit-oriented development can improve the quality of life, and encourage a healthier, pedestrian-based lifestyle with less pollution. It creates a socio-economic microcosm which is efficient, meets customer needs, and provides important economic linkages. A more interesting phenomenon is the evidence of variety within the same use, which often makes a more telling contribution to the vitality and attractiveness of developing cities. There are strong indications that mixed-use development can have a significant impact on environmental quality and appearance. In a developing metropolitan city like Bangalore, where the chosen site is located, this type of mixed use design is an integral part of future planning.</p>		

TITLE	Visual Arts Center	
SL.NO	USN NO.	NAME
13.	1MS12AT053	Ramya P. V
Mentor Name		INTERNAL GUIDE- Ar. Shubhi Sonal THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>Trends are changing on the Art scenes, both for the artist and art lovers in Bengaluru. The garden city being the third most populated city in India, has a greater demand for a common platform for art lovers to share and learn different forms of art. This project provides that common platform where the institution helps one to learn both traditional and modern approaches in various visual art forms and the galleries form the connecting bridge between artist and the art lovers. The main objective was to make a breathing campus. So simple building techniques are incorporated with innovative design approach.</p>		

TITLE	Bangalore Turf Club	
SL.NO	USN NO.	NAME
14	1ms12at054	Rhea.V.Gowda
Mentor Name		INTERNAL GUIDE- Ar.Vishwas Hitalmani THESIS COORDINATOR- Ar. Vishwas Hitalmani
ABSTRACT		
<p>The idea of constructing a Turf Club is primarily to promote and develop the equestrian sports in an environment that not only values a tradition but also the elite treatment of the same. In specific context to India, 6 Turf Clubs (Bangalore included) across the country exist today successfully with a good number of interested participants.</p>		

The motive is to provide these eager equestrians with a more intelligent structure that not only entertains but educates as much. While it is important to credit The Bangalore Turf Club for its years of service and active promotion and encouragement of the sport, there seems to be a desperate need for a more collaborative approach to the industry. It is most important to acknowledge the lifestyle, the luxury and convenience that accompanies the realization of this Industry before any actual planning. The essentials of this Turf club would be hospitality, Horse Racing equipment and well planned tracks, a collaborative community for Jockeys, Horse owners and business participants, facilities to hold a large audience during National and International events, medical center for in-house horses, a breeding and health maintenance department&Riding school to encourage the sport and train young enthusiasts.

TITLE	Multifunctional Tower	
SL.NO	USN NO.	NAME
15	1MS12AT055	Rohit Prabhu
Mentor Name		INTERNAL GUIDE - Ar. Waqar Abid THESIS COORDINATOR- Ar. VishwasHittalmani
ABSTRACT		
<p>High rise developments are multiplying throughout major cities thereby expanding popular urban neighbourhoods.A Multifunctional high rise has the potential to expand vertically as a neighbourhood grows by virtue of its modular installation innovating this: Socially- supporting the local economic conditions, Regionally- decreasing the building's development footprint, Environmentally- utilizing renewable building materials.This Elevated Nest, located in the nucleus of Hyderabad, will act as a substantial shelter and networking space for people. Thus transforming the capital into an international focus for commerce and executive living.</p>		

TITLE	River View Mixed Use Development	
SL.NO	USN NO.	NAME
16	1MS12AT056	Sagar.S.Mahajanshetti
Mentor Name		INTERNAL GUIDE- Ar.Sudha Kumari THESIS COORDINATOR- Ar.Vishwas Hittalmani
ABSTRACT		
<p>The proposed project locates in the new capital city of Telangana (Amravati).The proposal of smart city for the new state brings in new innovative energy efficient construction ideas and set an example for the future cities.The project holds the responsibility to stand tall with its power of sustainability and context to the local surrounding and culture .The main strength lies in the rich cultural background of Amravati.</p> <p>Necessity of Mixed Use Development in India:</p> <p>The concept of LIVE, WORK, PLAY stands as an important theme for the present generation. With the increase of vehicles in India, leading to environmental degradation, the thoughts must be put up as an architect to bring about a solution which makes the citizens to make maximum use of public transport. Major metropolitan cities in India are on a verge of dead state due to lack of proper planning. Therefore the concept of mixed use, brings about the unity of LIVE and WORK and set an example for a better nation.</p>		

TITLE	Mixed Use Tower	
SL.NO	USN NO.	NAME
17.	1MS12AT057	Sanjana Shetty Y
Mentor Name		INTERNAL GUIDE- Ar. Shubhi Sonal THESIS COORDINATOR-Ar. Vishwas Hittalmani
ABSTRACT		
<p>Urban migration to urban centers looking for work, leaves cities short on affordable housing, transport links and can lead to inner city poverty or urban sprawl and the increasing demands for urban spaces pushed the environment to grow vertical and compact.The high rise mixed use, consisting of residential and commercial spaces, offers solutions to both problems by maximizing the number of people that can live and work on a fixed amount of available land helping reduce traffic on roads and also solve space problems.It helps deal with the increasing land prices and expansion of cities as well.</p> <p>The site for the project is in Yelahanka, Bengaluru.Bengaluru has witnessed a huge growth in its population between years 2001 to 2011. Population in Bangalore is growing at a very fast pace and to accommodate the growing population while preventing overcrowding and expansion of the city, mixed use towers are a suitable solution.</p>		

TITLE	Sports Hub	
SL.NO	USN NO.	NAME
18.	1MS12AT058	Sanmathi D Prasad
Mentor Name		INTERNAL GUIDE- Ar. Lavanya Vikram THESIS COORDINATOR- Ar.Vishwas Hittalmani
ABSTRACT		
<p>Character, value, physical and mental strength are all challenged in a short period of time through sports. In order to encourage India towards sports, a place, an arena should be designed that allows like-minded people who share their passion for sports, for their training, practice and interaction.The aim is to design a sports village with training centres having spaces for various indoor and outdoor sports stadiums, gallery spaces, practice spaces, fitness centres and to have other beneficial facilities so as to promote its necessity.</p>		

TITLE	The Health Resort	
SL.NO	USN NO.	NAME
19.	1MS12AT061	Shea K George
Mentor Name		INTERNAL GUIDE- Ar.Waqar Abid THESIS COORDINATOR- Ar.Vishwas Hittalamni
ABSTRACT		
<p>Health Resort is a place of luxury, comfort and relaxation with peace of mind. One feels relaxed and peaceful in natures lap. Living and healing with the help of natureis the concept of resort.</p> <p>The project aims to create a space that is an escape from the frenzied hospital atmosphere, a home of silent reflection to regain a sense of peace. The challenge is to develop an environment for healing in the 21ST century – an era focusing on a preventing, protection and holistic approach a solution that incorporates service integration, cost effectiveness, efficiency and increased ease of use.</p>		

Transit Hub		
TITLE		
SL.NO	USN NO.	NAME
20.	1MS12AT062	Sheethal. R
Mentor Name		INTERNAL GUIDE- Ar. Sudha Kumari THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>Transportation is one of the main objective of land use planning. Development of any town,or city is strung on principle of transport corridors.Architecture is the main medium that imparts to the traveler a sense of well-being and the level of comfort with the surroundings. Daily commuting can be made more pleasant through the artistic impression of a transportation system. The thesis aims to create one such transport hub. Bengaluru, being one of the fast developing city requires this concept.</p>		
University Of Agricultural Sciences		
TITLE		
SL.NO	USN NO.	NAME
21.	1MS12AT063	Shikhi Bhat .H.S.
Mentor Name		INTERNAL GUIDE- Ar. Sudha Kumari THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>Agriculture, with its allied sectors, is the largest livelihood provider in India. Despite the overwhelming size of the agricultural sector, yields in India are generally low compared to international standards. There is a need to build Centres of Excellence for agricultural education and research and to provide practical field experience to the graduates.</p> <p>The main objective of this project is to establish state-of-art infrastructure in a sustainable campus with interactive spaces, well-equipped laboratories, extensive farmlands and operational research management system aimed at establishing dynamic linkages between education and scientific development in and around the district of Kodagu and for addressing emerging challenges for livelihood security and sustainable development.</p>		
Performing Arts Academy		
TITLE		
SL.NO	USN NO.	NAME
22.	1MS12AT064	Shreya Balaji
Mentor Name		INTERNAL GUIDE- Ar. Lavanya Vikram THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>This Performing Arts Academy consists of a teaching facility combined with a Performing Arts Center. This campus hopes to bring together the rich culture of India along with the modern techniques of the western countries. Trying to achieve 'Chrysalis', the spaces in the campus are inspiring niches pushing the limits of exploration of the performing arts and the corresponding spaces, beyond. Situated in Mysore, the upcoming cultural hub of India, the campus tries to achieve harmony in terms of amalgamating the performing arts, spaces designed and the captivating picturesque of the Kukkarahalli Lake beside it.</p>		

TITLE	Transit Hub	
SL.NO	USN NO.	NAME
23.	1MS12AT064	Shreya Balaji
Mentor Name		INTERNAL GUIDE- Ar. Lavanya Vikram THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>This Performing Arts Academy consists of a teaching facility combined with a Performing Arts Center. This campus hopes to bring together the rich culture of India along with the modern techniques of the western countries. Trying to achieve 'Chrysalis', the spaces in the campus are inspiring niches pushing the limits of exploration of the performing arts and the corresponding spaces, beyond. Situated in Mysore, the upcoming cultural hub of India, the campus tries to achieve harmony in terms of amalgamating the performing arts, spaces designed and the captivating picturesque of the Kukkarahalli Lake beside it.</p>		

TITLE	Medical Institutional Campus	
SL.NO	USN NO.	NAME
24.	1MS12AT066	Shwetha B Dundankoppa
Mentor Name		INTERNAL GUIDE- Ar. Deepthi Reddy THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>"This medical institute will systematically use design and creativity to create better educational facilities outcomes at lower costs, increase value in the health care system and improve the lives of patients and providers". The campus also includes teaching hospital with all other facilities like hostel, laundry, library, central workshop, animal house etc. The medical college or medical institution shall be housed in a unitary campus near its teaching hospital having a space for future expansion. However the medical college will have their teaching hospital within a radius of five kilometer of the campus. It's located in Bangalore near Hebbal lake adjacent to Bhoopasandra main road. The site is more suitable for an educational building. Site contains coconut trees which will be used as a part of design and also existing features of site will help to enhance the design in a better way.</p>		

TITLE	National Institute Of Design- A Multidisciplinary Approach	
SL.NO	USN NO.	NAME
25.	1MS12AT067	Sneha K Bhagwat
Mentor Name		INTERNAL GUIDE-Ar. Jyotirmay Chari THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>In light of India's unique, dynamic and ever evolving approach towards education, a school would need to be conceived with a lot of in depth study and understanding of teaching methods and the requirements of the students in the present and for the foreseeable future. A design school's framework needs to be laid more specifically due to the intrinsic need for our country's designers to be able to think in a more pragmatic, revolutionary way. This thesis project is analysis of the essence of a school of design in this present day and circumstance, Charles Eames' India report and traditional multidisciplinary schools and presents a design for National Institute of Design keeping this thought process in mind.</p>		

TITLE	5 Star hotel with Convention center and Hotel management institute	
SL.NO	USN NO.	NAME
26.	1MS12AT068	Somisetty Aishwarya
Mentor Name		INTERNAL GUIDE- Ar.Vishwas Hittalmani THESIS COORDINATOR- Ar.Sridhar Rajan
ABSTRACT		
<p>This project includes a hotel, institute of hotel management and a convention Centre. Hotel provides an opportunity to experience world class accommodation, services and all other facilities. Convention center provides room for a business meetings and large gathering for events and enables business to the hotel & pulls crowd which helps in providing accommodation in the hotel. The students will be interested to join the institute because it's easier to get jobs in the hotel, which helps to learn the course easily and practically. It also generates revenue for the state and tourism department. Provides employment for local people. This project is proposed in Hyderabad which will help to retain the cultural heritage of Hyderabad. The location is ideal, as it is in the heart of the city.</p>		

TITLE	Astrophysics Institute	
SL.NO	USN NO.	NAME
27.	1MS12AT069	Soundhariya Ramakrishnan
Mentor Name		INTERNAL GUIDE- Ar.Vishwas Hittalmani THESIS COORDINATOR- Ar.Vishwas Hittalmani
ABSTRACT		
<p>The Institute Of Astrophysics comprises of an institute, library, astronomical observatory, radio waves observatory, planetarium and astronomical museum. The institute primarily focuses on the research and development on the fields of astrophysics and astronomy. Situated in Kurnool, AP on a terrain at a high altitude, the site is appropriate for the location of an observatory. The highways running adjacent to the site provide good accessibility to the institute and planetarium.</p> <p>Sustainable buildings with unique and dynamic forms based on the concept of Galaxy along with providing potent spaces is the main concept of the project.</p>		

TITLE	Cricket Stadium	
SL.NO	USN NO.	NAME
28.	1MS12AT070	Srishti Sharma
Mentor Name		INTERNAL GUIDE- Ar.Sudha Kumari THESIS COORDINATOR- Ar.Vishwas Hittalmani
ABSTRACT		
<p>With the increased pace of life, sports has attained a vital role. It not only keeps us healthy and fit, but also acts as common thread which brings people together, irrespective of what background they come from. A new stadiums helps generate employment and helps the area around it to develop.</p> <p>Cricket, the game, is played by 120 million players in many countries, making it the world's second most popular sport and the most popular in India. The game and its players have always been adored by the fans and is played by almost all age groups.</p> <p>This design aims at proposing an international standard cricket stadium with a retractable roof, the first of its kind in India, which tackles the present requirements of the city (Bangalore - decentralisation & against weather) and bridges the gap between the game and people.</p>		

TITLE	International Airport	
SL.NO	USN NO.	NAME
29.	1MS12AT071	Tanmaya.B.N
Mentor Name		INTERNAL GUIDE- Ar.Rajshekar Rao THESIS COORDINATOR- Ar.Vishwas Hittalamni
ABSTRACT		
<p>Airports are a key transportation modal point and their design should stand through time to be appreciated by current and future generations. The airport terminal is the central building of the airport system. Its architecture reflects the glamour, scale and technological prowess of this fast growing industry. It is a miniature city reflecting the values and aspiration of the society. One such proposed project is Navi Mumbai International Airport. The thesis focuses on representing all the interests at the airport(user, client, retailer, official) and the aim is to strike a balance between the demands of permanence and change. This is best achieved by terminals where designs maximize light and space, which use structure as navigation markers.</p>		

TITLE	Integrated Textile Park	
SL.NO	USN NO.	NAME
30.	1MS12AT072	Vardhaman H
Mentor Name		INTERNAL GUIDE -Ar. Jyothirmay THESIS COORDINATOR-Ar. Vishwas Hittalmani
ABSTRACT		
<p>Airports are a key transportation modal point and their design should stand through time to be appreciated by current and future generations. The airport terminal is the central building of the airport system. Its architecture reflects the glamour, scale and technological prowess of this fast growing industry. It is a miniature city reflecting the values and aspiration of the society. One such proposed project is Navi Mumbai International Airport. The thesis focuses on representing all the interests at the airport(user, client, retailer, official) and the aim is to strike a balance between the demands of permanence and change. This is best achieved by terminals where designs maximize light and space, which use structure as navigation markers.</p>		

TITLE	Integrated Textile Park	
SL.NO	USN NO.	NAME
31.	1MS12AT073	Varun A Porwal
Mentor Name		INTERNAL GUIDE- Ar. Joythirmay Chari THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>The Indian Institute of Management (IIMs) are group of public, autonomous institutes of management education and research in India. They primarily offer postgraduate, doctoral and executive education programs.</p> <p>Management is essential as India is a developing country with abundance of engineers and doctors but not much of management. IIMs have been proposed in all the states. My aim is to design a design a IIM proposed in Sirmaur, Himachal Pradesh. The site is located in between the beautiful backdrops of the Himalayas and Giri river with a challenging terrain.</p>		

TITLE	Mixed Use Seaport	
SL.NO	USN NO.	NAME
32.	1ms12at074	Veena.n
Mentor Name		INTERNAL GUIDE- Ar.Jyothirmay Chari THESIS COORDINATOR- Ar.Vishwas Hitallmani
ABSTRACT		
<p>The maritime industry proves time and again as a provider of ever greater economies ina time of universal globalization. India, while blessed with a graceful coastlineembellished with sundry cargo terminals, fails to exhibit such ardor in the maritimetourism sector. Emerging from a coastal background, I have come to realize the latentpotential of tourism and this thesis aspires to put forth a plan (design) on a live site inKerala that amalgamates utility and aesthetics.</p>		

TITLE	Cancer Hospital	
SL.NO	USN NO.	NAME
33.	1MS12AT075	Vibha P
Mentor Name		INTERNAL GUIDE- Dr. Sridhar Rajan THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>A hospital is an institution for providing health care institution providing patient treatment with specialized staff and equipment. Even though there are a large number of hospitals, specialized centers for treatment of cancer are still inadequate for the growing number of cancer patients every year. This requires newer and more advanced treatment facilities that also provide psychiatric counseling and physiotherapy along with medical treatment and diagnostic facilities.The project consists of a single campus encompassing all the treatment facilities for cancer patients in a healing environment. The goal of cancer hospital is to engage patients in the conscious process of self-healing and spiritual growth. Spaces are designed to be nurturing and therapeutic and, most important, to reduce stress.</p>		

TITLE	Infosys Techno Park	
SL.NO	USN NO.	NAME
34.	1MS12AT076	Vidya Mohan
Mentor Name		INTERNAL GUIDE-Ganesh Babu THESIS COORDINATOR- Vishwas Hittalmani
ABSTRACT		
<p>The thesis aims to design a technology park by understanding the needs and requirements to facilitate the production and commercialization of advanced technologies by forging synergies among research Centre education, institutions and technology based companies. The aim is to assure quality site planning and building design that unifies the natural and built features of the community and have best user interaction, conforms to local building traditions and tastes, minimizes environmental impacts, and establishes benchmarks for future design by using Sustainable Techniques in design process. Architecture in a country is not only defined based on the building façade or usability or its iconic features but also its impact on its nation’s betterment. Architecturally designed buildings provide more sophisticated user friendly spaces for refreshments and help the workers to work at ease leading to better outputs from each individual worker resulting in better production.</p>		

Disrict Office Hub		
TITLE		
SL.NO	USN NO.	NAME
35.	1MS12AT077	Vinutha B G
Mentor Name		INTERNAL GUIDE- Ar. Rajshekar Rao THESIS COORDINATOR- Ar. VishwasHittalmani
ABSTRACT		
<p>A DISTRICT HUB is a centre where all the departments of the government is placed on one site District hub that acts as the focal point of all official activities in one region promotes economic activities, creates jobs, enhances pending and provides for greater revenues to the government and administration District hub plays an important role to the government, where it connects each and every department of the government at one place. Publics can access this hub easily without any difficulties. This hub hosts every possibilities like kiosks, restaurants, information centre, parking, hospitality etc.The concept of the district hub is to create a public and a semi-public use, medium density, official community that compliments the district and public related issues at one place. The district hub is encouraged to have a horizontal public and semi-public use so as to be compatible with the less dense intensity and larger blocks of buildings. Single-use buildings are combined in one planned development.</p>		
National Institute Of Mental Health And Neurosciences(North Campus)		
TITLE		
SL.NO	USN NO.	NAME
36.	1MS12AT078	Yamini Srivastava
Mentor Name		INTERNAL GUIDE- Ar. Rajshekar Rao THESIS COORDINATOR- Ar. Vishwas Hittalmani
ABSTRACT		
<p>There has been a significant change in the approach for treatment of psychiatry and neurology patients in the recent years. In India, NIMHANS, Bangalore is the largest and a unique institute, providing facilities in a wide range of departments. National Institute of Mental Health and Neurosciences north campus, located off Hennur road in Bangalore, will provide services in the field of Psychiatry, Neurology and Neurosurgery. The main purpose is to reduce the number of patients faced by the south campus. An approach of integrating nature with technology will provide the patients an ideal atmosphere to recover. The hospital will also be complimented by a research institute.</p>		
Aerospace Research Centre & Museum		
TITLE		
SL.NO	USN NO.	NAME
37.	1MS12AT079	Zaahir Ahmed
Mentor Name		INTERNAL GUIDE- Ar. Waqar Abid THESIS COORDINATOR- Ar. Vishwas Hitalmani
ABSTRACT		
<p>To design a centre for space research and aeronautics, which has state of the art research facilities related to space crafts and space research. The museum will provide a platform to bring the general public a few steps closer to the marvel of the aeronautical world. There will also be an aerospace research centre where students and teachers who stay on campus can access the facilities.The research and academic blocks will focus on the need for research to be unburdened by the mercenary interests as the underlying principles need to be understood before they can be applied.</p>		

TITLE	Metro Terminal	
SL.NO	USN NO.	NAME
38.	1MS12AT080	Zobiya Patel
Mentor Name		INTERNAL GUIDE- Ar. Lavanya Vikram THESIS COORDINATOR- Ar.Vishwas Hittalmani
ABSTRACT		
<p>The primary aim of the Hyderabad Metro Rail project is to encourage city commuters to switch to public transport and to decongest arterial roads. Positioned as an alternative to private transport, the Hyderabad Metro Rail will be connecting other transport systems like Intra/Inter bus stations, Railway stations and MMT.State-of-the-art integrated bus-cum-metro terminals are being planned in the city. Bus bays and parking facilities for private vehicles will be available. The thesis aims to design one such Metro terminal to create a typical design that can be adapted across the city.</p>		
TITLE	Urban Entertainment Centre, Mysore	
SL.NO	USN NO.	NAME
01.	1MS12AT001	Aatif
Mentor Name		INTERNAL GUIDE- Ar. Rajshekar Rao THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>I was interested in the architecture of commercial and public spaces and took up the task of designing the Urban entertainment center at Mysore, Karnataka.</p> <p>The architecture of this center aims to create an environment of passive recreation and active recreation within the same boundary catering to all age groups. The urban entertainment center comprises of a three star hotel with all modern amenities, A shopping mall with multiplex, A museum block and a theme park. The entertainment center is designed according to the modern day needs being a hub of commercial, residential, and recreational activity which attracts tourists throughout the year.</p>		
TITLE	5 Star Hotel, Mohali	
SL.NO	USN NO.	NAME
02.	1MS12AT002	Aditi N Bharadwaj
Mentor Name		INTERNAL GUIDE- Ar. Kriti Bhalla THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>I was interested in the architecture of hotels and hotel designing. The project is a Five-Star hotel planned in Sector 62, Mohali. The hotel promises elegant, modern accommodation in 200 guest rooms and suites, all featuring guest luxurious amenities and state-of-the-art technology. Executive rooms and the Executive Club lounge provide additional luxury and exclusivity. The hotel's three restaurants and lounge serve delectably traditional and international cuisine.</p> <p>With a wide selection of services and facilities including an exclusive clubhouse, gym, an outdoor swimming pool with clubhouse and massage treatment rooms, the fitness center. Hotel parking is also available on surface and the basement. The building Is designed according to the climatology of the area.</p>		

TITLE	Shopping Mall in a Horizontal Mixed Use Development, Devanahalli, Bangalore.	
SL.NO	USN NO.	NAME
03.	1MS12AT003	Aishwarya Anil Kumar
Mentor Name		INTERNAL GUIDE- Ar. Jotirmay Chari THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>The design of my mall is to create a refreshing and vibrant urban oasis that enables active lifestyle, stimulates community connection and celebrates the outdoors with an overarching sense of hospitality. The ground plane is designed keeping in mind a diversity of retail and outdoor spaces and food court to create an active day and night scene. Restrained, water-wise and nature inspired urban open spaces with atmospheric lighting creates a setting for evening lounging and socializing. The entire mall and the outdoor food court are connected via a network of pathways and grand steps.</p> <p>Since the site is on the highway and could be used as a destination mall, the concept is derived from the LA RAMBLA (street in Barcelona). The outdoor food court and an array of restaurants can be accessed by a drive through pathway.</p>		
TITLE	Mixed Use Development, Kanakapura road, Bangalore.	
SL.NO	USN NO.	NAME
04.	1MS12AT004	Aishwarya M Revankar
Mentor Name		INTERNAL GUIDE- Ar. Vishwas Hittalmani THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>It is a live project in kanakapura main road. The project consists of a Mall, Tower and Residential tower. MXD's are increasing nowadays as reduced distances between housing, workplaces, retail businesses, and other amenities and destinations. They get eco-friendly environment. The site is in a feasible location of the city, near to public transportation and it's easy for people from outside to approach the site. The site gets view of a lake; the residential people can spend their time well. As work, entertainment and living is in same place it reduces the problem of traffic, parking etc. Amenities like yoga hall, gym badminton court, health club, multipurpose halls and library are provided.</p>		
TITLE	Kolkata Museum of Modern Art and Culture, Kolkata	
SL.NO	USN NO.	NAME
05	1MS12AT005	Aishwarya S S
Mentor Name		INTERNAL GUIDE- Ar. Deepti Reddy THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>LIVE PROJECT- NEW TOWN, KOLKATA</p> <p>KMOMA- The cultural heritage of India-its theatre, music, dance, painting, sculpture, architecture, etc.- is as diverse and as complex as the country itself. Documents relating to India's rich cultural heritage are housed in various museums here and abroad. However, no Indian museum yet has the state-of-the-art facility to address every aspect of preserving it while promoting both multidisciplinary and multicultural interface. The main idea of the entire project is to design a fully plunge Modern Art Museum in Kolkata, as proposed by the central government. It also generates revenue for the state and tourism department. It becomes one of the landmarks for the artist's. It is also a great place where Modern artists can showcase their talents and skills. Provide employment for local people.</p> <p>This project is proposed in New Town Kolkata which will help retain the cultural heritage of Kolkata. The location is ideal as it is in the developing area of the New Town, Kolkata.</p>		

TITLE	NIMHANS North Campus, Bangalore	
SL.NO	USN NO.	NAME
06.	1MS12AT006	Aishwarya Shekar
Mentor Name		INTERNAL GUIDE- Ar. Lavanya THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>The project is to design a mental health care facility and research centre. It caters to the need of short and long term resident of mentally ill patients and in the process, helps in their recovery. The treatment of psychiatric patients is intertwined with the architecture of the facility as this user group is highly sensitive to their surroundings.</p> <p>Psychiatric Hospital with Emergency care Research and Training for Mentally Handicapped De-addiction and Rehabilitation Centre</p> <p>The thesis implies that while architecture remains an artistic practice in many respects, certain typologies need to draw heavily from scientific sources.</p>		
TITLE	Performing Arts Center, Hyderabad	
SL.NO	USN NO.	NAME
07.	1MS12AT007	Aishwarya Sreedhar
Mentor Name		INTERNAL GUIDE- Ar. Shubhi Sonal THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Performing arts is one of the most visually appealing forms of entertainment. The purpose of the performing center is not only to foster the learning of the art but also the performance of this art .This center will act as a meeting point for all the performing arts admirers.</p> <p>The project is proposed at Hyderabad. The main objective of this project is to design an academic block which gives scope for enhanced learning of music, theatre and dance. The library block provides the necessary inputs for the same. The museum and the auditorium block that generates revenue for the performing center also acts as a platform, which helps the public to connect with the world of performing arts in an all new level.</p>		
TITLE	Kinetic Skyscraper – Building in motion, Business Bay, Dubai	
SL.NO	USN NO.	NAME
08.	1MS12AT008	Ajmal Majeed
Mentor Name		INTERNAL GUIDE- Ar. Waqar Abid THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Architecture for years were considered static and frozen, while build to last a long lifespan. But in today's context the needs of people are constantly changing and this results in structure designed for a shorter lifespan.</p> <p>Kinetic architecture is a concept through which buildings are designed to allow parts of the structure to move. This kind of building accommodates the constantly changing needs of the users and sustainability through kinetic systems like :-</p> <ol style="list-style-type: none"> 1) Climate Responsive Kinetic Façade 2) Spatial Optimization system through Kinetic Interior Elements 3) Contextual Adaptability 4) Mobility <p>Kinetic systems can create flexible solutions to achieve sustainability.</p>		

TITLE	Kinetic Skyscraper – Building in motion, Business Bay, Dubai	
SL.NO	USN NO.	NAME
09.	1MS12AT009	Akkamahadevi
Mentor Name		INTERNAL GUIDE- Ar. Rajashekar Rao THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>IIT Raichur is necessary because Raichur is a backward area since it needs an approach to develop rather than thinking about developed or developing areas.</p> <p>It gives opportunity to improve the backward areas, depends on their condition all the branches have provided like example English literature, Fashion tech, rain water conservation center. Even have provided with convention center and exhibition Centre that gives space to exhibit the students' works since it gives stage for their work and also provided accommodation for students & faculties. The design itself is energy efficient buildings with respect to climate.</p>		
TITLE	Film Institute And Film City ,Bangalore	
SL.NO	USN NO.	NAME
10.	1MS12AT010	Akshata B Hosur
Mentor Name		INTERNAL GUIDE- Ar. Lavanya THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Film Institute And Film City is a Live Project proposed in Bangalore, Karnataka. The Karnataka Government has allotted an area of 360 acres located in Hesarghatta which is also surrounded by the Nityagram Dance Village. The selected area up to 30 acres for my project will consist of a Master Plan of the Film City and Film Institute and a detailed study and planning of the Film Institute.</p> <p>The Film City accommodates Studios, Live Sets, Premiere Theatres, Celebrity Make up and Dressing rooms, a 5 Star Hotel, Restaurants , Retail Shops, Entertainment Centers, Museum and open landscape sets. The Detailed planning of the Film Institute will provide the appropriate idea of the working of a film institute building that will incorporate interaction and inter-related spaces as a the prime concept for the project. This project provides an opportunity to experience the film industry as well as the education required for those interested. It also generates revenue for the state and tourism. The main scope of this project is that it will accelerate the growth of the Kannada Film Industry by providing the ready to shoot locations, pollution free atmosphere and so that the migration of film makers to other states is reduced; also, students interested in this field will not have to fly to other cities for the same. It will also be a tourist attraction and an appreciation to the film and entertainment industries.</p>		
TITLE	International Fashion Hub, Bangalore.	
SL.NO	USN NO.	NAME
11.	1MS12AT011	Akshaya. R
Mentor Name		INTERNAL GUIDE- Ganesh Babu THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>This thesis is an attempt to make it the ultimate Fashion destination and to explore the contemporary relationship between architecture and fashion which use the style to represent time, character, attitude and feelings. It involves detail, texture, silhouette, creativity and art which play an important role in the field of Fashion and so I took up this project.</p>		

TITLE	International Fashion Hub, Bangalore.	
SL.NO	USN NO.	NAME
11.	1MS12AT011	Akshaya. R
Mentor Name		INTERNAL GUIDE- Ganesh Babu THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

This project aims to provide a Fashion hub for all the Fashion enthusiasts in the city of Bangalore as well as others to congregate and celebrate Fashion. It's an amalgamation of a Fashion Centre which consists of a Fashion Design office, Runways, Media house, Styling rooms and a recreational space, a Fashion Institute, a Museum, a Convention Centre which includes an auditorium, exhibition halls, workshops, and conference halls, and hostel for the students. It also generates revenue for the state.

Keywords: Fashion design, Architecture, Art, Aesthetics, Design.

TITLE	International Fashion Hub, Bangalore.	
SL.NO	USN NO.	NAME
12.	1MS12AT012	Amal Aga
Mentor Name		INTERNAL GUIDE- Ar. Waqar Abid THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan

ABSTRACT

The hospital creates an optimal treatment environment for patients challenged with persevering through an intimidating and life-changing experience. Invoking hope, healing, and tranquility for the patients. Located in Bangalore, this comprehensive oncology center integrates radiation therapy, chemotherapy, minor procedures, clinical multi-specialty teams, diagnostics, and patient support. Many of the services are consolidated into one multi-modality center and many of oncology specialists together in one building, creating a multi-disciplined team organization for physicians and staff. Looking ahead into the future, the project tries to achieve ideas of Architectural Phenomenology that affect the mind, body and soul.

TITLE	Kinetic Skyscraper – Building in motion, Business Bay, Dubai	
SL.NO	USN NO.	NAME
13.	1MS12AT013	Anjali Srikant Iyengar
Mentor Name		INTERNAL GUIDE- Dr. (Prof.) Sridhar Rajan THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

An Urban Entertainment Centre (UEC) can be defined as a family- based entertainment destination. These centers combine activities such as shopping, recreation and entertainment into an overall experience. The rapport between retail and entertainment is such that they go hand in hand. Retail needs entertainment to attract people while at the same time entertainment needs the retails to support the whole operation.

This project is being carried out in Hebbal, Bangalore, Karnataka, which is a prime location as there isn't such a project for the people living in and around that locality.

The project includes a shopping mall (complete with cinema multiplexes and restaurants) and an exhibition center which consists of space where events can be organized as well as auditoriums for cultural and entertainment performances.

Thus, having everything one need within comfort's reach and being able to mix fun with frolic is the main purpose of an UEC.

TITLE	Transit Hub with Allied Functions, Wadala, Mumbai	
SL.NO	USN NO.	NAME
14.	1MS12AT014	Anju Balakrishnan
Mentor Name		INTERNAL GUIDE- Ar. Ganesh Babu THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>“Mixed-use community that encourages people to live near transit services in sufficient density to make public transport viable and attractive to decrease their dependence on private transport. Provide high capacity, high speed, multi-modal transport corridors connecting cities – “Transit Oriented Development” (TOD).The sustainable urban development concepts like Compact city, New Urbanism, Transport Oriented Development and Smart Growth which have evolved in response to the increasing need for a resource-conserving, sustainable, and people-centric city, have already found enthusiastic supporters among governments, urban development agencies, planners and urban designers in many parts of the world outside India. The live project proposed by the MMRDA, at Wadala, Mumbai aims to be one such development. The project will bring together commercial uses along with a transit hub. Integrating the two different land uses is mutually beneficial.</p>		

TITLE	Eco-Village In Gokarna	
SL.NO	USN NO.	NAME
15.	1MS12AT015	Anuja Mallya
Mentor Name		INTERNAL GUIDE- Ar. Jotirmay Chari THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Today most people reside in concrete jungles living lifestyles that are confined in built-up environments. Many of us long to shift to a lifestyle that enables us to tread softly on this earth. Ecovillages are a tangible expression of these longings.</p> <p>This project explores what a small eco-community and retreat center at the edge of Gokarna, a temple town might look like. The main objective is to create an optimal living environment for the community, where architecture and lifestyle could jointly enable a more fulfilling and environment-friendly life, united by a network of interstitial open gathering spaces created to leave scope for community cohesiveness to materialize.</p>		

TITLE	Veterinary Institute, Bangalore	
SL.NO	USN NO.	NAME
16.	1MS12AT016	Anusha Saraaff
Mentor Name		INTERNAL GUIDE- Dr. (Prof.) Sridhar Rajan THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>This project includes –veterinary college , veterinary hospital , shelter home , pet parks , canteen , interpretation center , farmers training unit , slaughter houses , farms , accommodation , open spaces. The aim of the project is to provide best facilities for education in the field of veterinary science through the latest technological advancement, modern wellness center for animals to make animal care easy and to provide education about technology and care of farm animals to farmers.</p>		

TITLE	Techno park, Varthur, Bangalore	
SL.NO	USN NO.	NAME
17.	1MS12AT017	Anusheetha.G.Sudev
Mentor Name		INTERNAL GUIDE- Ar. Ganesh Babu THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

Today, Global competitiveness level of a country is directly proportional to that country's capacity to produce 'new information' and its 'technological development'. Concepts like "advanced technology", "R & D", "innovation", "competition", and "entrepreneurship" are the 21st Century Building Blocks Of Production. Bangalore being the 'Silicon City'/'IT Hub' of India has an ever growing need for IT offices, to accommodate the expanding population of IT professionals.

There is an increasing demand for Techno parks and IT hubs. The current statistics, state that approximately 1.5 Million engineering students graduate every year, hence the development of this industry and construction of such parks and buildings generate employment for a large number of individuals. Apart from this, the industry also generates employment for a large number of unskilled laborers as well. Development of the IT industry will help develop the economy of the state as well as the nation.

TITLE	Intermodal Transit Hub, Yelahanka, Bangalore	
SL.NO	USN NO.	NAME
18.	1MS12AT018	Arjun Gowda K N
Mentor Name		INTERNAL GUIDE- Ar. Kriti Bhalla THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

The journey elevates the senses and excites a human. As a man travels he learns more and understands more. Here the aim is to create such spaces by using architecture as a tool and the bus terminus as a medium. This is a world where distance is measured in terms of time anyone aim would be to reach their destination faster and safer. In a bus terminus where people are headed towards different goals the time spent in the terminus itself is very less. The project is to plan and design an Intermodal Transit Hub, a Commercial Hub, Office space and a 3-star hotel to accommodate passengers and visitors as well as employees. With quality infrastructure and means of faster and safer commuting options, it will encourage the public to use the rapid transit system. So the number of private vehicles plying on the roads would reduce which ultimately results in less or congestion free roads.

TITLE	Oceanarium, Muttukadu, Chennai	
SL.NO	USN NO.	NAME
19.	1MS12AT019	Ashwini. R. Ram
Mentor Name		INTERNAL GUIDE- Ar. Lavanya Vikram THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

Ocean covers almost 71% of the earth's surface. A large proportion of life lives in the ocean. Many species are known but many more are yet to be discovered.

This project, an Oceanarium, in the outskirts of Chennai city is designed as a virtual world above ground showcasing not only different species but also its life and natural habitat, making everyone who visits feel that they are part of the ocean and its beautiful wonders within.

This sustainable campus provides a platform for people to familiarize with the known part of the ocean and also gives opportunities for researchers to know and discover the unknown part of this amazing universe within the water.

TITLE	Unnayan, a Socio-Economic Community Development Centre, Ranir Bazar Municipality, Tripura	
SL.NO	USN NO.	NAME
20.	1MS12AT020	Attreyee Ghose
Mentor Name		INTERNAL GUIDE- Ar. Vishwa S. THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Unnayan, a Community Development Centre in Tripura, aims at bringing the marginal laborers of Ranir Bazar Municipality and the surrounding areas where the population count is low, into a centralized sector. This will help and support the socio-economic prosperity of the local residents and ensure better utilization of the available infrastructure. The idea is not only to create livelihoods for the people who work and live in the area, but to also develop a self-sustaining ecosystem through the provision of better health facilities and promotion and sale of local craftsmanship. The upliftment of the community has been worked upon by providing a community healthcare center; a vocational training and manufacturing center for women; a crèche cum pre-primary school; a museum; a library; a community facility block and residential accommodation for both, in house employees as well as guests.</p>		

TITLE	Medical College And Hospital, Kasargod, Kerala	
SL.NO	USN NO.	NAME
21.	1MS12AT021	Auna Sando
Mentor Name		INTERNAL GUIDE- Ar. Vishwas Hittalmani THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

Health is wealth. 'Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. This thesis design aims to incorporate the concept of providing fresh air and access to the 'healing powers of nature'. The overarching goal of this project is to design a hospital which can reduce patient's recovery time by exposure to daylight which is also effective in reducing depression.

A campus including a medical college, residence for the staff and students and a teaching hospital which combines assistance to people as well as teaching to medical students and nurses. There is a huge demand for a medical college and hospital in Kasargod. This will be the first of its kind in Kasargod. The endosulfan affected victims will get a relief and not having to travel till Mangalore saves time and lives. India plans to establish 200 new medical colleges in the next 10 years to meet the projected huge shortage of 600,000 doctors, thus justifying the need for the establishment of this project.

TITLE	Aquamarine Park, Mangalore	
SL.NO	USN NO.	NAME
21.	1MS12AT022	Bhuvana Nanaiah
Mentor Name		INTERNAL GUIDE- Ar. Waqar Abid THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

The Aquamarine Park is an Oceanarium, proposed by the Department of Tourism, Karnataka, at Bengre village, Mangalore. The Webster's Dictionary defines an Oceanarium as a large salt-water aquarium for ocean fish and animals. These beings are bred and taken care of in captivity for study and public entertainment. This project has been proposed with an intention to increase tourism in this coastal city, provide an alternative source of income for the localities, and promote research in the field of marine biology.

Since the main intention of this project is to provide common man with an opportunity to experience the magic of the sea and the life forms it holds, the same agglomeration of man and nature shall be implemented in the design of this project by bringing together earth's five elements and man's built environment.

TITLE	Aerospace Museum And Research Centre, Bangalore	
SL.NO	USN NO.	NAME
23.	1MS12AT023	Crisyl Maria Ferrao
Mentor Name		INTERNAL GUIDE- Ar. Vishwas Hittalmani THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

Bangalore is an ideal place with right ecosystem to start the Aerospace industry. This project involves an Aerospace museum and Research center. The museum and research center could help in bringing out a quality research in space and ground-handling technologies for the aerospace industry. Museum involves displays of war aircrafts, permanent galleries and demonstration areas. Research center involves an excellent space for learning comprising of well-equipped laboratories, which will help the students get a vast opportunity for learning and experimenting new ideas. This industry is coming up at Devanahalli, Bangalore.

TITLE	Institute For Mental Health And Care, Coorg	
SL.NO	USN NO.	NAME
24.	1MS12AT024	Dakshata.A.B
Mentor Name		INTERNAL GUIDE- Ar.Vishwa S THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

This institute is proposed in Madikeri, Karnataka to reduce the pressure on the trauma and other treatment centers on the existing NIMHANS campus. NIMHANS is overcrowded, receiving around 130 people every day seeking immediate treatment. At least 10 per cent of the patients have to be referred to private hospitals. This campus not only reduces the pressure on existing campus but also provides good health care facility in Coorg, as people travel to Mysore, Mangalore or Bangalore for higher medical facility. This new campus will not only have physical treatment, they will be provided with recreational space for the somatic growth of patient. Along with efficient health care facilities, rehab center are included for patients volunteering to the treatment as well as for the people who are disowned by their families because of the mental illness. This institute has separate treatment units for juvenile, old age, kids, men and women.

TITLE	A CULTURAL HUB (Telangana Kala Bhavan)	
SL.NO	USN NO.	NAME
25.	1MS12AT025	Disha J Shetty Alkeere
Mentor Name		INTERNAL GUIDE- Ar. Shubhi Sonal THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

At the heart of the city, in Telangana, a cultural hub is a much needed space to add to the charm of the city. A place where people from all walks of life can experience commercial, cultural and social activities. It will cater to all forms of art, and help in integrating all the diversity under one closed campus, yet very open and varied in both its design and function.

This architectural design will aim at evoking a sense of oneness and happiness through the form and various transitional spaces. The design of the spaces also takes into account the local cultural needs. This will be a work of culture in standing form expressed through architecture.

TITLE	Indian Institute Of Management Nagpur.	
SL.NO	USN NO.	NAME
26.	1MS12AT026	Gunasheela U.
Mentor Name		INTERNAL GUIDE- Ar.Krithi Bhalla THESIS COORDINATOR- DR.(Prof) Sridhar Rajan
ABSTRACT		

Institute of Management education is the Institution established with the aim of providing quality management education. It is essential for India as it has become the central activity of our civilization. It employs a high proportion of our educated men and women and determines the quality of our economic progress, the effectiveness of government services.

The allotted site in Nagpur provides a very huge land for the campus and opportunities for the greener and open space, provision of all facilities within a campus. The objective is to try to relate the fixed to the kind of the life that lives in the given space. To provide educational facilities for training men and women for careers in management related fields. Most challenging part is to acquire the design with respect to the present climatic condition of the city.

TITLE	Urban Entertainment Center, Bangalore	
SL.NO	USN NO.	NAME
27 .	1MS12AT027	Halima Sadya
Mentor Name		INTERNAL GUIDE- Ar. Vishwa THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

Bangalore is a city of vast diversity and great talent. It is a city that is waiting to celebrate. For this, it becomes important for citizens to enjoy, the freedom to have space at their disposal that is best suited for the vibrant culture of Bangalore.

The project is an urban entertainment center. The main objective it to maintain a right balances of retail and entertainment considering the local preferences and the target audience. The appeal of individual attraction is very important. But having the right mix is just as critical. Entertainment centers should have a compact and dynamic feel about them.

TITLE	National Institute Of Design, Hyderabad	
SL.NO	USN NO.	NAME
28 .	1MS12AT028	Harshitha Giriypura
Mentor Name		INTERNAL GUIDE- Ar.Shubhi Sonal THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

I was interested in the architecture of institutions and took up the task of designing the campus of the National Institute of Design at Hyderabad.

The architecture of an institution provides context to the education imparted there. This thesis is an attempt to take a closer look at what the spaces of the foremost design school in the country could be. The National Institute of Design (NID) is internationally acclaimed as one of the foremost multi-disciplinary institutions in the field of design education and research.

TITLE	Iris House Of Couture, An Integrated Fashion Hub, Doddaballapur, Karnataka.	
SL.NO	USN NO.	NAME
29 .	1MS12AT029	Jananee R.
Mentor Name		INTERNAL GUIDE- Ar. Rajshekar Rao THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Iris house of couture, a fashion hub, is an integrated solution for the fashion industry. As a thesis project this aims at depicting by means of design the inter-relationship between the various phases of the fashion industry which mainly includes:</p> <p>1) A Fashion institute 2) A Design house, 3) Production units, 4) Exhibition Centers and 5) A fashion Arena. 6) Retail Outlets These phases may function independently yet are linked at some point of time and hence is a one-stop solution for all as it aims at bringing all the facilities under one roof.</p> <p>As a live project proposed in Apparel Park, Phase II, Doddaballapur, this project has the potential to fulfill the growing needs of the garment industry in the years to come.</p>		
TITLE	Auto Arena, Attibele, Bangalore	
SL.NO	USN NO.	NAME
30.	1MS12AT030	Jovine John
Mentor Name		INTERNAL GUIDE- Ar. Deepthi Reddy THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>The Auto Arena is a proposed live automobile industrial project in Attibele, off Whitefield, Bangalore, and Karnataka. The project mainly comprises of a museum, assembly unit and retail center that represent the past present and future of the automobile brand itself. The project looks forward to merging conventional exhibition spaces in display with the modern day aesthetics and technology to create an architectural master piece.</p> <p>The project is about bringing multiple different types of functions together in a logical way. The automobile assembly plant, the retail unit and the automobile museum share the same focus which is automobile, but the approach to meet the focus here are different from each other. Bringing these three different types of programs together here is the main concern and it should be dealt with importance.</p>		
TITLE	Center For Mentally Disabled Children, Dindigul, Tamil Nadu	
SL.NO	USN NO.	NAME
31.	1MS12AT031	K.Sukan
Mentor Name		INTERNAL GUIDE- Ar. Rajashekar Rao THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Center for mentally disabled children is an educational institution, recruiting children mentally retarded pupils. The school includes teaching, sports and accommodation facilities. The aim of the project is to create a special institute for mentally challenged persons catering to their day to day physical, psychological, emotional and sociology requirements. The institute is planned with modernist architectural therapy. The central group of buildings which include the main classrooms with therapy interactions as a unit and surrounded by a residential unit (teachers and students), UG and PG for rehabilitation science and an exhibition space with an interaction space between students, teachers and parents also with psychological therapy for teachers. And the main aspect for the building is to overcome the hot climatic condition, which is affecting all the people in today's world.</p>		

TITLE	Karnataka Veterinary and Animal Sciences University and Hospital, Shivamogga	
SL.NO	USN NO.	NAME
32.	1MS12AT032	Keerthana Sumanth
Mentor Name		INTERNAL GUIDE- Dr. (Prof.) Sridhar Rajan THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Presently, there are only 4 functioning Veterinary colleges in the state. Though there are sufficient veterinary hospitals, the need for planning a veterinary institution is of prime importance. Understanding animals and providing them with a loving, caring environment is the goal of this Thesis. Situated in Kodagu, Shimoga, it is about 6km from the City Centre, providing easy access.</p> <p>The aim of the institution is to provide the best facilities in the field of Veterinary Science, through means of advanced technology and latest developments, to prevent cruelty to animals and provide humane treatment to them leading by example, special treatment of animals and grouping based on their temperament and to provide easy availability of vet care for one and all.</p>		

TITLE	Wildlife Conservation Centre ,Eco Tourist Hub, BR Hills, Karnataka	
SL.NO	USN NO.	NAME
33.	1MS12AT033	Koushik BR
Mentor Name		INTERNAL GUIDE- Ar. Vishwas Hittalmani THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
Architecture For A Cause		
<p>The present scenario in the 21st century calls for a change. We are at a state where we have excessively used fossil fuels to produce our energy requirements and now we can feel the consequences. A new trend of architecture called Sustainable architecture has come up where preserving nature and reducing carbon footprint is given maximum importance. Global warming is real! Climate change is real!</p> <p>This project mainly focuses on Sustainable architecture and the use of the latest green technology available in the field. Eco tourism is all about educating the tourists about nature. Hence, it’s the perfect platform to showcase the kind of technology available to create a functional, self-sustainable space which would meet the demands of a structure which is not self-sustainable. Wildlife and forests are fast depleting paving ways to concrete jungles. This project also focuses on showing how built structures can blend in with the natural environment without causing any major impact to the nature.</p>		

TITLE	Multi-Specialty Hospital, Chikmagalur	
SL.NO	USN NO.	NAME
34.	1MS12AT034	Vipin Reddy
Mentor Name		INTERNAL GUIDE- Ar. Ganesh Babu THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>A Multi-Specialty Hospital is a health care institution providing patient treatment with specialized staff and equipment. It is an establishment with various departments such as trauma care, diagnostic center, orthopedics, gynecology etc., catering to the needs of the patient.</p> <p>The treatment of the patient is intertwined with the efficiency and functionality of the built structure, thereby the architecture of the facility. The live project proposed is one such development.</p>		

TITLE	Nehru Centre for Performing Arts, Chandigarh	
SL.NO	USN NO.	NAME
35.	1MS12AT035	Malavika Mallik
Mentor Name		INTERNAL GUIDE- Ar. Deepthi Reddy THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>The Performing Arts Center is designed as a state of the art performance and teaching space for the music department, theater, dance, creative and performing arts. It is designed as a portal to the campus that maintains fluidity between its boundaries on all sides. The program is broken down into multiple buildings including an academic block, a theatre and dance building, music building, arts building and individual rehearsal rooms. In order to enable a powerful courtyard feature, the buildings are integrated into an underground forum. This courtyard feature is intrinsic to the campus. The towers of the facility create views that are transparent due to curtain wall glass. This is to provoke curiosity and connect the community with the arts and musicians as they perform.</p>		

TITLE	Mixed Use Development(Vertical) , Chikkajala, Bangalore	
SL.NO	USN NO.	NAME
36.	1MS12AT036	Mayuresh. Kolagada
Mentor Name		INTERNAL GUIDE- Ar. Vishwa THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>Mixed use design can be defined as a real estate project with planned integration and having a combination of use, including retail, office, residential or other functions which are user friendly and have an architectural expression.</p> <p>My Opinion: Since Mixed Use Development is beneficial and economical, as an architect I would like to bring a difference by supporting this concept and encouraging others in carrying out this concept for development of the country. In India, this trend has been seen only from past 6-8 years. Therefore, there is a need to carry it out further in a more disciplined manner. This topic is most suitable for the sustainability of environment and economic growth of the country too. Just as each building shape is unique in itself, each interior holds its own flavor and distinctiveness. The project features four main buildings characterized by its own department, each with unique architectural aspects. This exquisite design, tailored to each individual discipline, allows for a powerful integration of experience, learning and observing.</p>		

TITLE	Urban Entertainment Centre, Hyderabad	
SL.NO	USN NO.	NAME
37.	1MS12AT037	Mehar Deep Kaur
Mentor Name		INTERNAL GUIDE- Ar.Kriti Bhalla THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>The project gives scope to design buildings belonging to different land uses like commercial, public and semi-public categories. The aim is to design an UEC in Hyderabad which integrates the provision of shopping and entertainment facilities, with the right balance of each.</p>		

-The site is located in immediate surrounding with a lake; which gives me an opportunity to make a waterfront development. The presence of water body would result in automatic enhancement and creation of a pleasant atmosphere; if dealt with properly. The orientation of the enclosed spaces can be such that there is provision of pleasant views of the water body.

-Spaces created would shout relaxation and recreation in order to attract more visitors which is very much possible as the surrounding areas of the site are that of residential and offices ; hence a very appropriate targeted audience (at micro level) and Hyderabad being the capital of two states is the main tourist hub , thus signifying importance at macro level too.

Campus For The Specially Abled, Thrissur, Kerala		
TITLE		
SL.NO	USN NO.	NAME
38.	1MS12AT038	Mitha Mohan
Mentor Name		INTERNAL GUIDE- Ar. Waqar Abid THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		

We as designers often focus most of our time and energy on the visual aspects of design. However, we interact with the built environment using our entire body and all of its senses. Architecture is meant to be multisensory hence being more accessible to specially abled people. In my project I intend to focus on those multisensory elements and not just to explore the different tactile effects given to a building for the visually impaired. This project aims at examining the different ways the specially abled navigate through and experience the built environment. A learning center consisting of a school for the blind, a school for the deaf and dumb, a vocational training center, an auditorium and cafeteria are laid out to strengthen their sensorial perception as they move from space to space.

Vertical Mixed Use Development, Mangalore		
TITLE		
SL.NO	USN NO.	NAME
39.	1MS12AT039	Mohammed Faisal
Mentor Name		INTERNAL GUIDE- Ar. Vishwas Hittalmani THESIS COORDINATOR - Dr. (Prof.) Sridhar Rajan
ABSTRACT		

The growing popularity of mixed-use developments is driven by both the developers and regulators. Developers are attracted by potentially higher rates of return from denser development that builds in clientele for on-site uses. Public officials are interested in the potential of such developments which serve as a catalyst for redevelopment and the creative use of in-fill sites.

The project can only achieve the objectives of both parties if the combined uses are financially feasible. A successful vertical mixed-use development shares many of the characteristics of a successful horizontal community; however, unlike horizontal communities, vertical mixed-use communities must be concerned with the additional challenges that arise when constructing a vertical platform. Physical design, staging/phasing and cost financing issues arise when blending residential, retail and office uses in a single tower.

TITLE	Vertical Mixed Use Development, Mangalore	
SL.NO	USN NO.	NAME
40.	1MS12AT040	Neeti Ajit
Mentor Name		INTERNAL GUIDE- Ar. Shubhi Sonal THESIS COORDINATOR- Dr. (Prof.) Sridhar Rajan
ABSTRACT		
<p>The project is to design a cancer hospital and research Centre with a capacity of 500 beds. Situated in Kozhikode district of Kerala. It caters to the need of short and long term patients and in the process, helps in their recovery. A Healing Atmosphere That Uplifts Human Spirits Plays A Part In The Treatment Of Cancer As This User Group Is Highly Sensitive To Their Surroundings.</p> <ul style="list-style-type: none"> • Cancer Hospital with Emergency care • Research Facility • Hospice and Rehabilitation Centre <p>Patients can stay in the hospital compound while undergoing treatment. Along with inpatients facilities, there are facilities for support system housing. The thesis implies that while architecture remains an artistic practice in many respects, certain typologies need to draw heavily from scientific sources.</p>		
TITLE	Promotion Of Sports Institute, Raipur, Chhattisgarh	
SL.NO	USN NO.	NAME
41.	1MS09AT022	HARESH PARMAR
Mentor Name		INTERNAL GUIDE- Ar. Vishwas Hittalmani THESIS COORDINATOR- Dr.(prof).Sridhar Rajan
ABSTRACT		
<p>Promotion of sports institute is an educational institute with stadiums. My Institutes aim is to become the default provider of sports coaching and support services for all athletes and sporting associations across the country. The main objective is to achieve excellence in Sports and train & prepare sports persons to participate in International Olympic Competitions. It has International Standard Sports Infrastructure spread across the country along with trained coaches to achieve its objectives. Population 2nd largest, achieving very few medals. Sports are very much required for healthy society also to improve general health of people of India. So many interesting sports do not exist in so called modern India because of lack of infrastructure, training, exposure. People who are good in sports do not find place, guidance, sponsorship when required.</p>		

DEPARTMENT OF **BIOTECHNOLOGY**

Project
Abstracts

2016 - 2017

TITLE	Amplification, Sequencing and Comparison of Human and Bovine Leuko- cyte regions	
SL.NO	USN NO.	NAME
1	1MS13BT054	Sneha P Shastry
2	1MS13BT030	Nagendra M Chander
3	1MS13BT025	Mayuri N
MENTOR NAME	External Mentor- Dr. Malali Gowda, Professor, IBAB, Bangalore. Internal Mentor- Dr. P.Dhamodhar, Associate Professor, Dept. of Biotech- nology, RIT.	
ABSTRACT		

The major histocompatibility complex (MHC) is a cell surface protein that helps the body distinguish between self and non-self-molecules in vertebrates. MHC in humans are called HLA and in bovines are called BoLA. These regions in humans can be found on chromosome 6 and in bovine on chromosome 23. In cows it is used to predict significant features like milk yield, milk fat percentage, gestation period, etc which are important features for Dairy Industry in India. To obtain and analyze this data, we look towards sequencing the particular region by long range PCR followed by Sanger sequencing which is done by analyzing the genes bioinformatically and synthesizing primers for region specific amplification and validation. However, the novelty of our study is developing Linux based pipelines, synthesis of primers for end to end amplification of Indian human population as well as Indian bovine Cross breeds followed by Oxford Nanopore.

TITLE	Role of E2-2 in Adult Brain Functions	
SL.NO	USN NO.	NAME
1.	1MS13BT050	Shrinidhi Madhusudan
Mentor Name		External Mentor: Dr. Hiya Ghosh, NCBS, Bangalore. Internal Mentor: Mr.M.Gokulakrishnan, Assistant Professor, Dept. of Biotechnology, RIT
ABSTRACT		

The project aims to study the role of E2-2 protein in adult brain functions. E2-2 comes under a class of proteins called the bHLH proteins. These proteins form a large superfamily of transcription factors. They are critical for developmental processes, specifically in haematopoiesis, cardiac development, myogenesis and neurogenesis. The regions of interest in the brain include sub-ventricular zone of the lateral ventricles and the sub-granular zone of the dentate gyrus. Both these regions are located in the hippocampus. My project aims to study the over expression and knockdown of E2-2, and the molecular mechanisms that follow in neurospheres.

Further in addition to the molecular work, my project is also focused on analysis of behavioural data. The analysis will be for the mouse "forced swim test" and the experimental animals used will be of three genotypes. They are, the wild type (whose alleles contain the E2-2 gene), flox-flox(the gene is understood to be removed from both alleles) and the heterogenous allele.

TITLE	Comparative Study of Curcumin and Nanocurcumin for their Antibacterial and Cytotoxic Activities	
SL.NO	USN NO.	NAME
1	1MS13BT013	Deepak Kinha
2	1MS13BT047	Sharath P
3	1MS12BT036	Sagar Kumar
MENTOR NAME	Internal Mentor- Mr. Samrat K, Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		
<p>Nanotechnology is one of the most interesting areas of research in modern science. In medicine, nanotechnology-based drug delivery system is an advanced method for treating number of dreadful diseases. In the recent years, plant-derived medicines play an important role in health care. The nanoparticles prepared from biological sources do not produce any harmful side effects. Curcumin (1, 7-Bis-(4-hydroxy-3- methoxyphenyl)-hepta-1, 6-diene-3, 5-dione) is a bio-active component isolated from the rhizome of Curcuma longa Linn, which exhibits various pharmacological activities. But the pharmaceutical application of curcumin was limited due to its poor water solubility and bioavailability. However, the clinical studies proved that curcumin nanoparticles exhibit increased solubility and bioavailability. The therapeutic efficacy of curcumin nanoparticles increases by applying the drug in different nanoforms. So, in the present study antibacterial and anticancer activity of synthesized cumcumin nanoparticles was evaluated. It was found that curcumin nanoparticles showed significant antibacterial activity for gram positive than gram negative bacteria.</p>		

TITLE	Formulation and Standardization of Egg Albumin based Infant food	
SL.NO	USN NO.	NAME
1	1MS13BT011	Chethana S.D
2	1MS13BT064	Vinutha Reddy U
MENTOR NAME	Internal Mentor- Mr. Samrat K, Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		
<p>Lactose intolerance is usually caused by a deficiency of an enzyme in the body called ‘Lactase’. Symptoms may include abdominal pain, bloating, diarrhea, gas, and nausea.</p> <p>Among the four groups of lactose intolerance, we are dealing with congenital lactose intolerance. Congenital lactase deficiency is a very rare disorder in which babies can’t break down the lactose in breast milk or formula. Lactose intolerance in infants (congenital lactase deficiency) is caused by mutations in the LCT gene. The LCT gene provides instructions for making the lactase enzyme.</p> <p>There are other artificial infant formulas available in the market such as soy milk, hydrolyzed and partially hydrolyzed formula, whereas these formulas have their own disadvantages more than advantages. Therefore we are coming up with artificial infant formula using egg albumin which has high biological value and serves as a ‘Life Saving Food’. This not only helps infants intolerant towards lactose but also infants who are allergic to cow’s milk protein and infants with galactosemia. The major advantages of using egg albumin is that it contributes for protein, it is safe, natural, nutritious, less expensive, easy to handle, no chemical madness and no GMOs.</p>		

TITLE	Plastic Optical Fiber based Biosensors	
SL.NO	USN NO.	NAME
1	1MS13BT010	Charishma R
2	1MS13BT032	Nayanica Banerjee
3	1MS13BT033	Nithyasree G
4	1MS13BT055	Sruthi Murali
MENTOR NAME	External Mentor- Dr. Malali Gowda, Professor, IBAB, Bangalore. Internal Mentor- Dr. P.Dhamodhar, Associate Professor, Dept. of Biotechnology, RIT.	
ABSTRACT		

The project has three major objectives-

- 1) To standardize the best crosslinking agent which shows maximum attachment of primary antibody to the functionalized sheets/fibers. We compare 4 such agents, namely EDC, EDC NHS, EDC SNHS and Sulpho EMCS.
- 2) To test the effect of gold nanoparticles on crosslinking activity of the standardized agent. Theoretically gold increases the number of binding sites and hence, should show better results.
- 3) To standardize the sensitivity by using varying concentrations of antigen thereby, optimizing the lowest detectable concentration.

The transducer essentially is a plastic optical fiber, over which a receptor is immobilized. The substrate is namely PMMA (Poly (methyl methacrylate) whose interactions with the antibody is to be studied. The top layer is PMMA and serves as the functional layer for binding to biomaterials; this layer is functionalized by means of HMDA (Hexa methylene diamine) to add an amine group which in turn attaches to an antibody.

TITLE	Quantitative Proteomics of Brain region Using Mass Spectrometry	
SL.NO	USN NO.	NAME
1	1MS13BT007	Anu Hemalatha R
2	1MS13BT031	Namitha R Shankar
3	1MS13BT053	Sneha Suresh
MENTOR NAME	External Mentor- Dr. T S Keshav Prasad, IOB , NIMHANS Internal Mentor- Dr. Sravanti V, Assistant Professor, Dept. of Biotechnology, MSRIT	
ABSTRACT		

The dynamic nature of the proteomic complement of the cell reveals many aspects of its cytoarchitecture. Dorsolateral Prefrontal Cortex (DPFC) is one such region which is concomitant with neurodegenerative disorders such as Parkinson's and Alzheimer's. Therefore the aim of our project was to conduct a holistic proteomic study of DPFC of normal human brain across developmental stages along with determining the protein expression profile and Gene Ontology studies. This is a study contributing to the Human Brain Proteome Project. Using high resolution, we were able to identify around 5600 different proteins, generating a comprehensive proteomic map of the DPFC region of normal human brain, which serves as a key resource in understanding brain development, pathology and search for potential biomarkers in neurological disorders.

TITLE	Assess the impact of household surfactants on human health, environment and its biodegradation in bioreactors	
SL.NO	USN NO.	NAME
1	1MS13BT014	Granthika Chatterjee
2	1MS13BT038	Rajita Shukla
3	1MS13BT049	Shivani Kedia
MENTOR NAME	External Mentor- Dr. H N Chanakya, ASTRA, IISc, Bangalore. Internal Mentor- Dr. P.Dhamodhar, Associate Professor, Dept. of Biotechnology, RIT.	
ABSTRACT		

Bellandur and Varthur lake – the once bountiful lakes in Bangalore, have gradually transformed into a sewage tank. To address this problem we have conducted a survey of houses in Bangalore and characterized the chemical compounds present in the synthetic personal care products. We categorized the chemical compounds as surfactants and xenobiotics. This experimental determination of the anionic and nonionic surfactant concentration in treated and untreated water discharged from the bioreactors, based on the successive extraction method. The ionic pair formed was determined by spectrophotometer by measuring the absorbance at a specific OD. The concentration of anionic and nonionic surfactant in treated and untreated water was studied for a fixed period of time. This quantitative analysis was used to study the biodegradation of the household surfactants.

TITLE	Genetic diversity analysis and evaluation of blast resistant genes in Rice	
SL.NO	USN NO.	NAME
1	1MS13BT046	Sanjana N
2	1MS13BT024	Manisha Basu
MENTOR NAME	External Mentor- Dr. Harini Kumar K.M., Professor, GKVK, Bangalore Internal Mentor- Dr. Lokesh K N , Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		

Rice being one of the most important cereal crops holds the second prominent position in global agriculture. In India it is grown over an area of 44 million hectares with the production of 104.32million tons and productivity levels 2372 kg h⁻¹.With everyday increase in population, adverse climatic changes and new pathogen and pest activities, the rice breeders are facing great challenges to meet the demands. Worldwide rice is affected by most devastating Blast disease caused by Magnaporthe grisea. This paper showcases the methodology of PCR and Gel Electrophoresis, two of the major techniques among many others that were used for this project. Blast resistant genes were evaluated in12 varieties of rice samples in order to get resistant donors which can further be used to get resistant progeny. It is expected that if both susceptible and resistant varieties are crossed over, then the off springs shall be highly disease resistant and may acquire the other desired characteristics.

TITLE		Biochemical analysis of Indian varieties of honey and sequence analysis of Antimicrobial Peptides(AMPs)	
SL.NO	USN NO.	NAME	
1	1MS13BT003	Aditi Jannu	
2	1MS13BT039	Rakshitha S Kamath	
3	1MS13BT062	Vaishnavi C R	
MENTOR NAME		External Mentor-Dr. Sravanti V, Assistant Professor, Dept. of Biotechnology, RIT.	
ABSTRACT			
<p>Honey is reported to have several medicinal properties including anti-cancerous properties, which is attributed to the presence of Antimicrobial peptides (AMPs). AMPs are small molecules which are a major part of the innate immunity of the insect family and are potential therapeutics in this age of microbial MultiDrug Resistance (MDR). The current study, deals with firstly a comparative biochemical analysis of commercial and unprocessed varieties of Indian honey. Secondly, bioinformatics analysis of AMPs present in honeybee and other organisms has been conducted. Our results indicate that AMPs are conserved across the organisms except for a few single amino acid substitutions. Sequence based analysis indicates that AMPs of honeybee are Glycine rich with pI ranging from 6-10. Around 40 AMPs of honey have been modeled using homology based tool-SWISS MODEL and with threading based I-TASSER tool. This study is the first of its kind which focuses on biochemical properties of Indian varieties of honey and also provides sequence and structure based analysis that can aid in the development of novel peptide based antibiotics.</p>			

TITLE		Incorporation of Silver and Zinc oxide Nanoparticles synthesised from Ocimum tenuiflorum into Dental prosthetic materials and their effect on Streptococcus mutans	
SL.NO	USN NO.	NAME	
1	1MS13BT009	Chaithra J Achar	
2	1MS13BT017	Jhanavi M	
3	1MS13BT020	Kiran S	
4	1MS13BT051	Shriraksha	
MENTOR NAME		Internal Mentor- DDr. Ahalya N, Associate Professor, Dept. of Biotechnology, RIT Dr. Dhamodhar P, Associate Professor, Dept. of Biotechnology, RIT	
ABSTRACT			
<p>Dental caries is a worldwide public health problem for which Streptococcus mutans has been identified as the possible infectious etiology. The transition from microparticles to nanoparticles (b100 nm in diameter) involves an increment in relation to the surface area, among other changes in properties. The nanoparticles will be synthesised by green method and characterized. Once the antibacterial nature of the synthesised nanoparticles is established, it will be incorporated into dental prosthetic materials and their antibacterial activity on clinical isolates of S. mutans will be tested. Hence we can channel such biogenic nanoparticles to curb and eventually eliminate S. mutans. This would make sure that oral infection treatments get new direction.</p>			

TITLE	Standardized Multi – Pigments Sensitized Solar Cells For Augmentation Of Photo – Electricity	
SL.NO	USN NO.	NAME
1	1MS13BT008	Ashwini P S
2	1MS13BT026	Meghana C Mendon
MENTOR NAME	External Mentor-Mr.Lokesh KN , Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		

The solar cell we are developing in this project is Standardised multi-pigment solar cell which mimic photosynthesis. The main objective of this project is to determine several factors affecting the performance of MPSP, such as the thickness of TiO₂ and concentration of electrolyte. Although the efficiencies of MPSP at the present stage are lower than those conventional solar cells, the high ratio of the performance/price still identifies MPSP as an attractive potential solar cell technology to be commercialized.

It is composed of the TiO₂ (electron carrier) and organic dye (electron generator), which will gain its original state by electron obtained from electrolyte solution. MPSP produce electricity through electron transfer. Sunlight passes through the conductive glass electrode. The dye absorbs the photons of light and one of the electrons in the dye moves to excited state referred to as photo-excitation. The excited electron jumps to the titanium dioxide layer and diffuses across the film. The electron then reaches the counter electrode, which produces electric current and can be measured.

TITLE	Development of a Bacillus subtilis based bio-indicator model for bio-monitoring of UV radiation	
SL.NO	USN NO.	NAME
1	1MS13BT044	Sakshi Jain
2	1MS13BT048	Shishira Suresh
3	1MS13BT057	Suraj.S
4	1MS13BT063	Varun.M.Rajagopal
MENTOR NAME	Internal Mentor-Dr. Bindu.S , Professor & HOD, Dept. of Biotechnology, RIT.	
ABSTRACT		

Microorganisms are constantly exposed to varying physical, chemical and biological conditions which induce morphological, biochemical and genetic changes in them. This study was conducted to understand the microbiological and biochemical changes in bacteria under conditions of UV stress. Bacillus subtilis MTCC441 was chosen as the model organism for this study as it can resist several environmental stresses. It has developed several mechanisms to overcome stress. It is observed that the organism tries to overcome these stresses by sporulation, biofilm formation, a biosurfactant and serine endopeptidase helps to counter stress in several ways by inhibiting the growth of competing organisms, regulating cell number in its colonies and also acting as an antioxidant. With increase in time of UV exposure a corresponding increase in the specific activity of Subtilisin was observed. Microscopy related to the above mentioned stress mechanisms are performed for a better understanding. Protein profiling is done using SDS PAGE to confirm the fact that specific activity of Subtilisin increases as UV exposure time increases by analysing the intensity of the bands formed.

TITLE		In silico analysis of inhibitory potential of compounds from Curcuma amada Roxb against therapeutic targets of Helicobacter pylori: ADMET screening and molecular docking studies	
SL.NO		USN NO.	NAME
1		1MS13BT036	Pavan. S. Kamath
2		1MS13BT056	Subramaniam Sundareshan
MENTOR NAME		External Mentor- Mr. Manikanta Murahari (Assistant Professor) & Dr. Saraswathy (Associate Professor), Faculty of Pharmacy, Ramaiah University of Applied Sciences. Internal Mentor- Mr. T P Krishna Murthy, Assistant Professor, Dept. of Biotechnology, RIT.	
ABSTRACT			
<p>The identification and use of natural compounds as drug molecules has received considerable attention in modern drug discovery. A rise in antibiotic resistance of Helicobacter pylori, has surged the emergence to discover anti-H.pylori agents from natural compounds. Our study is an in silico structure based virtual screening aimed at revealing possible interactions of 130 inhibitory chemical constituents of C. amada against 5 selected drug targets of the bacterium, Type II dehydroquinase, Fructose-1,6-bisphosphate aldolase. The QikProp tool was used to obtain the pharmacokinetic properties (ADMET) of all the stereoisomers of the 130 chemical entities and revealed all are in line with Lipinski’s rule. Considering the highest glide scores from rigid receptor docking, gentisic acid, a phenolic compound showed hydrogen bond interaction with 4 targets, except with glutamate racemase with G scores of -8.316, -7.785, -7.991 and -8.427. The results are promising and can be explored further to study their anti-H.pylori activity in vitro and in vivo.</p>			

TITLE		Investigation of Antibacterial and Cytotoxic Activity of Mixed Metal Oxide Nanoparticles	
SL.NO		USN NO.	NAME
1		1MS13BT035	Patil Bhavana
2		1MS08BT067	Tejaswini.N.M
MENTOR NAME		External Mentor- Dr.Harikrishna, Assistant Professor, Dept. of Chemistry, RIT Internal Mentor- Mr. Samrat K, Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT			
<p>Despite extensive research on antimicrobial activities of nanometal oxides, their application is limited due to relatively lower efficiencies and requirement of high dose compared to organic agents. However, in recent years research on combinations of nanometal oxides has gained extensive importance due to various advantages. In this project we show that use of mixed metal oxides namely ZnO and Fe2O3 exhibit enhanced antibacterial activity compared to their individual counterparts. We have prepared ZnO : Fe2O3 mixed oxides in the ratios of 1:1, 1:0.5 and 0.5: 1 by solution combustion method and investigated its antibacterial activity on gram positive and gram negative bacteria. The antibacterial activity was carried by agar well diffusion method shows that mixed oxide prepared with ratio of 1:1 showed higher antibacterial efficiency compared to individual oxides and mixed oxides prepared with other ratios. Further, anticancer activity on MCF-7 cell lines showed significant activity for the ZnO : Fe2O3 in the ratio of 1:1 than other combinations.</p>			

TITLE	Comparison of immunoreactivity of antigen B and whole cyst sonicate antigen of neurocysticercosis	
SL.NO	USN NO.	NAME
1	1MS14BT400	Bhavana CR
2	1MS13BT065	Simran Singh
MENTOR NAME	External Mentor- Dr. Shriphad Patil, NIMHANS, Bangalore Internal Mentor- Mr. Y S RaviKumar , Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		
Neurocysticercosis(NCC) being one of the most common causes of epilepsy is caused by Taenia solium, a metacestode. NCC is one of the most prominent diseases in developing countries like India, Africa, and China etc. A review of literature was conducted and it was found that NCC has no gold standard technique that is used to diagnose the disease. We found that the two potent antigens used were whole cyst sonicate and Antigen B. The qualitative analysis of the specificity and sensitivity of the antigens, antigen B and whole cyst sonicate was performed using indirect ELISA. The whole cyst sonicate antigen was prepared using the ultrasonic method and antigen B was extracted using salting out technique from the porcine cyst. CSF samples were collected from the inpatients visiting the National Institute of Mental Health and Neurosciences and were Immunodiagnosed using the extracted antigens. Out of the 40 CSF samples used in the study, 12 samples were found to be positive and 6 were border line for anticysticercal antibodies while 12 samples were found to be positive for antigen B antibodies.Immune response to whole cyst sonicate was much more than antigen B. However antigen- B appears more specific but with lesser sensitivity whereas whole cyst sonicate was found to be more sensitive but less specificity.		

TITLE	Analysis of Sirtuin levels in TLR2 knockout mice	
SL.NO	USN NO.	NAME
1	1MS13BT004	Aishwarya Raghuraman
MENTOR NAME	External Mentor- Dr.N. Ravi Sundaresan, Assistant Professor, MCBL, IISc, Bangalore. Internal Mentor- Dr. Bindu S , Professor & HOD, Dept. of Biotechnology, RIT.	
ABSTRACT		
<p>Sirtuin are a class of proteins that possess either mono-ADP-ribosyltransferase, or deacylase activity, including deacetylase, desuccinylase, demalonylase, demyristoylase and depalmitoylase activity. Sirtuins have been implicated in influencing a wide range of cellular processes like aging, transcription, apoptosis, inflammation and stress resistance, as well as energy efficiency during calorie restriction. Sirtuins can also control circadian clocks and mitochondrial biogenesis. TLRs are highly conserved from Drosophila to humans and share structural and functional similarities. They recognize pathogen-associated molecular patterns (PAMPs) that are expressed on infectious agents, and mediate the production of cytokines necessary for the development of effective immunity. A transgenic mouse which has functionally deficient TLR2 can trigger several complications at cellular level which can influence expression level of various proteins including sirtuins. Here we studied the expression profile of sirtuins in TLR2 KO mice heart lysate.</p>		

TITLE		Characterization of EMT phenotype in epithelial and mesenchymal sub-populations of breast cancer cell lines	
SL.NO	USN NO.	NAME	
1	1MS13BT005	Anisha Prasad	
MENTOR NAME	External Mentor- Dr.Annapoorni Rangarajan, Department of MRDG, IISc, Bangalore		
	Internal Mentor- Dr. Y S RaviKumar , Assistant Professor, Dept. of Biotechnology, RIT		
ABSTRACT			
Metastasis, the spread of cancer, is found to be associated with Epithelial-mesenchymal transition (EMT) which is a series of events that converts polarized epithelial cells to migratory mesenchymal cells. Quantification of the extent to which EMT has taken place within the tumour will allow grading of the tumour, aimed at providing prognostic insight and reanalyzing therapeutic strategy. The aim of this project is to determine whether such distinct epithelial-like and mesenchymal-like subpopulations exist within parental populations. Here, we used different breast cancer cell lines for our study as well as lung adenocarcinoma cell line A549. Two subpopulations were isolated based on their differential adhesion properties and analyzed for expression of EMT markers (E-cadherin, N-cadherin, Vimentin, FN1 (fibronectin 1), ZO-1 (Zona Occludens – 1), stemness, transcription factors (Nanog, SOX2, Twist) and markers for drug resistance (ABCB1, ABCG2). Our preliminary results confirm the existence of epithelial and mesenchymal subpopulations within the parental populations, indicating that, at any given time, a fraction of cells within the population has initiated the EMT program. We would like to determine the degree of plasticity (i.e interconversions) within the epithelial and mesenchymal subpopulations. Another question that intrigues us is what drives a small fraction of cells within the population to initiate the EMT program.			

TITLE	Role of Activin A signalling in Glioblastoma	
SL.NO	USN NO.	NAME
1	1MS13BT037	Rachana N
2	1MS13BT042	Rithvika Murthy
MENTOR NAME	External Mentor- Dr.Prof. P Kondaiah, Dept. of MRDG, IISc, Bangalore Internal Mentor- Dr.Pradeepa K , Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		
<p>Aim of theis work is to investigate the role of Activin A signaling by using TGF β as a positive control,to perform Western Blot and identify the phosphorylated SMAD proteins (PS2/S3),to perform RT-PCR and observe transcription of genes and to check migration of cancer. Glioblastoma, also known as glioblastoma multiforme (GBM), is the most aggressive cancer that begins within the brain. They are tumors that arise from astrocytes—the star-shaped cells that make supportive tissue of the brain. These tumors are usually highly malignant. Activin is a protein complex. The transforming growth factor (TGF) β superfamily of secreted factors is comprised of over 30 members including Activins, Nodals, Bone Morphogenetic Proteins (BMPs), and Growth and Differentiation Factors (GDFs).</p> <p>We isolated proteins from cancer cell lines which were treated with activin and TGF-beta and performed western blot to check phosphorylated SMAD proteins. We also isolated RNA from the same treated cell lines and performed RT-PCR to check the transcription of genes. We also performed Migration assay to check EMT (Epithelial to Mesenchymal Transition).</p> <p>We observed that Activin plays a role in cancer growth and progression.</p>		

TITLE	Documentation and Molecular Characterization of Mushroom from Western Ghats of Karnataka	
SL.NO	USN NO.	NAME
1	1MS13BT040	Ramya K
2	1MS13BT034	P Kanishka Devi
MENTOR NAME	External Mentor- Dr.Earanna, GKVK, Bangalore. Internal Mentor- Dr. Pradeep, Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		

Evergreen forest canopy of the Western Ghats geography is a habitat of biodiversity.

Cool and humid climate is favorable climate for establishment of mushroom flora.

Mushrooms growing in the wild are picked up and eaten by mankind from the time immemorial. Humid weather and high rainfall during the monsoon is a congenial atmosphere for the establishment of many types of mushroom flora which include edible, medicinal and poisonous. In the present study three different mushrooms were collected from Kemmanu gundi forest area during the first week of February 2017 and identified using 18S rDNA sequencing.

TITLE	Study of Translational machinery via Post Translational Modifications	
SL.NO	USN NO.	NAME
1	1MS13BT043	Rohan Raghav Sharma
MENTOR NAME	External Mentor- Dr.N.Ravi Sundaresan, MCBL, IISc, Bangalore Internal Mentor- Dr. M.Gokulakrishnan, Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		

RHEB also known as Ras homolog enriched in brain is a GTP-binding protein that is largely involved in the mTOR pathway and the regulation of the cell cycle. SIRT1 is a NAD⁺ dependent deacetylase that is known to regulate caloric restriction mediated longevity in model organisms, and has also been linked to the insulin/IGF signalling pathway. Studies have demonstrated that SIRT1 deficiency results in elevated mTOR signalling, which is not abolished by stress conditions. Acetylation involves transfer of the acetyl group to the lysine residues of the protein. To further understand the role deacetylation and acetylation play one can generate mutant strains of the Rheb protein. Mutation involves changing the Lysine residue to another Amino acid and is brought about by Site Directed Mutagenesis. Generating mutant strains in mammalian cultures is difficult due to difficulty associated with culturing and long growth period. For this reason 'Escherichia coli' XLB 1 cells are chosen for generation of protein mutants. Hopefully once the mutants have been generated they can be used to transfect mammalian cell cultures and upon subsequent protein expression, analysis can be done to see difference in mTOR pathway regulation by comparing with that of protein expressed by WT RHEB.

TITLE		Generation of Transgenic Plants Expressing Mutant Syvv Rep Protein	
SL.NO	USN NO.	NAME	
1	1MS13BT028	Muthanna B D	
MENTOR NAME	External Mentor- Dr.P V Shivaprasad, NCBS, Bangalore. Internal Mentor- Dr.P. Sharath R, Assistant Professor, Dept. of Biotechnology, RIT.		
ABSTRACT			
<p>Viruses are the reason of many plant diseases which are responsible for the huge losses in crop quantity and quality. Plant viruses are regularly of the genera Geminiviridae. They are either ssDNA or dsDNA viruses. SYVV (synedrella nodiflora yellow vein virus), is monopartite, having DNA-A with a DNA-β satellite as its genomic constitution. Through literature analysis, Rep protein (AC1) is known to bind to the iteron sequence in DNA-A and assist in its replication by Rolling cycle replication and it is also known that DNA- β replicates by Rolling cycle replication. However, the method by which Rep protein binds to DNA- β is not revealed. To understand this, the conserved N-terminal amino acid sequences in the Rep protein (AC1) have been mutated, thereby understanding the mechanism how the Rep protein binds to DNA- β and maintains the rolling cycle replication in the host. Future insight can be gleaned from this to understand the method of infection of viruses in plants.</p>			

TITLE	Understanding mRNA fate decesions	
SL.NO	USN NO.	NAME
1	1MS13BT029	Mythili Ravishankar
MENTOR NAME	External Mentor- Dr.Purusharth Raju, Dept. of Biochemistry, IISc, Bangalore Internal Mentor- Dr. Prabha M , Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		
<p>The central dogma of molecular biology describes how the language of nucleic acids is translated into the language of amino acids. This is the fulcrum around which entire biology revolves because the steps of transcription and translation are the ones which regulate expression of genes and gene expression is what genetically defines an organism. Over years of research, scientists have studied in detail the regulation of translation (and hence gene expression) in the initiation step of translation. This is one of the key steps in translation and inhibiting this step can ultimately inhibit that particular gene from expressing g itself. Rajyaguru et al in 2012 published a paper that described the repression activity of certain RGG motif proteins including Scd6, Sbp1, Npl3. It is also well-known in literature that proteins containing regions rich in Glutamine (Q) and Asparagine (N) tend to aggregate among themselves. This project involves understanding the role of QN rich region of my protein of interest in its translation regulation activity and aggregation with other proteins containing similar QN rich domains. Understanding this mechanism in detail can give further insight into the mechanism behind aggregation of proteins in neurodegenerative diseases like Alzheimer's disease. It may also help us understand some drug targets of cancerous cells so that their translation can be repressed, and ultimately kill the cancer cell line itself.</p>		

TITLE	Construction of plasmid DNA constructs for genome editing using CRIS-PR-Cas9 technology	
SL.NO	USN NO.	NAME
1	1MS13BT023	M Tanvi Somiah
2	1MS13BT058	Swathi Radha
MENTOR NAME	External Mentor- Dr.PRohan H Kamat, NCBS, Bangalore. Internal Mentor- Mr. T.P. Krishnamurthy, Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT		

The project revolves around the use of the CRISPR/Cas9 technology to generate an effective system that functions similar to an endonuclease mechanism, that is capable of gene silencing. The CRISPR/Cas9 technology has gained exponential popularity as a method of gene silencing due to several advantages that it offers. Arguably, the most advantages of this method of gene editing is its simplicity and efficiency. Since it can be directly applied in embryo, CRISPR/Cas9 reduced the time required to modify target genes.

Our aim in this B.E project is to be able to successfully design a CRISPR/Cas9 system using pTZ57R as the plasmid vector, into which our ~6kb cas9 insert derived from pX459 is to be incorporated. DH5 is our choice of cells that we will be transforming into. The Cas9 cassette also consists of a Puro reporter gene that serves as a selection marker. The methods chosen to be followed includes PCR based cloning, as well as restriction enzyme based cloning.

TITLE	Prototype of Copper based Plug Flow Reactor for Immobilization of ZnO nanoparticles for Photo-degradation of textile effluent	
SL.NO	USN NO.	NAME
1	1MS13BT041	Riddhi Rajeev Dutta
2	1MS13BT052	Shwetha Manohar Nayagar
MENTOR NAME	Internal Mentor- Dr. Chandra Prabha M N , Associate Professor, Dept. of Biotechnology, RIT	
ABSTRACT		

The photo-degradation was performed for various individual dyes (Rose Bengal, Titan Yellow, Methyl Orange and Congo Red) and mixed dye solution using ZnO nanoparticles. These nanoparticles were synthesised in a green-mediated way by boiling fine cut leaves of Calotropis gigantea in water to about 80° C, and Zinc nitrate hexahydrate was added to this extract and boiled till a deep yellow coloured paste was formed. This mixture was then collected in a ceramic crucible and calcined in a muffled furnace at 400° C for 1 hour. The foam formed was mashed in a mortar-pestle to yield the nanoparticles. Using these nanoparticles, optimization studies were performed for catalyst loading, immobilization on copper strips, pH and reuse of strips, under a UV lamp fitted at an optimized distance from the glass vessel containing the dye solution, placed on a magnetic stirrer. Finally, the results from these studies were applied in implementing photo-degradation of textile effluent by immobilization of ZnO nanoparticles on a Copper based plug-flow reactor with the aid of a pump for establishing different flow rates of the dye solution.

TITLE		The role of Carboxyl esterase with Lithium for drug metabolism and anticancer activity in wild type p53 U87 cell lines and mutant P53 LN 229 brain tumor cell lines	
SL.NO	USN NO.	NAME	
1	1MS13BT001	Abigail D Souza	
2	1MS13BT018	Joewin Shamalina	
3	1MS13BT021	Kruthika H Patel	
4	1MS13BT060	Sweety Nahar	
MENTOR NAME		External Mentor- Dr.Purusharth Raju, Dept. of Biochemistry, IISc, Bangalore Internal Mentor- Dr. Prabha M , Assistant Professor, Dept. of Biotechnology, RIT	
ABSTRACT			
<p>Hydrolytic enzymes break down biomolecules into their simpler units. The role of hydrolytic enzymes in a many pathological conditions such as brain tumors, neurodegenerative diseases like Alzheimer's disease. Carboxyl esterase (CE) one of the Hydrolase which is a drug metabolizing enzyme hydrolyzes molecules of carboxylic acid ester, amide and thioester which categorized as phase-I drug metabolizing enzymes including for anticancerous drugs. Specific activity of Carboxyl esterase (CE) was estimated in wild type p53 U87 cell lines and mutant p53 LN 229 brain tumor cell lines for untreated and treated with Lithium chloride. Specific activity is the ratio of Total activity by Total protein. Total protein content related to the cell stability, function and regulation for maintenance of cellular activity. In current study LiCl2 is not responsible for increasing protein activity which signifies less activation of cancer causing protein and showed anticancerous activity in LN 229 brain tumor cell lines.</p>			

DEPARTMENT OF **CHEMICAL ENGINEERING**



Project Abstracts

2016 - 2017



TITLE	Study on Electro flocculation to Treat Carwash Wastewater	
SL.NO	USN NO.	NAME
1	1MS13CH032	MYTHRI R
2	1MS14CH409	SUMA
3	1MS14CH410	YAJNESH KUMAR
4	1MS12CH066	ARPITHA A. NAIR
MENTOR NAME	Dr.G.M.Madhu, Associate Professor and Sri J.Koteswararao, Assistant Professor, Department of Chemical Engineering, RIT	
Funded By	Indian Institute of Chemical Engineers(IIChE) , BRC	
ABSTRACT		

The present study is aimed to find the pollution potential of the carwash service wastewater and to check the feasibility of using electroflocculation to treat the same. The wastewater was collected and tested for parameters such as Total Dissolved Solids (TDS), Turbidity, Chemical Oxygen Demand (COD), oil and grease content. The characterization results revealed that the wastewater was composed of detergents, gasoline residue and soot, road grime, oil and grease. A 650 ml container with metal as anode and graphite as cathode was setup to perform batch mode laboratory experiments. Production of metal cations was able to neutralize negatively charged particles, which bind together to form aggregates of flocs composed of a combination of pollutants and metal hydroxide. The influence of operating variables such as electrical potential, energy required was estimated for different electrode material (Aluminium, iron and copper). It was found that Aluminium as the anode was the best electrode material as it didn't impart any colour to the treated water and a high turbidity removal efficiency of 99.86% was obtained by applying 25V. Energy consumed was found to increase from 2 to 12.6 kWh/m³, when the potential was increased from 10 to 30 V. Iron and copper was imparting color to the treated water.

TITLE	Catalytic Conversion of Glycerol to Fuel Additives	
SL.NO	USN NO.	NAME
1	1MS13CH017	HEZIL NORONHA
2	1MS13CH018	INDRAJA S.
3	1MS13CH020	JAYANTH V. REDDY
4	1MS13CH054	SPOORTHY S.
MENTOR NAME	Mrs. V. Sravanthi, Assistant Professor, Department of Chemical Engineering, RIT	
Funded By	Karnataka State Council for Science and Technology	
ABSTRACT		

In recent years, due to the increased biodiesel production, glycerol, its byproduct is also gaining significance importance. Various useful reactions are studied to convert glycerol into value – added products. Esterification of glycerol is one among them and the products obtained are glycerol esters, namely mono-, di- and tri-acetins which have wide range of applications especially as fuel additives. The solid acids catalyst was prepared by combustion method and was modified by addition of Sulphate ions. From the characterization result, it was found that the addition of sulfate ions significantly enhanced the surface acidity of mixed oxide catalyst. Interestingly, the SO₄²⁻/CeO₂- Al₂O₃ solid acid showed higher surface area and acidity as well. The sulphated CeO₂-Al₂O₃ was applied for esterification of glycerol and acetic acid at different temperatures with different mole ratio of glycerol to acetic acid with varying amount of catalyst. The results showed that sulphated solid acid catalysts are the promising heterogeneous catalysts for esterification of glycerol. The kinetic model was developed and the activation energies were determined.

TITLE	Synthesis of Acetins using Extracted Lipase Enzyme	
SL.NO	USN NO.	NAME
1	1MS13CH056	SRISTI KASHYAP
2	1MS13CH062	NAWAL RABIA NIZAR
3	1MS14CH404	PUNEETH DHAMODAR R
4	1MS14CH406	RAKSHITH R
MENTOR NAME	Dr. Rajeshwari M. Kulkarni, Assistant Professor, Department of Chemical Engineering, RIT	
Funded By	Karnataka State Council for Science and Technology	
ABSTRACT		

In the present study, enzymatic synthesis of acetins was achieved by the reaction of glycerol and acetic acid using lipase. Acetin is mainly used as a fuel additive as an antiknock agent which can reduce engine knocking in gasoline and it improves cold and viscosity properties of biodiesel. Lipase was extracted from germinated wheat seed (*Triticum aestivum*) and castor bean seed (*Ricinus communis*). Higher hydrolytic activity was observed with germinated wheat seed. Lipase powder (Source Steapsin) commercially available and extracted lipase from germinated wheat seed were employed for the comparative studies on production of acetins. The effects of various parameters such as mole ratio of reactants, enzyme concentration and solvents were investigated for the optimum conversion of glycerol to acetins. It is expected that the results of this study can contribute to environment- friendly acetins production.

TITLE	Design of a Solar Powered Water Desalination Unit with Phase Changing Material (PCM)	
SL.NO	USN NO.	NAME
1	1MS13CH011	DEEPAK . R
2	1MS13CH013	DIVYA .H.P
3	1MS13CH040	PAVAN KUMAR .S
4	1MS14CH407	SHREYAS . S
MENTOR NAME	Sri. K A Badarinarayana, Associate Professor, Department of Chemical Engineering, RIT	
Funded By	Karnataka State Council for Science and Technology	
ABSTRACT		

The main purpose of our project is to design a water desalination system that can purify water from nearly any source, a system that is relatively cheap, longer working period with the help of phase changing material (PCM) and renewable solar energy. The motivation for this project is the limited availability of clean water resources and the abundance of impure water available for potential conversion into potable water. In addition, there are many coastal locations where sea water is abundant but portable water is not available. Our project goal is to efficiently produce clean drinkable water from solar energy conversion. Desalination is one of many processes that can be used for water purification. Solar Distillation is an attractive process to produce portable water using free of cost solar energy. Solar energy is used directly for evaporating water inside a device usually termed a 'Solar still'. Solar stills are used in cases where rain, piped, or well water is impractical, such as in remote homes or during power outages. Different versions of a still are used to desalinate sea water, in desert survival kits and for home water purification. Solar desalination is an attractive alternative because of its simple technology, non-requirement of highly skilled labor for maintenance work and low energy consumption. One of the major drawback of solar powered desalination is the efficiency and its non-ability to work with partial or no sun. A solar still has been designed for desalination of water and evaporation capacity of the designed still was determined.

TITLE	Investigation of Sea Shells for Heavy Metal Removal from Aqueous Streams	
SL.NO	USN NO.	NAME
1	1MS13CH026	LAKSHMI PRIYA
2	1MS13CH049	SHIVANI RAJ
3	1MS12CH049	ROHITH KUMAR JAISWAL
4	1MS11CH006	AISHWARYA SARASWAT
MENTOR NAME	Dr. Mahendra Chinthala, Assistant Professor , Department of Chemical Engineering, RIT Dr. Ramasivakiran Reddy, Assistant Professor, Department of Chemical Engineering, RIT	
ABSTRACT		
<p>Industrial effluents containing dissolved heavy metals at very high concentrations when discharged from the industries contaminate the water bodies in their proximity. Effective treatment of water streams and toxic spills containing heavy metals depend on the rapid removal of high concentrations of metal ions. Treatment methodology must be as cost effective as possible, particularly for regions that allocate funds for expensive remediation programs.In the present study, Bivalves, one variety of seashells found in the local beaches of Karnataka was investigated for the biosorption of heavy metals like Lead, Zinc and Cadmium from aqueous streams. The powdered seashells were characterized using SEM-EDAX, FTIR and BET method. The powdered seashells are mainly composed of CaCO3. The equilibrium sorption capacity of seashell powder for Pb, Zn and Cd was determined to be 333.33, 111 and 500 mg/g, respectively. Equilibrium sorption of the studied heavy metals was following Langmuir adsorption model. The optimum pH for sorption of these heavy metals was in the range of 5 to 7. The equilibrium time for sorption of Pb, Zn and Cd was found to be 60, 70 and 90 minutes, respectively. The sorption kinetics was observed to follow Pseudo Second Order Kinetic Model.</p>		

TITLE	Studies on Reaction Kinetics of Partial Oxidation of Glucose to Sodium Gluconate in a Three Phase Slurry Reactor using Nano Cr/Al Catalyst.	
SL.NO	USN NO.	NAME
1	1MS13CH001	ADITHIA MANOHAR
2	1MS13CH024	KAMIL AMAN
3	1MS13CH028	MADHURIMA BHATTACHERJEE
4	1MS13CH052	SOHAM DE ROY
MENTOR NAME	External Mentor: Mr.Ravi Sadasivan Internal Mentor: Dr. Brijesh, Associate Professor, Department of Chemical Engineering, RIT	
Funded By	Indian Institute of Chemical Engineers(IICHe) , BRC	
ABSTRACT		
<p>The present work mainly focus on the production of Sodium Gluconate, by the partial oxidation of Glucose. Three phase slurry reactor and the advancements in it has proven to be the preferred technology for heterogeneous reactions. A three-phase slurry reactor is fabricated with the provision for pH meter, temperature sensor, heating coil, baffles and 6-blade turbine agitator. On the other hand, chromium based catalyst is easy to produce, does not get deactivated easily and is economical at the same time. Therefore, we have chosen chromium catalyst on an aluminum support (Cr2O3-Al2O3) as the suitable catalyst for this work and combustion synthesis method is chosen to prepare the same. For this method, chromium nitrate is used as precursor, aluminum nitrate as support and glycine as fuel. The</p>		

number of experiments to be carried out is initially calculated to be 243 and Taguchi method is used for minimizing the number of experiments to 18 without compromising on results. High Performance Liquid Chromatography (HPLC) method is chosen for the analysis of the final product i.e. Sodium Gluconate. Once the analysis is completed, the data obtained is used to find the optimum condition for the process and kinetic studies is performed for this optimum condition

TITLE	Study and Characterization of Tin plating on ABS Plastics	
SL.NO	USN NO.	NAME
1	1MS13CH005	AMAR KUMAR
2	1MS13CH014	G R NEERAJ DODDAMANE
3	1MS13CH025	KIRAN KUMAR B R
4	1MS13CH034	NEETHA N RAJ
MENTOR NAME	External Mentor: Mr. Chandrashekar N U, Kongovi Electronics Limited, Bangalore Internal Mentor: Dr. G M Madhu, Associate Professor, Department of Chemical Engineering, RIT	

ABSTRACT

Plating is done to achieve finishing for metal and non-conductive materials. ABS (Acrylonitrile-Butadiene-Styrene) plastic has butadiene part uniformly distributed over the acrylonitrile-styrene matrix which makes it unique for plating process. ABS possesses excellent toughness, good dimensional stability, chemical resistance, and cheapness. The Present work deals with the use of Tin for coating over ABS plastic using Plating Rectifier as Tin, which is readily available, economical, offers good conductivity and superior corrosion resistance. Prior to the main objective i.e., Tin Plating, ABS plastic samples were pre-treated which includes etching, neutralization, activation, acceleration. Once the pre-treatment was completed the samples were electroplated with copper and studies were carried out for various concentration (160-220g/l), voltage (2-8V) and agitation (500rpm) and thickness was measured. Optimum parameters were determined based on thickness, whisker formation and burnout conditions. Similarly studies were performed for nickel coating. Acid Tin plating studies were separately carried on copper plated ABS plastics and nickel plated ABS plastics

TITLE	Structural Study and Applications of HDPE/ Copper Zirconium Oxide Polymer Nanocomposite	
SL.NO	USN NO.	NAME
1	1MS13CH012	DEVANSHU SRIVASTAVA
2	1MS13CH027	MADHAVI PANDEY
3	1MS13CH042	PRANJALI RANADE
4	1MS13CH058	SUJATA MAZUMDAR
MENTOR NAME	Dr. G. M. Madhu, Associate Professor, Department of Chemical Engineering, RIT	

ABSTRACT

The purpose of this project is to study the structure and applications of HDPE/ Copper Zirconium Oxide polymer nanocomposite. Copper Zirconium Oxide nanoparticles were synthesized using solution combustion method using three different fuel sources and characterization was done using SEM, XRD and EDAX. The SEM images confirmed the nanoparticles of average particle size ranging from 80 to 130 nanometer, for the three samples. The polymer nanocomposite was fabricated for different weight percentage of filler nanoparticles in the HDPE matrix and the samples are being tested for mechanical and electrical properties

TITLE	Production of Biodiesel from Wastewater Algae using Nano Catalysts	
SL.NO	USN NO.	NAME
1	1MS13CH003	AKANKSHA KALA
2	1MS13CH004	AKASH HEGDE
3	1MS13CH035	NEETHU PHILIP THOMBRA
4	1MS13CH039	N.V SANTHOSH KUMAR
MENTOR NAME	Ms Annapurna S.M, Assistant Professor, Department of Chemical Engineering, RIT Dr Ramasivakiran Reddy, Assistant Professor, Department of Chemical Engineering, RIT	
ABSTRACT		
Biodiesel, a biodegradable and non-toxic alternative fuel is derived from renewable, domestic resources. Exploring ways to reduce the high cost of biodiesel is of much interest in recent biodiesel research, especially for those methods concentrating on minimizing the raw material cost. The use of oil derived from waste water algae instead of virgin oil to produce biodiesel is an effective way to reduce the raw material cost. In addition, using algal oil could also help to control the growth of algae in waste water bodies. The project aims to develop a cost-effective and efficient solution to the frequent use of homogenous catalysts in transesterification and instead replacing it with a heterogeneous nanocatalyst. Neem leaves are used in order to synthesize the Calcium Oxide nanoparticles which are subsequently used catalyst. The characterization of catalyst is carried out by SEM. The extraction of algal oil is derived by modified Bligh and Dryer method. The characterization of derived algal oil is done by GC-MS. Wastewater algae from lakes as well as freshwater algae are incorporated along with transesterification by Calcium Oxide nanocatalyst and a comparative study is done with Sodium Hydroxide catalyst to compare efficiency. The biodiesel produced from both algae's is characterized by FTIR.		

TITLE	Studies on Biohydrogen Production by Photo Fermentation	
SL.NO	USN NO.	NAME
1	1MS13CH006	AMRITESH KUMAR SONI
2	1MS13CH007	ANURAG KUMAR
3	1MS13CH037	NIKITA CHRISHEL CORDA
4	1MS12CH033	MOHD.ABDUL AMAN
MENTOR NAME	External Mentor: Dr. Gokulakrishnan, Assistant Professor, Department of Biotechnology, RIT Internal Mentor: Dr. Brijesh, Associate Professor, Department of Chemical Engineering, RIT	
ABSTRACT		
<p>In this project, we propose to produce H₂ biologically (light-dependent fermentative method) which is considered as the most environmentally friendly route of producing H₂. In particular, hydrogen production through dark or photo fermentative conversion of organic substrates is of great interest due to its dual function of waste reduction and clean energy production, thereby acting as a promising option for bio-hydrogen production.</p> <p>Steps involved in this process are:Batch studies will be carried out to optimize the growth conditions of selected micro organisms. Batch studies to evaluate the conditions of temperature, pH, light intensity etc for the microorganism to enhance the hydrogen production.Proposed investigations will be carried out in a one litre bioreactor under anaerobic conditions. Gas generated will be analyzed for its hydrogen content using gas chromatography with thermal detector. The volumetric production of gas will be determined by water displacement method.The controlling parameters such as temperature, pH, substrate concentration, inoculum level etc will be optimized using statistical methods.</p>		

TITLE	Process Intensification of Producing Bio-Diesel from Waste Oils	
SL.NO	USN NO.	NAME
1	1MS13CH045	RIJU DHAR
2	1MS13CH047	SAMI AHMED
3	1MS13CH055	SRIKANTH VISHWANATH
4	1MS13CH057	SRIVATSA KULKARNI
MENTOR NAME	External Mentor : Dr. Sivakumar S, Chief Scientist, SABIC, Bangalore Internal Mentor : Ms. Annapurna SM, Assistant Professor, Department of Chemical Engineering, RIT	
ABSTRACT		
<p>Biodiesel, a biodegradable and non-toxic alternative fuel, is derived from renewable, domestic resources. Exploring ways to reduce the high cost of biodiesel is of much interest in recent biodiesel research, especially for those methods concentrating on minimizing the raw material cost. The use of waste cooking oil instead of virgin oil to produce biodiesel is an effective way to reduce the raw material cost. The process of transesterification is affected by the mode of reaction condition, molar ratio of alcohol to oil, type of alcohol, type and amount of catalysts, reaction time and temperature and purity of reactants. The objective of this project is to design a complete continuous process and assess its performance from the viewpoint of an entire plant. This is an attempt to explore potential alternatives to current biodiesel production methods, thus contributing to biodiesel commercialization. The aim is to carry out process simulation on alkali- and acid catalyzed transesterification and develop continuous process flow sheets to produce biodiesel from waste cooking oil. A technical assessment of each process will also be presented.</p>		

TITLE	Synthesis of Amides Using Various Coupling Reagents	
SL.NO	USN NO.	NAME
1	1MS13CH002	AJAY PRABU B
2	1MS13CH021	JAYAPRAKASH G
3	1MS13CH030	MANJUNATH V SHINNUR
4	1MS13CH053	SOURABH S H
MENTOR NAME	External Mentor : Dr. Lokesh, Assistant Professor, Department of Biotechnology, RIT Internal Mentor : Sri.K A Badarinarayana, Associate Professor, Department of Chemical Engineering , RIT	
ABSTRACT		
<p>Articaine and prilocaine are dental amides. They are used for pain control. Like other local anesthetic drugs, articaine and prilocaine cause a transient and completely reversible state of anesthesia (loss of sensation) during (dental) procedures. Amides like 2-chloro-N-(o-tolyl) propanamide & methyl 3-(2-chloropropanamido-4-methylthiophene-2-carboxylate are used as raw materials for production of prilocaine & articaine respectively. These amides were synthesized using various coupling reagents in the present study. Synthesis of amides are done in 2 routes i.e, existed & proposed route. In proposed route these above amides were synthesized using 2-chloropropanoic acid & o-toluidiene or methyl 3-amino-4-methylthiophene-2-carboxylate along with various coupling reagents such as HOBT, HBTU, EDC ,DCC, HATU for synthesis of prilocaine & articaine amides. The completions of the reactions were checked using Thin Layer Chromatography (TLC) using suitable mobile phase. Suitable coupling reagent and optimum conditions for highest percentage yield of amide were determined. Highest yield of 83.74 % for Articaine and 67.21% for Prilocaine was obtained using EDC as a coupling agent.</p>		

TITLE	Analysis of Nitrate in Groundwater and Denitrification of Nitrate Contaminated Water using Modified Clay	
SL.NO	USN NO.	NAME
1	1MS13CH029	MANGAL BASSAPA ASKI
2	1MS13CH033	NAJEEB UZ ZAMA
3	1MS13CH036	NELLORE MADHUVANI
4	1MS14CH400	HARSHA S
MENTOR NAME	Dr. Archna, Head & Professor, Department of Chemical Engineering, RIT Dr. Rajeswari M Kulkarni, Assistant Professor, Department of Chemical Engineering, RIT	
Funded By	Karnataka State Council for Science and Technology	
ABSTRACT		

Nitrate contamination in groundwater resources originates mainly from excessive use of fertilizers and uncontrolled land discharges of treated waste water. This can cause potential health hazards to infants and pregnant women. This limiting direct use of groundwater for human consumption in several parts of world including India. The batch adsorption studies were conducted for 100ml of 100ppm solution to study the effect of initial pH (2.0-8.0), contact time (5-240min) and adsorbent dosage (0.1-1gm) using kaolin and modified kaolin as the adsorbent. Surface Characterization study was also carried out to identify functional groups responsible for adsorption. The equilibrium data's were fit into Langmuir and Freundlich isotherm models. Kaolin has exhibited a higher and better potential biosorbent for the nitrate removal from aqueous solution.

TITLE	Synthesis and Application of Epoxy/ZrO2 Nano Composites	
SL.NO	USN NO.	NAME
1	1MS12CH016	HARDIK BHAYANI
2	1MS14CH401	KRISHNA V
3	1MS14CH405	PURNA CHANDRA.J
4	1MS14CH408	SRIKANTH.R
MENTOR NAME	Sri Sagar JS, Assistant Professor, Department of Chemical Engineering, RIT	
ABSTRACT		

In recent years ceramic oxide epoxy Nano composites have been an active area of research due to their enhanced mechanical properties. Epoxy resins are well established thermosetting matrices of advanced composites, displaying a series of interesting properties like good stiffness and specific strength, dimensional stability, chemical resistance, ease of processing and strong adhesion to the embedded reinforcement. Incorporating Nano particles of ceramic oxide can significantly improve the mechanical properties of host matrix by getting uniformly embedded in the thoroughly cross linked chains of the thermo set. This study deals with review of mechanical and electrical properties of epoxy matrix using Nano Zirconium Dioxide (ZrO₂) as filler in ZrO₂ - Epoxy nano composites. Effect of varying wt. % of ZrO₂ filler on mechanical and electrical properties of epoxy matrix was studied. As the wt. % of ZrO₂ is increased, the mechanical properties improved till a maximum value and then, these properties decreased with further increase in Nano filler content. In this study epoxy is used as the base polymer insulator. The relative permittivity, dissipation factor and electrical conductivity of polymer are measured as a function of ZrO₂ concentration in epoxy samples. The nano composites were characterized using Scanning Electron Microscope (SEM) and X-RAY Diffraction, Experimental measurements showed that addition of ZrO₂ to epoxy resin has positive influence in the insulation properties for high voltage electrical applications.

TITLE	Studies on Novel Microbial Fuel Cell	
SL.NO	USN NO.	NAME
1	1MS13CH016	GANESH PRABHU P H
2	1MS13CH038	NITESH METRANI
3	1MS13CH043	PRASHANT KASHYAP
4	1MS13CH050	SHREYAS MANNUR
MENTOR NAME	Dr. Archana, Professor & Head, Department of Chemical Engineering, RIT	
Funded By	MSRIT Alumni Association	

ABSTRACT

Microbial fuel cell (MFC) technology is a new type of renewable and sustainable technology for electricity generation since it recovers energy from renewable materials that are difficult to be disposed, such as organic wastes and wastewaters. The present study focuses on generation of energy from wastewater with the help of microbial fuel cell using graphite slab electrodes. A strategy has been used to reduce the cost of the construction and working of MFC. A two chambered design has been fabricated, with a U type salt bridge separating the two chambers. Two different sources of wastewater have been used for the current study – sewage water and dairy waste water. The parameters studied were: the sources of wastewater, concentration of nutrient medium and number of days of operation. The voltage generated varied linearly with the concentration of nutrient medium. For dairy waste the nutrient medium concentration was varied from 10 to 16 percent and it was observed that voltage generated varied linearly with the concentration of nutrient medium. The concentration of microorganisms was also analyzed during the process and it was seen that the voltage generated was directly varied with the concentration of microorganisms.

TITLE	Studies on Thermal Control Coatings for Spacecraft Applications and Design Aspects of Anodizing Plant for Processing Spacecraft Components	
SL.NO	USN NO.	NAME
1	1MS13CH008	B G SAMSKRUTHI
2	1MS13CH022	K R DEEPTHI
3	1MS13CH041	PRAJWAL PONNAMMA M A
4	1MS13CH044	R SNEHA
MENTOR NAME	External Mentor: Dr. R Uma Rani, Scientist, Thermal Systems Group, ISRO Satellite Centre Internal Mentor: Ms. V Sravanthi, Assistant Professor, Department of Chemical Engineering, RIT	

ABSTRACT

In spacecraft design, the function of the thermal control system is to keep all the spacecraft's component systems within acceptable temperature ranges during all mission phases. Without effective control the performance of the spacecraft will be severely affected resulting in the failure of the mission. The main aim of thermal control in spacecraft is to maintain the integrity of the spacecraft when exposed to varying environmental conditions. The project focuses on a passive thermal control method, anodizing and different techniques with which an Al 6061 alloy can be anodized. The anodized coupons are characterized using various tests for spacecraft application. Ionic liquids are a new class of liquid salts which have melting point less than 1000C. These liquids are studied for their use along with conventional electrolytes because of their environmental friendly nature and their advantageous physicochemical properties. Also, design aspects of anodizing plant for processing spacecraft components are considered by specifying tank sizes required for processing the components and calculation of the total power requirement.

DEPARTMENT OF **CIVIL ENGINEERING**



Project Abstracts

2016 - 2017



TITLE	Effect of axial deformation on columns and flexural rigidity of beams in R C buildings	
SL.NO	USN NO.	NAME
1	1MS13CV043	GaneshaNaik R
2	1MS13CV046	Girisha K
3	1MS14CV402	Chandrashekhar
4	1MS14CV414	Sandeep Y P
MENTOR NAME	Internal Mentor: Dr. H Narendra	
ABSTRACT		
<p>Axial shortening of columns due to long term creep and shrinkage is inevitable in tall reinforced concrete buildings. However, calculation of exact values if axial shortening is not a straight forward task since it depends on a number of parameters. All the parameters may or may not be available to the design engineer at the preliminary design stage of construction. Furthermore long term shortening of column could affect the horizontal structural member such as beams and floors and hence affect the finishes and partitions. In this study, the effect of construction sequence, rate of construction and grade of concrete on axial shortening are determined based on a number of case studies covering 10-40 stories range. These are presented as a set of guide lines so that the effect could be taken into account approximately.</p>		

TITLE	Design of Mixed Multistoried Building	
SL.NO	USN NO.	NAME
1	1MS13CV004	Abdul Khayum
2	1MS13CV006	Ajay Kumar T M
3	1MS13CV013	Amarnath K Palled
4	1MS14CV411	Raghavendra H
MENTOR NAME	Internal Mentor: Harish V	
ABSTRACT		
<p>This project aims on proof checking of an existing mixed use multi-storey building with different roofing systems. And we have found this structure to be really challenging task as providing floating columns on flat lab, because it is provided usually on beams. In this project with the help of software like ETABS we are going to analyse the designed structure, using the concepts of Limit State Method. In this project we analyse the existing design of the actual building taken from the site and we will do the proof checking by doing the complete design and analysis of the building and comparing the results of different components of the building for AST. By the end we will be able decide wither the project design is efficient in terms of safety and economy. this structure can efficiently solve the problem of effective use of available land in urban areas. And contribute to solve the traffic problems.</p>		

TITLE	Signal free design of Hebbal Junction	
SL.NO	USN NO.	NAME
1	1MS13CV008	AkshayPrakash
2	1MS13CV124	Supriya S Yavagal
3	1MS13CV009	Akshay R Biyani
4	1MS14CV407	Mohan T J
MENTOR NAME	Internal Mentor: Geeta kumari	
ABSTRACT		
<p>This project aim is to produce continuous flow of traffic at hebbal junction and also reduce waiting time of commuters by designing flyover & underpass by using limit state method and also by using software such as Autocad and Revit. Key features would include design of an Underpass by construction of slab box and counterfort retaining wall from BEL to Nagawara & Nagawara to BEL & Design of connectivity from Nagawara to Yelahanka at Hebbal junction by construction of T Beam Bridge. By this construction it is expected to eliminate the existing three signals at Hebbal Junction and help commuters to save their time.</p>		

TITLE	Recycled aggregate concrete and its mixed proportion.	
SL.NO	USN NO.	NAME
1	1MS13CV126	Syed Abdul Aziz Irfan
2	1MS13CV127	Syed AkhtarHussain
3	1MS13CV116	Sonu Kumar
4	1MS13CV115	SomnathJha
MENTOR NAME	Internal Mentor: B SugunaRao	
ABSTRACT		
<p>This paper will report the basic properties of recycled aggregate & also compares these properties with natural aggregates. Basic changes in all aggregate properties will be determined and their effects on concreting work will be discussed at length. Similarly the properties of recycled aggregate concrete are also determined. Basic concrete properties like compressive strength, flexural strength, workability etc. are explained here for different combinations of recycled aggregate with natural aggregate. In general, the ultimate motive of using recycled aggregate in India along with its future need are discussed here.</p>		

TITLE	Study of Mechanical property and Durability characteristics of concrete reinforced with carbon nanotubes	
SL.NO	USN NO.	NAME
1	1MS13CV001	AagyaDahal
2	1MS13CV021	AnkushJha
3	1MS13CV027	AsmitaSubedi
4	1MS13CV082	PashupatiDeo
MENTOR NAME	Internal Mentor: Dr. R Mourougane	
ABSTRACT		
<p>Concrete is one of the basic materials used in civil engineering works. The two main properties which are generally studied in concrete technology are strength and durability. It has some shortcomings like low tensile strength, low ductility and unavoidable cracks. This project aims to analyse the beneficial use of graphene in cement mortar by comparative study of the mechanical properties of normal strength mortar over the mortar reinforced with graphene. Use of different proportions 25% and 50% as the partial replacement for fine aggregate, it was incorporated in the cement mortar of 1:3 grade in the proportion by weight of cement respectively. The proportion of construction demolition waste and graphene were consequently varied and the change in mechanical properties compressive strength, tensile strength and flexure of cement mortar was observed and the same was compared with the result of normal mortar.</p>		

TITLE	Performance based seismic design of RC buildings	
SL.NO	USN NO.	NAME
1	1MS14CV423	Vishal R J
2	1MS14CV420	Veeresh I
3	1MS13CV152	Lakshmikanth U
4	1MS14CV400	Abhishek D
MENTOR NAME	Internal Mentor: PrashantSunagar	
ABSTRACT		
<p>Every Civil Engineering structure or building is unique in nature unlike other engineering products which are produced in a massive scale. The present Project is to understand Performance Based Design Approach. In this Work TEN storey office building is designed using ETABS software and a nonlinear static analysis is carried out using point plastic hinge model. The stiffness of the building was increased due to the slab present and this was incorporated in the model using diaphragm. The Floor Centre of Mass was calculated and an incremental Inverted triangular loading was applied to this central load and the base shear along with displacement of this building was recorded until the building reached a state of collapse. As per FEMA 356 typical values of roof drifts for the three performance levels are as follows.</p>		

TITLE	Durability investigations on structural lightweight concrete.	
SL.NO	USN NO.	NAME
1	1MS13CV147	Chaitra HR
2	1MS14CV415	ShaikJhoir
3	1MS13CV030	Beeranna
4	1MS13CV151	Veeresh M
MENTOR NAME	Internal Mentor :Anil Kumar	

ABSTRACT

The main aim of project is to produce structural light weight concrete by blending cinder and leca for different grade of concrete and to arrive at the durability. The advantage of lightweight concrete is its reduce mass and improved thermal and sound insulation property. The marginally higher cost of lightweight concrete is offset by size reduction of structural elements, less reinforcing steel and reduced volume of concrete, resulting in overall cost reduction and it is eco-friendly. On the basis of paper obtained we are continuing our work by conducting abrasion test, permeability, carbonisation, corrosion. Through this project we are attempting to make constructional practise economic and eco-friendly

TITLE	Geo-polymer concrete using GGBS and steel fibres	
SL.NO	USN NO.	NAME
1	1MS13CV050	Huidrom Anil Singh
2	1MS13CV065	MohdHarisHatim
3	1MS13CV075	Nikhil Kumar
4	1MS13CV076	Nishant Kumar
MENTOR NAME	Internal Mentor : BasavanaGowda G M	

ABSTRACT

This project aims to study the mechanical properties & durability on fibre reinforced Geo Polymer Concrete using GGBS. Mechanical properties such as compressive strength, split tensile strength, flexural strength and durability studies such as Acid resistance Sea water resistance, sulphate resistance are to be studied. Fibre reinforced Geo Polymer Concrete contains GGBS, Alkaline Liquids, Fine Aggregates, Coarse Aggregates, Steel Fibres. Geo polymer Concrete are new class of building material that has risen as an elective to Ordinary Portland Cement & have the potential to change the building development industry. Steel Fibres are to be added to the mix in volume fractions of 0.5%, 1% & 1.5% by volume of concrete. Specimens are to be subjected to 24 hours of Heat Curing at 80deg C in heat curing chamber. Based on the test results, optimum % are to be formulated and compared it with Conventional Concrete.

TITLE	Case study on recent collapse of under construction building in Bellundur	
SL.NO	USN NO.	NAME
1	1MS13CV098	Rishab Kumar
2	1MS13CV128	Tarini V
3	1MS13CV148	Sweekruthy M N
4	1MS13CV108	ShajidMustakim
MENTOR NAME	Internal Mentor: Santhosh	
ABSTRACT		
<p>Civil engineering structures are used for various purposes like residential, industrial, Transportation, commercial, etc. and are thus classified into various types. Any of construction project involves huge amount funds been invested in them. This paper emphasizes on responsible causes for constructional failures in today’s construction industry. For this purpose an analysis of collapse of G+ 5 storeys building in Bellandur. Various tests were conducted on site to identify the cause behind the collapse. The main aim is to minimize the problem of failure from civil engineering field by taking learning lessons from these devastating incidences. Information for the study was gathered from observations by visiting the site, past works, newspapers on building collapse, journals and the internet. Rubble samples were collected to check the quality of the materials we aim to conduct specific tests to do the needful. Through this project, an attempt is made to make some suggestions on safe delivery of structure, particularly building projects.</p>		

TITLE	Structural health monitoring of bridges using sensors and smart materials.	
SL.NO	USN NO.	NAME
1	1MS13CV019	AnkurAnand
2	1MS13CV020	Ankur Kumar
3	1MS13CV028	AswathyVenugopal
4	1MS13CV034	Chandan Kumar
MENTOR NAME	Internal Mentor: Nambiyanna B	
ABSTRACT		
<p>Civil structures like bridge, dams and buildings are most economic and precious assets of a nation which are subjected to severe loading and thus their performance is likely to change with time. It is therefore, Structural health monitoring (SHM) with emerging techniques made an entrance into the civil engineering field in last decades. According to ASCE, more than 26 percent or 1 in every 4 Bridge are either structurally deficient or functionally obsolete. The objective of this project is to determine parameters like deflection, temperature and humidity effects and strain in reinforcement due to loads. It will involve casting of prototype bridge model and analyzing its behavior and performance under varying loads and conditions using sensors and smart materials.The integration of these techniques lead to much more effective SHM and this forms the contribution of this project.</p>		

TITLE	Design of sustainable pedestrian bridge using Tensegrity concept	
SL.NO	USN NO.	NAME
1	1MS13CV066	NandeeshBabanagar
2	1MS13CV039	Dheeraj Mohan
3	1MS13CV051	Ijazuddin
4	1MS14CV419	Uttam Raj A
MENTOR NAME	Internal Mentor: Harish M L	
ABSTRACT		
<p>This project aims to investigate new form of Foot Bridge using TENSEGRITY concept with the aid of STAAD Pro software. Scope of work is to model a foot bridge which is efficient, light weight, deployable and innovative. Methodology includes modelling, analysis, interpreting the results and by comparison best of it is selected. Through this project an attempt is made to explore the applications of tensegrity concept in structures such as pedestrian bridge, sky walk etc.</p>		

TITLE	Effect of Nano carbon tubes, construction and demolition waste on mechanical properties of concrete	
SL.NO	USN NO.	NAME
1	1MS13CV071	Nayana K R
2	1MS13CV059	ManishaKanoria
3	1MS13CV055	LaxmiPriyadarshini R
4	1MS13CV052	Karan Gupta
MENTOR NAME	Internal Mentor : RajeGowda	
ABSTRACT		
<p>Disposal of construction and demolition waste has been a major problem since a long time. In the present scenario, conservation of the environment by the reduction of concrete debris is one of the major concerns. Sources of aggregates which are used in traditional mortar mixture are depleting and need to be brought from queries which leads to the rise in the cost of construction as well. Since, the concrete obtained from CDW have comparatively lesser strength than the traditional concrete, carbon nanotubes are used to increase the strength of concrete. This experiment demonstrates the use of concrete debris along with carbon tubes (Nano material) as a partial as well as total replacement to fine aggregates. A comparative study between the conventional mortar and concrete debris mixture has also been shown in the experiment.</p>		

TITLE	Investigation on comparison of different roofing systems	
SL.NO	USN NO.	NAME
1	1MS13CV102	Sachin Hokrane
2	1MS14CV413	Salman Shariff
3	1MS14CV406	Manukumar G R
4	1MS13CV118	SoumajitSaha
MENTOR NAME	Internal Mentor: Nagashree B	
ABSTRACT		
<p>This project aims to propose a comparative study of different roof system which includes beam slab type roof system, flat slab type roof system and bubble deck slab type roof system. Key feature of the project is to carry out the design feature of each slab which includes sustainability , durability , flexibility , resistivity. We will compare these characteristics for better selection of the roof system suitable for proposing for particular project.Through this project we will be able to achieve adequacy on certain parameters like SAFETY,ECONOMY and ENVIRONMENTAL IMPACT.</p>		

TITLE	Study on stability of sub grade using geo textiles and other alternatives	
SL.NO	USN NO.	NAME
1	1MS13CV085	PiyushTrivedi
2	1MS13CV088	PranavTiwari
3	1MS13CV093	Rajeev Ranjan
4	1MS13CV107	Shahroof Ahmad
MENTOR NAME	Internal Mentor :Dr. S M Naik	
ABSTRACT		
<p>With the increase of population and urbanization , the demand of civil engineering structures has increased , pertaining to which , the construction engineers have also resorted to weak or soft soil. Owing to such soil of poor shear strength and high swelling & shrinkage the pavement quality has been degrading over the years, a great diversity of ground improvement techniques such as soil stabilization are employed to improve mechanical behaviour of soil, thereby enhancing the reliability of pavement and structure as a whole.They exhibit high swelling and shrinking when exposed to changes in moisture content and hence have been found to be most troublesome from engineering considerations .Natural geo textiles coated with bituminous emulsion are added to black cotton soil in percentage of 4%, 8%, 12%, 16%, 20% by the weight of black cotton soil and stabilization takes place. Samples of black cotton soil will be collected from state of Karnataka in India. The basic properties of soil will be determined. Changes in various soil properties like Liquid limit, Plastic Limit, California Bearing Ratio(CBR), optimum moisture content and Maximum Dry Density will be analyzed.</p>		

TITLE	Study of Accident Prone drivers: A case study of Bangalore Cab drivers	
SL.NO	USN NO.	NAME
1	1MS13CV078	P T Rajagopalan
2	1MS13CV032	C AshishHirematt
3	1MS13CV045	GauravSaraf
4	1MS13CV015	Amit Kumar
MENTOR NAME	Internal Mentor: NiranjanHirematt	
ABSTRACT		
<p>Road accidents are one of the major hazards which result in loss of life and property. Over 15 lakh accidents occur in India annually. Bangalore City records about 7000 accidents per year with a frequency of 70 accidents per day. Various factors that influence the cause of road accidents are inefficient geometric design, poor material quality and maintenance, environmental conditions, vehicle characteristics and driver characteristics. This project intends to identify specific factors that cause accidents for various classes of drivers and vehicles. An attempt to design a working model that can formulate ways to reduce accidents and classify any given driver under consideration as an expert or novice, and his proneness to operation under increased risk factors will be addressed in the study. The sample set includes data collected from questionnaires, personal interviews, Google forms and accident data from police stations. The collected data will be analysed using mathematical methods to arrive at a statistical model which would work as an “input-output” based model.</p>		

TITLE	Driver behaviour and accident proneness in mixed traffic conditions.	
SL.NO	USN NO.	NAME
1	1MS12CV118	Shridhar B Madgyal
2	1MS13CV139	Vinod
3	1MS13CV113	Shreyas M
4	1MS14CV424	Pramod.S.H
MENTOR NAME	Internal Mentor: NiranjanHiremath	
ABSTRACT		
<p>This project aims to reduce the number of accidents caused by BMTC buses by determining the factors adding to the stress of the bus drivers, to identify the cause of reckless behaviour and driving and to also find an alternative time schedule suitable to the drivers. Prime focus will be on identifying causes straining the drivers using questionnaires and a suitable solution will be suggested to the problems they're facing in mixed traffic flow conditions. Through this project, an attempt to prepare a driver accident proneness model will be made, which would help in recruiting future drivers according to the BMTC criteria.</p>		

TITLE	Long term feasibility of grade separated intersection in Bangalore	
SL.NO	USN NO.	NAME
1	1MS13CV035	Chandramohan Reddy P B
2	1MS14CV404	Manish M Poojary
3	1MS13CV068	Naveen Kumar G C
4	1MS13CV053	Krishanaji
MENTOR NAME	Internal Mentor: Charan Prasad	
ABSTRACT		
<p>This project aims to analyse the present scenario of traffic system and grade separated intersections. As in Bengaluru city, year by year the human population is increasing due to various reasons, so the vehicular population. There are many factors such as inadequacy of public transportation system, migration etc. for increase in population. Due to this, the grade separated intersection will fail functionally lot before its design period and it will lead to the bottlenecking at junctions. We aim to find out the period for which the grade separated intersection will serve functionally. And we also aim to give the necessary measures required to prevent/reduce the bottlenecking and for smooth and uninterrupted flow of traffic.</p>		

TITLE	Route optimization and capacity analysis of silk board junction	
SL.NO	USN NO.	NAME
1	1MS13CV048	Govardhan L
2	1MS13CV037	Dev N M Gowda
3	1MS13CV056	MadhanSrinivas B
4	1MS13CV038	Dhani V
MENTOR NAME	Internal Mentor: Charan Prasad	
ABSTRACT		
<p>Traffic congestion is a condition on road network that occurs as road use increase, and is characterized by slower speeds longer trip times, and increased vehicular queuing. When traffic demand is great enough that the interaction between vehicles slows the speed of the traffic stream, this results in some congestion. The present study which we have chosen is to decongest the SILK BOARD JUNCTION. To cater to this need we would have the classified traffic volume count along of the roads along with features of the road and the signals which are adding to the congestion of the traffic. This study thus checks the roads for LEVEL OF SERVICE and thus gives Optimised route for the current traffic scenario. Our aim is to make this junction congestion free for smooth movement of vehicles and road users during peak and off-peak hours using the guidelines provided by IRC and checking the defects and faults to ultimately resolve the practical problems for smooth traffic flow.</p>		

TITLE	Assessment of groundwater quality at Bingipura solid waste dumpsite	
SL.NO	USN NO.	NAME
1	1MS13CV100	Rohit
2	1MS13CV103	Sadanand R Ghanti
3	1MS13CV110	Shivaraj CBallari
4	1MS13CV121	Suken R Shettar
MENTOR NAME	Internal Mentor: Dr. B. Umadevi	
ABSTRACT		
<p>The heavy dumpings of solid waste in and around the bingipura site have led to deterioration of ground water quality and lake water quality around it.. Majority of solid waste from southern part of Bengaluru are dumped in the bingipura dump site. The assessment of ground water quality and lake water sample is to be carried out. The samples will be collected at various distances from the site. The analysis will be carried out for different parameters like pH, Biological Oxygen Deman, Dissolved Oxygen, Total Dissolved Solid, Total Alkalinity, Total Hardness, Calcium, Magnesium, Chlorides, Nitrates, Electrical Conductivity, Total Suspended Solids and Sulphates. Water Quality Index, indicating the water quality in terms of index number will be found which offers a useful representation of overall quality of water for public or for any intended use.</p>		

TITLE	Water quality assessment of lake water	
SL.NO	USN NO.	NAME
1	1MS14CV412	Sachinkumar A Goudar
2	1MS14CV408	Nagesh B Koti
3	1MS14CV422	Vijayakumar G
4	1MS13CV007	Ajit Kumar
MENTOR NAME	Internal Mentor: Dr. B. Umadevi	
ABSTRACT		
<p>Water is the primary natural resource, a basic human need & a precious national asset. Ever increasing population, urbanization & modernization are posing problems of sewage disposal, dumping of debris, disposal garbage on banks of lake, runoff from surrounding which carries silt and nutrients are the main sources of contamination of surface waters like lakes. Lakes are helped in checking floods, in recharging and maintaining the ground water table, and to assessing the complicated natural cycle coupled with biological & hydrological roles of lakes, it is important that a proper maintenance is ensured.Water samples will be analysed for various parameters like p-H, TDS, SS, BOD, DO, Nitrate etc by standard procedure. The results are subject to water quality analysis and the lake water will be classified as per KSPCB guidelines.</p>		

TITLE	Study of contaminated flow for different soil depth	
SL.NO	USN NO.	NAME
1	1MS13CV134	Varshith B V
2	1MS13CV150	GaganKiran
3	1MS13CV125	Shusmitha B
4	1MS13CV049	Govindappa S
MENTOR NAME	Internal Mentor: C Usha	
ABSTRACT		
<p>The project aims to study the soil taken from a selected dumpsite and improve it’s properties using Phyto-remediation method which is ecofriendly. These heavy metals if not treated not only affect soil chemistry negatively but also pollute groundwater aquifers. Thus hyper-accumulators (plants which absorb metals at faster rate) are used. Key feature of the project is to study the contaminated flow for different depths of soil taken from various points in dumpsite. Prime focus is to prevent the loss of agricultural soil resources which are polluted by letting industrial waste, sewage, solid wastes into area turning it into a waste land. Through this project an attempt is made to make use of dumpsites by treating soil using an eco-friendly method as soil contamination has negative effects on environment.</p>		

TITLE	Toxicological impact on vegetation of command area by polluted water	
SL.NO	USN NO.	NAME
1	1MS13CV084	Pavankumar S Walikar
2	1MS13CV089	Praveen N Biradar
3	1MS13CV086	Prabhudev M J
4	1MS13CV087	PrabhurajGour
MENTOR NAME	Internal Mentor: JyothiRoopa	
ABSTRACT		
<p>Environmental pollution by toxic elements has attracted global attention and that of the scientific community in specific. This research work is carried out to present a comprehensive view of the typical problems experienced by wastewater-fed Reservoir Command Area. This paper discusses the studies on transfer of seven heavy metals – Zn, Cu, Cr, Pb, Cd, Fe, Mn from various sources to the soil of the Reservoir Command Area, and thereby to the roots, stem, leaves and also fruits of the vegetation grown in that area. We also provide a brief understanding of the environmental effects of heavy metals entry into the ecosystem. The results and the analysis of the samples revealed that heavy metal contamination had occurred at certain locations/soil and in some vegetation grown in the command area. Some of the vegetation monitored were brinjal, mulberry, spinach, tomato, chilly, grass, drumstick, paddy and mango.</p>		

TITLE	Sustainability Analysis of conventional and green building	
SL.NO	USN NO.	NAME
1	1MS13CV005	Abdul Waheed
2	1MS13CV044	GauravAaditya
3	1ms13cv029	Ayez Ashraf
4	1MS13CV080	Palak S Mehta
MENTOR NAME	Internal Mentor:JyothiRoopa	

ABSTRACT

This project aims sustainability analysis of conventional and green building considering various parameters to bring up the advantages of green building over conventional building. Methodology adopted is analysis of orientation of the building (directions in which various openings are present etc.), calculation of energy required (electrical energy required by various appliances, water harvesting calculation (amount of water that can be harvested and stored), grey water harvesting calculation, embodied energy calculation and then the cost analysis of both the buildings by collecting the respective data and considering all the parameters. After analysis various green building principles would be incorporated in the conventional building and achieve the target of, saving a certain percentage of cost of electrical energy, water consumption, and achieve other advantages of green building over conventional building.

TITLE	Conceptual planning of green skyscrapers	
SL.NO	USN NO.	NAME
1	1MS11CV029	Avik Bhattacharya
2	1MS12CV098	SahilAgnihotri
3	1MS12CV087	RaghaviVaradarajan
4	1MS11CV087	Prithvi.D
MENTOR NAME	Internal Mentor : Swathi T S	

ABSTRACT

This project aims to emphasize on integration of plants and utilization of solar energy in the skyscraper design which play a vital role for the energy conservation by the building as well as improving the living quality into these vertical cities. Throughout the project work we will establish the necessity of planting and to incorporate them into skyscrapers, for the well-being of our economy, society and the environment. Key features of the proposed building design would include the use of Green roof, Green wall, Biofilter, Indoor potting plants and solar panels to make the skyscrapers energy efficient and reducing their carbon footprint. , thus reducing the size of the air conditioning equipment and the period for which it is generally required making the skyscraper energy efficient. Building will be based on LEED & GRIHA accreditation. All through the project, we try to show that integration of plants and energy efficient practises and technology into skyscrapers that can change the micro and macro environment, climate, can restore the ecology and benefit the economy ultimately resulting in healthy social practices.

TITLE	GIS and GPS based techniques in Irrigation purpose	
SL.NO	USN NO.	NAME
1	1MS13CV010	Akshay V
2	1MS13CV036	DebopamDatta
3	1MS13CV077	NithishVinay Raj N
4	1MS13CV122	Sumit Gupta
MENTOR NAME	Internal Mentor : Sumalatha J	

ABSTRACT

This project aims to propose develop using a Geographic Information System (GIS) to select, design, install and manage an irrigation system for a farm. GIS was used to develop different thematic layers, each consisting of a particular attribute required for analysis of alternative irrigation system types. These layers included data such as: topography, soil texture, soil water retention, bulk density, infiltration rate of water and field drainage system. These layers were used with water availability and water demand to design and plan the farm irrigation systems. GIS includes the implementation of following applications: land use mapping, irrigated area mapping, detection of heterogeneities, irrigation monitoring, radioactive frost monitoring, and flooded area mapping. GIS seems to be very promising in order to improve some of the existing applications and also in development of new applications.

TITLE	Possibility of lakes as temporary water source by modelling	
SL.NO	USN NO.	NAME
1	1MS13CV002	AashishKarwa
2	1MS13CV012	Alok Ashok Bhagavati
3	1MS13CV071	Nayana U P
4	1MS13CV081	PallepatiApoorva
MENTOR NAME	Internal Mentor :Dr. C Rajagopal Reddy	

ABSTRACT

This project aims to propose a surfacewater and groundwater model for the Hebbal lake series by measuring the quantities of storm water, groundwater and sewage flowing in & out of the lakes, and developing the model using Python software. All the inlets and outlets from each lake will be located using GPS units which are mapped using Google earth and QGIS. The inflow and outflow will be measured manually and a simple water balance is developed for each lake. The zone of influence of recharge for each lake and linking of the lake to its watershed is also established. For developing an accurate model, the geological map of the entire study area along with the depths of layers beneath is needed. Through this project, an attempt is made to understand the behaviour of the lakes with respect to its encompassing watershed.

TITLE	Studies on efficient use of micro-algae treated Byramangala Tank water for irrigation purpose	
SL.NO	USN NO.	NAME
1	1MS13CV123	Sunil Niraula
2	1MS14CV405	Manju R.
3	1MS13CV094	Rakshith N.
4	1MS14CV410	Punith Kumar
MENTOR NAME	Internal Mentor: Dr. C Rajagopal Reddy	
ABSTRACT		
<p>Agriculture has been the backbone of the Indian economy and will continue to remain so for a long time. Being a country whose economy is driven by agriculture,its irony to figure out that only 35% of cultivable land is having irrigation facility. 65 % of irrigation is obtained from underground sources and 35% from canals.Especially in Southern India before independence tanks were the major source ofirrigation whose irrigation potential has been ignored in recent time. Researches have proven that the tank is contaminated with heavy metals. The contaminated water which is being used in agriculture due to easy availability had resulted in low crop yield and various environmental issues. This project aims in studying various catchment properties, sources of pollution, pollution level in the command area and concluding a proper crop management technique to optimize the crop yield. Soilsalinity has been proven to be a major hindrance in crop yield. Hence, cropping pattern has been proposed with respect to the existing soil salinity condition.</p>		

TITLE	Urban flood monitoring- A case study of Koramangala catchment	
SL.NO	USN NO.	NAME
1	1MS13CV141	Vivek Prasad
2	1MS13CV096	Ranjan Kumar
3	1MS13CV136	Vikash Kumar
4	1MS13CV138	Vinit Kumar
MENTOR NAME	Internal Mentor: Vinod Kumar H A	
ABSTRACT		
<p>Flooding in urban areas can be caused by flash floods, or coastal floods, or river floods. Urban flood is specific in the fact that the cause is lack of drainage in urban areas. As there is little area is available for infiltration, nearly all the precipitation needs to be transported to surface water or sewage system. Flood water contaminates water supply system and lead to various diseases. High intensity rainfall can cause flooding when the city sewage system and draining canals do not have the necessary capacity to drain away the amount of rain that are falling. These floods are a great disturbance of daily life in the city. The economic damages are high but the number of casualties is usually very limited, because of nature of the flood.This analysis can be used for the flood management system for the respective study area and preventive measures can be adopted to minimize its hazardous effects. This project presents an overview of the Flood Hazard Mapping and Forecasting in the study area.</p>		

TITLE	Management of urban floods: Case study on Hebbal Valley, Bangalore	
SL.NO	USN NO.	NAME
1	1MS13CV011	AkshitSaxena
2	1MS13CV017	Amit Kumar Chaubey
3	1Ms13CV024	Arun Kumar Soam
4	1MS13CV041	FahadSiddiqui
MENTOR NAME	Internal Mentor: Vinod Kumar H A	
ABSTRACT		
<p>Urban hydrology is a science, part of land hydrology investigating the hydrological cycle, water regime and quality in urbanized territory. Urban hydrology is a link in a number of sciences dealing with the problems of ecology, environmental protection, conservation and rational use of the Earth's water resources. In developing cities, many of urban water networks are too old where most of them are not designed or expanded by engineering methods. Therefore, it is of high concerns to rebuild or relief them in a way that they can operate best. Use of evolutionary algorithms for optimization of water network is most popular nowadays. Methods such as Genetic Algorithm (GA) and Honey Bee Mating Optimization (HBMO) have been used frequently in the literatures. Remote Sensing has made substantial contribution in flood monitoring and damage assessment that leads the disaster management authorities to contribute significantly. Techniques for mapping flood extent and assessing flood damages have been developed which can be served as a guideline for Remote Sensing (RS) and Geographical Information System (GIS) operations to improve the efficiency of flood disaster management.</p>		

TITLE	Comprehensive development of sustainable village	
SL.NO	USN NO.	NAME
1	1MS13CV057	MahimaMoolbharati
2	1ms13cv026	Ashwini Police Patil
3	1MS13CV097	Ravi Kiran
4	1MS13CV092	Pruthviraj
MENTOR NAME	Internal Mentor: Jagadeesha Kumar B G	
ABSTRACT		
<p>This project aims to propose conceptual model of a sustainable village based on present conditions in India to meet future requirements of resources. Key features include making the village self-sustainable and efficient in its use of domestic energy, water and biodegradable waste. An attempt is made to employ systems that provide safe disposal of sewage hence increasing the sanitation of the village and ultimately improving the health of the residents . The prime focus will be on reducing the environmental impact of human activities by reducing the wastage of natural resources. Alternatives to these resources are provided, hence paring down the village’s dependency on conventional methods of obtaining energy and material. In the process, the awareness of social responsibility and importance of sustainable development will be promoted among the residents.</p>		

DEPARTMENT OF **COMPUTER SCIENCE ENGINEERING**



Project
Abstracts

2016 - 2017

Vision

To build a strong learning and research environment in the field of Computer Science and Engineering that responds to the challenges of 21st century.

Mission

To produce computer science graduates who, trained in design and implementation of computational systems through competitive curriculum and research in collaboration with industry and other organizations. To educate students in technology competencies by providing professionally committed faculty and staff. To inculcate strong ethical values, leadership abilities and research capabilities in the minds of students so as to work towards the progress of the society.

TITLE	Tally and People’s Database	
SL.NO	USN NO.	NAME
1	1MS12CS009	Animesh R
INTERNAL MENTOR	Mr. Mahabaleshwar Asundi (Project Manager at Flipkart)	

In any corporate company, it is important to leverage all human resources to the fullest, regardless of the intangible boundaries of the existing teams in the company. Thus, a tool which specializes in this use case is required for this purpose. A situation can arise where a team needs the skill and expertise of a completely unique technology/tool. Instead of hiring extra people, we could take the help from the internal employees of the company. While this method can be underestimated, this form of intra-office communication is crucial for productivity and development in the long run. “Tally” is the result of fulfilling this requirement. It is used extensively in Flipkart as a simple feedback mechanism. It provides employees with a way to quickly poll, receive suggestions, or manage questions and answers for any topic as needed. At the most quintessential level, Tally does three things effortlessly :

- 1) Create and share prompts quickly
- 2) Get feedback, prioritization, consensus, suggestions and more.
- 3) Serve QA moderation and presentation

TITLE	SOCIAL IMPACTS OF USING IoT AND DATA ANALYTICS ON ACCIDENT DATASETS TO PREDICT AND REDUCE THE IMPACT OF ACCIDENTS	
SL.NO	USN NO.	NAME
1	1MS12CS002	AbhinavShikhar
2	1MS13CS416	Naveen JS
3	1MS12CS139	T Hema
4	1MS12CS097	Sandeep Kumar
INTERNAL MENTOR	Sowmya B J	

Every day, hundreds of lives are lost due to accidents, mainly because medical help fails to reach the accident spot on time. Presently, we completely rely on passer-by's to call for help. After an accident, victims who incur damages to vehicle struggle to claim insurance because of lack of evidence. Accidents cause mayhem in the city, choking the roads in the vicinity.

To automate the process of detecting and reporting accidents, we place a kit, consisting of System-on-Chip and various sensors in each vehicle. When an accident occurs, the data is sent to the Cloud Infrastructure. This data is used to immediately notifying the concerned authorities, such as traffic-police, nearest ambulance through a mobile app. It suggests commuters various alternate paths based on traffic conditions and occurrence of any accident. The accident records serves as proof when claiming insurance.

Intelligent analysis of previous year's accident data-sets can give valuable insights on how to deploy existing resources (such as ambulances and traffic-police) in a more proactive way. It can help in smarter planning of cities by identifying suitable sites to build hospitals (accident prone areas), schools, colleges and old-age homes (less accident prone areas) and improving cab services (in areas with more drunken-driving accidents).

TITLE	Real time Response Capture and Analytics of Tutoring Ecosystem	
SL.NO	USN NO.	NAME
1	1MS12CS142	Aishwarya S S
2	1MS11CS067	Namratha Ravishankar
3	1MS12CS070	Nuthana Kumari M
4	1MS11CS152	Ashwiji S
INTERNAL MENTOR	Ganeshayya I Shidaganti	

Online learning has become a prominent and inseparable component of higher education in recent years. Questions related to course structure, levels of interaction, presence, and participation within online courses persist and invite further inquiry for determining factors that encourage effective teaching and learning in online environments.

Real time response capture and analytics of tutoring ecosystem explores models of course development and delivery techniques to improve learning and student satisfaction in online courses. This system serves as a resource for educators in online learning environments, as well as for course designers and developers of online courses.

Feedback forms are used to collect the responses of learners for an online session. Currently systems allow for collection of responses only at the end of the session/video. Received responses are analyzed to get the grade of that session. Collecting feedback at the end of session will only provide overall performance meaning we are not getting periodical responses, due to which educators are not able to understand which category of teaching should be improved.

Main objective is to provide the rating parameters such as Syllabus Coverage, Usage of Examples, Understandability and Practical Knowledge to learner for better response collection. The learner can rate the performance of educator's video session any number of times within the time limit. Total performance of the session will be analyzed with the help of ratings from all learners. This analysis will be given to educators to improve the performance in their next upcoming sessions. This helps improve quality of teaching, learning and student satisfaction.

TITLE	Real time communication between blind, deaf and dumb	
SL.NO	USN NO.	NAME
1	1MS12CS066	NikhilaSomu
2	1MS12CS036	H Rameshwari
3	1MS12CS089	Raksha Singh
4	1MS12CS145	Santhoshi R
INTERNAL MENTOR	Veena G S, Assistant Professor, MSRIT	

“Speech” and “gestures” are the medium through which humans communicate. We begin to learn their use in the first few years of our life. In human communication, the use of speech and gestures is coordinated. People with disabilities i.e., the blind, deaf and dumb, find it difficult to communicate amongst themselves and with others. One of the shortcomings of our society is that people with disabilities find it difficult to cope up with today’s fast growing technology. Making the communication technologies accessible to these people is highly essential. This project is aimed at providing a system capable of allowing real time communication between the blind, deaf and dumb. The system includes a microcontroller, camera, speaker, microphone, LCD display and a voice recognition kit. Microcontroller is used for processing and controlling the various components. The camera is used to capture the gesture from the dumb. Matlab is used for image processing. Speaker is used to play the voice message associated with the gesture. Microphone is used to build the speech database. The voice recognition kit is used to convert the message spoken by the blind into a text which will be displayed on the LCD.

TITLE	Smart Irrigation through simulation of temperature and moisture detection	
SL.NO	USN NO.	NAME
1	1MS12CS016	BailoreAvinash
2	1MS12CS060	Mrinal B Kalamdani
3	1MS13CS405	Chandrashekar B
4	1MS13CS417	Praveen Sulibhavi
INTERNAL MENTOR	Mamata Jadhav	

This project focuses on the effective irrigation and prevention of water wastage in uncontrolled irrigation. The objectives of this project were to avoid wastage of water and increase irrigation efficiency by using a PLC based irrigation system with the help of soil moisture sensor and water level sensor. It also improves the traditional irrigation system enabling the irrigation system to have high efficiency and low water usage. The existing irrigation system is tedious, time consuming and very wasteful in water usage. This PLC based irrigation system gives the best feature than the traditional one. Whenever there is a change in temperature and humidity of the surroundings the sensors senses the change in temperature and humidity and gives a signal to the micro-controller. The microcontroller controls the pumping of water by switching the water pump on and off. By this Automated method we can control the water management and increase the production rate of food.

TITLE	Automating Builds and Tests For NI RFmx	
SL.NO	USN NO.	NAME
1	1MS12CS069	Nishant Washisth
INTERNAL MENTOR	Dharaniprakash Kurdimath Pradeep Kumar Assistant	
<p>Radio frequency signals are used in many applications. Mobile handsets transmit and receive radio frequency signals. Hence it becomes important to test this equipment's for their proper function. NI manufactures various computer based instruments for the testing of RF signals & devices. These instruments require a driver software to be developed for them to be used programmatically. RFmx is driver software which will used by customer to access & interact with NI RF instruments.</p> <p>This project aims at automating the daily builds (installer) for the different personalities of rfm x and also automating their testing (Sanity tests and Installer exports verification).</p>		

TITLE	IoT Enabled Integrated Intelligence System for Automatic Pothole Detection, Pollution Monitoring, Post Accident Medical Response and Breakdown Assistance	
SL.NO	USN NO.	NAME
1	1MS12CS138	Nikhil Bhat
2	1MS12CS077	Prithvi Alva
3	1MS12CS137	B M Tanvi Raj
4	1MS12CS048	Krunal Bhatt
INTERNAL MENTOR	Prof. Sanjeetha R	

Some of the major problems faced by commuters today include i) Accidents because of running over a pothole ii) Locating and reporting of accidents (especially if the accident is on isolated/remote roads) iii) Inability to identify the vehicle which has caused the accident iv) Unexpected vehicle breakdown and v) Monitoring the levels of gas emission from their vehicles.

In our Project we propose a solution for the above mentioned problems using an application that works based on the concept of IoT. The application uses an accelerometer placed on vehicles, to collect acceleration details in the vertical axis to identify the presence of potholes and acceleration details in horizontal axes to identify if a vehicle has encountered an accident. It uses a gas sensor to collect the details of concentration of gas emissions viz., Carbon Monoxide from the exhaust of the vehicle. A GPS module is used to identify the location of potholes and the location of accidents.

The information thus obtained is sent to the i) traffic related authorities to fix the identified potholes ii) Hospitals/Ambulance to help the accident victims iii) legal authorities to use it as evidence while investigating accidents iv) Car service centers to fix the vehicle and v) Vehicle user and traffic authorities to fix the emission related problem.

TITLE	Framework of Continuous Integration and Test as a Service for NonStop SQL/MX	
SL.NO	USN NO.	NAME
1	1MS12CS085	Rajat Jain
INTERNAL MENTOR	Ganeshayya Shidaganti	

One of the hottest topics in today's testing domain—and in software development in general—is the movement to Continuous Integration (CI). CI is the practice of merging all developer workspaces several times a day with a shared mainline. When developers check their code into the mainline, or trunk, the code is automatically compiled and then automated unit tests are run to provide quality control. In the same vein, the practice of Continuous Delivery further extends CI by making sure the software checked in on the mainline is always in a state that can be deployed to users and is enabled for rapid deployment. The main objective here is to develop a continuous integration platform for software development. This process utilizes an open source tool to streamline the automated build process accompanied with unit and regression suite testing to mitigate risk. This platform helped reduce time and effort to initiate the regression testing in the development cycle.

TITLE	Scene Understanding in an Image	
SL.NO	USN NO.	NAME
1	1MS12CS014	Arvind Hudli
2	1MS12CS029	Fakhruddin Tahery
INTERNAL MENTOR	Dr. K G Srinivasa	

Images constitute a large part of modern user generated data. Understanding image data is an important problem that has caught the attention of researchers all over the world. Classical techniques of computer vision based on object detection and inference have had limited success and are also computationally expensive. Developments of machine learning techniques and hardware have made deep learning based neural networks not only feasible but quite effective. We apply deep learning techniques for scene understanding for images. The system is trained using large data sets to classify images based on constituent dominant objects and also generate captions for them. The effectiveness of learning depends on neural network configurations and learning models that are employed. We use feedforward Convolutional Neural Networks (CNN) as they have had success in feature extraction for images. We use Recurrent Neural Networks (RNN) for deep learning for captioning.

TITLE	Online Parking Tracking System	
SL.NO	USN NO.	NAME
1	1MS12CS042	Jivitesh Mopuri
2	1MS12CS045	Keshava R
3	1MS13CS406	Charan Rao
4	1MS13CS407	Karthik M
INTERNAL MENTOR	Dr. T.N.R Kumar	

Online Parking systems typically obtain information about available parking spaces in a particular geographic area and process is real-time to place vehicles at available positions. It involves using low-cost sensors, real-time data collection, and a web app based automated billing systems that allow people to reserve parking in advance or very accurately predict where they will likely find a spot.

TITLE	Effective prediction and prevention of Air pollution caused due to automobiles using IoT and Data Analytics Techniques	
SL.NO	USN NO.	NAME
1	1MS12CS005	ADARSH RAJ
2	1MS12CS010	ANVITHA D RAO
3	1MS12CS134	VISHAL V MAHULI
4	1MS12CS135	VISHWANATH KULKARNI
INTERNAL MENTOR	Dr. Seema S	

Climate change and Environmental Hazards have been burning issues all around the globe. Even the super powers of the world are facing these problems and solutions to these issues are the need of the hour. Air Pollution is a major contribution to the Environmental Pollution which not only deteriorates the quality of air and surroundings but also causes catastrophic consequences on the human health. Air Pollution is the presence in the ambient atmosphere of substances that interfere in the normal health of the life forms and quality of the substances causing hazards in both.

The major contributors to the air pollution are automobiles. Today, with the growth of technology and enhancement of lifestyles automobiles are found even in the remotest places of world where the population is negligible. The use of vehicles is rapidly growing as they're being deployed almost everywhere. So, it is of paramount importance to control this pollution caused by automobiles to tackle the air pollution issue effectively.

That said, In order to formulate a solution to this burning global issue we've come up with an idea that inculcates techniques of IoT/IoE (Internet of Things) and Data Analytics to predict and prevent air pollution substantially. The project aims at developing a device that will monitor the toxicity of the vehicular emission and assist the owner in getting the vehicle serviced timely to keep the emission levels low. Another objective of the project work is to analyze the air pollution levels at different geographical locations and to derive certain useful insights out of it that would help to reduce overall air pollution levels to a considerable extent.

TITLE	Clothing Pattern Recognition for Visually Impaired People	
SL.NO	USN NO.	NAME
1	1MS13CS401	Annapurna T
2	1MS13CS403	Bindushree G
3	1MS13CS419	Savitha K.N
4	1MS12CS422	Vidyavati
INTERNAL MENTOR	Srinidhi H	

Choosing clothes with complex patterns and colors is a challenging task for visually impaired people. Automatic clothing pattern recognition is also a challenging research problem due to rotation, scaling, illumination, and especially large intra-class pattern variations. The visually impaired people find it very difficult to identifying various patterns, colors and textures for cloths. This system helps them to identify cloths using voice based assistance.

We have developed a camera-based prototype system that recognizes clothing patterns into 4 categories (plaid, striped, pattern less, and irregular) and identifies 11 clothing color. The system integrates a camera, a microphone, a computer, and a Bluetooth earpiece for audio description of clothing patterns and colors.

The device mainly consists of raspberry board with camera which takes pictures of cloth, a microphone which will take commands from users. The raspberry board is used to support all processing. The picture of cloth is fed as input to pattern analyzer software module. The pattern analyzer will detect the color of the cloth, texture and design pattern such whether design is stripes or checkered or random pattern or plain. The resulting output is played on speaker as pre-recorded message.

A camera mounted upon a pair of sunglasses is used to capture clothing images. The clothing patterns and colors are described to blind users verbally. This system can be controlled by speech input through microphone.

A Solution for a Secured Alert System		
TITLE		
SL.NO	USN NO.	NAME
1	1MS12CS017	Bharat kumar M
INTERNAL MENTOR	Mrs. A. Parkavi	

Philips Medical Systems, a division of Royal Philips Electronics, is the leading supplier of medical imaging equipment and related healthcare services. Magnetic Resonance Imaging (MRI) is one of the youngest and most innovative imaging technologies and is growing in applications but also in complexity of the system. MR has a large software presence in the Philips Innovation Campus, Bangalore, producing state of the art software driving MR workflow, post-processing, reconstruction and serviceability.

The whole MRI system is controlled by a software system that runs in several computers. The software consists of several million lines of code written in nine different programming languages. Also, the software which handles the automated diagnostic self-tests has a long history of being exposed to numerous changes that need to be checked regularly. The aim of this project is to successfully develop one or more independent or hybrid mechanisms including UI to optimally schedule the automated diagnostic self-tests on the MR System. This project concerns itself with the workflow aspect of the complex MR software.

Client side tool for application and service life cycle management in Fog Computing		
TITLE		
SL.NO	USN NO.	NAME
1	1MS12CS021	Chethana B
INTERNAL MENTOR	Prof. Mallegowda M	

The advent of Internet of Things has experienced a profound rapid growth which has made it evolve in Internet of Everything. The Internet of Everything has been experiencing an exponential growth in the amount of data to be handled. All the data that are generated by the end devices pass through a network device such as a switch or a router and reach the cloud where the data gets processed. This data often tends to be in the range gigabytes and also remains redundant many a time. Carrying the data from the end device to the cloud for processing and bringing the required data back to the device consumes a heavy load of bandwidth which in turn slows down the speed computing the data and analyzing it. This drawback has led to the innovation of making the computation hierarchical by making use of the router's computing capabilities and performing all possible computations in the network devices and using the cloud for the remaining computation. This process of shifting the processing tasks from the cloud to the near edge devices is called Fog computing

The operating system in a router is less evolved for an application to perform higher level data processing as it is tightly coupled with the hardware. This paves the way for a requirement in developing an end to end application enablement framework that allows to host applications of different types in a uniform and consistent manner called the IOx

This framework requires a client side tool for application and service life cycle management called to allow the user manage the applications in the fog computing infrastructure. It is a command line tool that communicates with a near edge device to perform the functions as required by user such as deploying an application or service, reading metrics, introducing a new end device and so on.

TITLE		By-passing infected areas in WSN	
SL.NO	USN NO.	NAME	
1	1MS12CS041	JAYANTH B	
2	1MS12CS027	DHARSHAN BC	
3	1MS12CS031	KIRAN KUMAR G	
4	1MS12CS081	RAGHAVENDRA G	
INTERNAL MENTOR		Ganeshayya I S	

The software corruption, hardware failure and non-favorable operating environment among different nodes in wireless sensor network can reduce the nodes functionality and affect the entire wireless sensor network operations. Node experiencing such a problem is called an infected node. Due to infected node packets cannot be forwarded to destination these packets become lost or stuck in the infected areas.

This problem will increase the packet loss rate and energy consumption. The corrupted data in the packets results in false analyses and wrong decision making at end system. Hence a timely detection of the infected nodes and determine the alternative route to divert the traffic from infected area.

Our Objectives in this Project are as follows:

- To design the method that can get the stuck packets out of the infected regions.
- To design the method that can by-pass infected areas and reroute the incoming packets to uninfected regions.
- To minimize the effects of infected nodes because effect of trapping important packets inside an infected region could be massive.

TITLE	Application for consumer-to-consumer trading	
SL.NO	USN NO.	NAME
1	1MS12CS050	Lakshmishree.C
2	1MS12CS065	Niharika W.M
3	1MS12CS079	Raghav Chawla
4	1MS12CS091	RohitSudhakar Shetty
INTERNAL MENTOR	Mrs. Chandrika Prasad	

This application is a state-of-the-art platform for direct consumer-to-consumer trading in the Internet. The platform is targeted for direct consumer-to-consumer trading among university students or members belonging to a neighborhood, etc. The items for trading include books, household items, electronics, housing rental, sports equipment. One objective is to help the user to decide on the selling price of his item when the item is being posted in the web application.

In a world where the number of choices can be overwhelming, recommender systems help users find and evaluate items of interest. They connect users with items to “consume” (purchase, view, listen to, etc.) by associating the content of recommended items or the opinions of other individuals with the consuming user’s actions or opinions. Such systems have become powerful tools in domains from electronic commerce to digital libraries and knowledge management. These products can be recommended based on the top overall sellers on a site, on the demographics of the consumer, or on an analysis of the past buying behavior of the consumer as a prediction for future buying behavior.

TITLE	Automated Patch Mechanism for MR Software Components	
SL.NO	USN NO.	NAME
1	1MS12CS075	PRAVEEN K
INTERNAL MENTOR	Sriranga Natha System Architect, PIC ADI Magnetic Resonance Philips Innovation Campus, Bangalore Sini Anna Alex Assistant Professor Department of Computer Science & Engineering, MSRIT	

Philips Medical Systems, a division of Royal Philips Electronics, is the leading supplier of medical imaging equipment and related healthcare services. Magnetic Resonance Imaging (MRI) is one of the youngest and most innovative imaging technologies and is growing in applications but also in complexity of the system. The whole MRI system is controlled by a software system that runs in several computers. MR is building an intuitive and fast Software patching framework with a long term view of single-click enabling of patches. The aim of this project is to successfully develop an automated patch mechanism for MR software components. This project concerns itself with the workflow aspect of the complex MR software.

TITLE	Automatic Secured System for Public Distribution Shops	
SL.NO	USN NO.	NAME
1	1MS12CS095	Saddam Hussain K A
2	1MS12CS094	Allabaksh S K

3	1MS12CS055	Megha P
4	1MS12CS900	Meghana A
INTERNAL MENTOR	Dr. Anita Kanavalli	

Government provides various facilities to poor and people below poverty line but such facilities do not reach up to needy and poor people due to corruption present in the chain. One of such facility provided by government is Rationing Material Distribution. All the people having a ration card to buy the various materials (sugar, rice, oil, kerosene, etc.) from the ration shops. These materials have to be taken from the shopkeeper at one time. If it is not taken by any card holder then there is no monitoring of such unused material. So the shopkeepers are misusing these things by selling in the market and doing the fraud.

Public distribution system is one of the widely controversial issues that involves corruption and illegal smuggling of goods. One reason of this to happen is because every job in the ration shop involves manual work and there is no specific technology involved in automating the job. Involvement of manual work calls a lot of irregularities. These irregularities or illegal activities are for example - wrong entries in stock register of shop containing wrong stock information of the products that is supplied to the public. The information regarding the actual available stock quantity in a ration shop that is provided by the Government to the public. We are proposing the concept of replacing manual job in public distribution system by automated system which can be installed at the ration shop with ease. In this automated system all the details of the consumer are recorded at once, when required the details are verified and processed with an ease. Using such a system, Government would have all required control over the transactions at ration shop. Hence it is possible to prevent the corruption and irregularities at ration shop.

TITLE	-----	
SL.NO	USN NO.	NAME
1	1MS12CS034	Satya Krishna Gorti
INTERNAL MENTOR	Chetan Shetty	

Equity Revenue Dashboard is an application that describes the life cycle of trades of various clients of Morgan Stanley. This application describes various trades of the clients along with many financial metrics such as trade date, quarterly revenue, weekly revenue, prime brokerage metrics and parameters such as loss ratio and other aggregator functions must be calculated and displayed in real time.

This will help traders take decisions for modeling their strategies. This is a real time application that will be used internally by Morgan Stanley financial analysts to track, monitor and forecast their decisions. This will help them model their strategies. This application will also contain various visualizations based on the above mentioned metrics to make better decisions and be informed about the variations in these metrics.

TITLE	Single Pane Management of Cloud Email Security	
SL.NO	USN NO.	NAME
1	1MS12CS049	Kush Bavishi
INTERNAL MENTOR	Mrs S. Rajarajeswari	

Cisco Cloud Email Security provides cloud-based email protection, helping organizations reduce their onsite data centre footprint and reduce costs. Cisco Cloud Email Security monitors and filters all inbound and outbound email traffic using effective policy-based data loss prevention and encryption.

The project aims at increasing CES top-line by enabling Service Providers and Partners to host CES in their Data Centres. It integrates Configuration, Reporting and Monitoring in a Single Pane. It also aims at implementing several features to improve the User Experience, user efficiency, customer satisfaction and billing visibility.

TITLE	IIM-A: Data Analytics	
SL.NO	USN NO.	NAME
1	1MS12CS056	Meghana B S
INTERNAL MENTOR	Hanumanth Raju	

The internship project is based on the Data Analytics domain. Projects of corporate companies are undertaken in order to provide various insights that help in changing and improving business methodologies and processes in real-time. The aim is to present cutting edge analytics for various clients. Mathematical models are fitted to analyze and efficiently solve the problem. Graphical representation of the results of analytics is also presented to the clients to aid visual interpretation. Competitor profiles are also analyzed to equip the clients with a competitive edge in the market. The objective is to solve the real time problems faced by the clients by applying various machine learning techniques. Statistical Analytics System programming language is exploited to present business-critical information that enhances business intelligence and performance management. Predictive analytics is employed to facilitate the overall revenue turnover of the clients to witness a significantly steep incline.

TITLE	Expressive detection over Videos using Deep Learning on GPU	
SL.NO	USN NO.	NAME
1	1MS12CS111	Sriram Anupindi
2	1MS12CS140	Sharath R
3	1MS12CS047	Krishna Chaitanya S
4	1MS12CS068	Nirupam K N
INTERNAL MENTOR	Dr. K G Srinivasa	

The burgeoning of social media has given rise to enormous number of images and videos, which are being generated and shared. This rapid increase in multimedia has caught the interest of data scientists around the world over introducing the concept of 'Semantic Analysis of Multimedia'. The emergence of smart cameras and digital video recorders has encouraged the scope for extraction of meaningful content from videos. Banking on processing the videos as our rudimentary concept, our project intends to detect the expressiveness (in other words how well the person is expressive) of an individual. Many traditional approaches exist to address this situation, however Deep learning is used in this work to achieve the goal. LSTM (Long short term memory) is our selected implementation construct. For training the network we have chosen MIT Affectiva dataset, which comprises of videos of individuals responding to superbowl commercials. Extending this network, we provide two front ends for testing the video sample; one is a web page for uploading the videos and displaying the results and another IoT device which records the video of an individual's response and sends it to the processing server. The expressiveness detected becomes a pivotal feedback for the makers of commercials paving the way for its improvement.

TITLE	Recovering Text from damaged documents using neural networks	
SL.NO	USN NO.	NAME
1	1MS12CS004	Abhishek J
2	1MS12CS022	Darshan Dorai
3	1MS12CS028	Dhiresk Jain
INTERNAL MENTOR	Dr. K. G. Srinivasa	

Vast reserves of information are found in ancient texts, scripts, stone tablets etc. However due to difficulty in creating new physical copies of such texts, knowledge to be obtained from them is limited to those few who have access to such resources. With the advent of Optical Character Recognition (OCR) efforts have been made to digitize such information. This increases their availability by making it easier to share, search and edit. Many documents are held back due to being damaged. For instance, stained text, faded sun spots, dog eared text, wrinkled pages, liquid spills etc are stalling the digitization of such documents.

This gives rise to an interesting problem of removing the noise from such documents so it becomes easier to apply OCR on them. Here we aim to develop a model that helps denoise images of such documents retaining on the text. The primary goal of our project is to help ease document digitization.

We intend to study the effects of combining image processing techniques and neural networks. Image processing techniques like thresholding, filtering, edge detection, morphological operations, etc will be applied to preprocess images to yield higher accuracy of neural network models.

TITLE	A Solution for a Secured Alert System	
SL.NO	USN NO.	NAME
1	1MS12CS001	Abhilash Mukesh
2	1MS12CS040	Jayachitra T R
3	1MS12CS053	Manoj A
4	1MS12CS063	N Veerasha
INTERNAL MENTOR	Dr. Anita Kanavalli	

The objective of this work is "prevention is better than cure". In the corporate world, various aspects of security are historically addressed separately notably by distinct and often non communicating departments for IT security, physical security, and fraud prevention.

This work aims at creating a portable and efficient way of detecting the criminals who try and intrude into any of the public place and are caught around the cameras view, matching the database records of the criminals. The goal of the work is to increase the sense of security in malls and other public places that require and are prone to threats.

In this work that we are going to take up, contains a database as the backend which contains all the pictures of the criminals with some criminal records on them. We use a raspberry pi board which is a credit card sized board which is the heart of this project. We also use a raspberry pi camera which takes in all the photos of the people walking in and out of the public places. We are going to use technology called image processing, which basically tries to match the face of the person with the database that we have. If the match is found then cops and the public who are currently present in the public places are informed and the cops can take action on the criminal immediately.

TITLE	VEHICLE INSURANCE DETECTION SYSTEM	
SL.NO	USN NO.	NAME
1	1MS13CS414	Mithun R
2	1MS13CS413	Manu Kumar
3	1MS12CS087	Rajesh S M
4	1MS12CS026	Deepthi J
INTERNAL MENTOR	Sardar Vandana Sudhakar	

Problems regarding insurance in today's world are insurance fraud, insurance lapse, renewal, detecting lost vehicles. These are becoming serious problems and effective detection for these types of problems has always been a complex task for professionals. The detection of automobile insurance lapse using traditional auditing procedures is difficult or sometimes an impossible task. Traditional auditing procedures are also insufficient to such tasks. These limitations suggest the need for tools to the effective detection of insurance lapse and lost vehicle detection. In order to solve these problems we are developing a system which identifies insurance lapse by the vehicle owner and helps vehicle owners to maintain the vehicle insurance up-to-date by sending notifications regarding renewal of insurance and helps to detect or find out the lost vehicle effectively.

TITLE	Real Time Monitoring Of Environmental Parameters In Precision Agriculture Using Wireless Sensor Network	
SL.NO	USN NO.	NAME
1	1MS12CS020	Chandrakala
2	1MS12CS025	Deeksha
3	1MS12CS067	Nikhita Jayakumar
4	1MS12CS146	Yashaswi G
INTERNAL MENTOR	Meeradevi A K	

Wireless sensor networks are one of the new and upcoming technologies that are autonomous sensors which are spatially distributed. WSN system requires sensors, using sensor nodes one can monitor the physical or environmental conditions, such as soil temperature, soil humidity, soil moisture and to cooperatively pass their data through the wireless technology to the controller.

Precision agriculture is a farming management concept based on observing, measuring and responding to inter and intra-field variability in crops. Traditionally, agriculture is done by performing the task such as planting or harvesting, against the predetermined schedule. But by collecting the real time data on weather, soil, crop maturity and availability, predictive analytics can be used to make smarter decisions. The Arduino Uno R3 is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins, 6 analog inputs, a 16 MHz quartz crystal. It is used to obtain real time values of the plant and also performs analysis on the data acquired.

LM35 temperature sensor is used for measuring the soil and environment temperature.

Soil moisture sensor/hygrometer is used to measure the moisture content of the soil and the soil humidity sensor, DHT11 measures the humidity of the plant. SIM900A is a Tri-band GSM/GPRS engine that enables message sending over the network to the particular mobile device, with details about the soil moisture, temperature and humidity of the plant.

The water motor is intended for the use of watering the plant. As the soil moisture of the plant decreases, the motor automatically switches on. It runs until optimum moisture is reached and then switches off.

TITLE	Dual-Mode Wireless Sensor Network for Real-time Contactless In-door Health Monitoring	
SL.NO	USN NO.	NAME
1	1MS12CS024	DasariTeja Sri Bhargav
2	1MS12CS043	NitishKurgod
3	1MS12CS121	TejasPrem
4	1MS12CS019	BudharajuNishanth Varma
INTERNAL MENTOR	Mrs. J. Geetha Reddy	

Due to the ageing population, real-time and autonomous health monitoring is an emerging priority in ambient assisted living. Current solutions suffer from critical limitations. In this project, a complete system for contactless health-monitoring in home environment is presented. However, the existing sensors are either not practical for wireless implementation, does not have enough accuracy, or are not cost-effective. Hence we are implementing it in a more feasible way. In this work, a wireless sensor network is proposed for home environments by which the sensors are dual- mode radars, enabling concurrent remote localization of a person and fall detection. We elaborate on the network architecture, and in particular on the signaling as to enable real-time data processing combined with radar-based wireless sensing.

The basic idea behind this project is to have a device in the patient's side which records the health activities of him/her like heart rate, blood pressure among others and sends this information to the computer in any other geographical area which can be monitored by a doctor per se. This process is done by the micro controller which converts the analog signals which is received through the sensors in the device to digital signals. This signal which is the information at hand is communicated to the doctor's side by Zigbee communication mechanism.

This is dual mode because the information of the patient can be made to see on the patient's side using an LCD display as well as on the doctor's side. And it's real time because the information which is taken by the device is communicated as and when it is received which helps to avoid life threatening situations. Index Terms are contactless, fall detection, movement classification, radar remote sensing, real-time health monitoring, tagless positioning, trilateration, WSN, Zigbee communication.

TITLE	Automating Builds and Tests For NI RFmx	
SL.NO	USN NO.	NAME
1	1MS12CS069	Nishant Washisth
INTERNAL MENTOR	Dharaniprakash Kurdimath, Pradeep Kumar	

Radio frequency signals are used in many applications. Mobile handsets transmit and receive radio frequency signals. Hence it becomes important to test this equipment's for their proper function. NI manufactures various computer based instruments for the testing of RF signals & devices. These instruments require a driver software to be developed for them to be used programmatically. RFmx is driver software which will used by customer to access & interact with NI RF instruments.

This project aims at automating the daily builds (installer) for the different personalities of rfmex and also automating their testing (Sanity tests and Installer exports verification).

TITLE	Building A Web-Service Framework (Stow-Rs) For Medical Imaging	
SL.NO	USN NO.	NAME
1	1MS12CS143	NEHA PATHAPATI
INTERNAL MENTOR	Srinidhi. H	
EXTERNAL GUIDE	Ms. Revathy Sreenath	
<p>STOW-RS (Store Over the Web – Restful Service) is a restful service that facilitates third party clients to store DICOM (Digital Imaging and Communication in Medicine) files over the PACS (Picture Archival and Communication System).</p> <p>DICOM is a standard that defines the format of medical images. PACS provides an infrastructure for the electronic management of images and related information. PACS is employed by hospitals all over the world for long-term storage of medical images and also for facilitating sharing of images between physicians/radiologists. The primary characteristics of PACS are:</p> <ol style="list-style-type: none">1). They bring an end to the use of film as the legal mode of archiving medical images.2). They enable simultaneous access to images and related information, by authorized personnel at any time and from any location.3). They provide the ability to diagnose a medical condition from these images with a computer i.e. Computer Aided Diagnostics.4). They improve the scanned image quality, and reduce the need for retakes.5). The above mentioned characteristics of PACS have led to its widespread deployment in health organizations.		

TITLE	Obstacle Avoidance Systems using Sensor Fusion and 3D Evidence Grids	
SL.NO	USN NO.	NAME
1	1MS12CS013	Arshea Bimal
INTERNAL MENTOR	Mrs. Sowmyarani C. N.	

In degraded visual environments or brownout conditions where visibility is diminished, terrain details which may be crucial to a safe landing are unavailable. It is necessary to know the location and distance from obstacles which may not be present in existing databases. This data regarding obstacles needs to be obtained in real time from multiple sensors.

The aim of the project is to build a system which can detect and avoid hurdles in a vehicle’s environment. Various sensors collect environmental data. Of all of the data certain data points are removed based on necessity and those which are important are retained. These retained points are then used to occupy voxels in an evidence grid. Later, occupied cells can be retrieved from the grid and further processed to detect the obstacles in the environment. This can be done using a feature based detection method like SURF or SIFT. When detected, the obstacles are stored based on position in an evidence grid. The grid can then be used to render the obstacles on a display as required.

A three dimensional evidence grid divides the environment into small unit cubes. Detected points can then be stored based on which unit cube they are a part of. The advantage of using evidence grids over model based or reactive systems is that they are far more accurate and reduce geographical ambiguity.

TITLE	Secure Code Development by Static Analysis	
SL.NO	USN NO.	NAME
1	1MS12CS090	Raunak Shah
2	1MS12CS074	NehaPothina
3	1MS12CS006	AditiHudli
4	1MS12CS052	Manasa M
INTERNAL MENTOR	Dr. K.G. Srinivasa	

Computer program analysis is the process of automatically analysing the behaviour of computer programs. There are two main approaches to program analysis: static program analysis and dynamic program analysis.

Static program analysis is the examination of source code prior to its execution. Static analysis techniques attempt to predict the behavior of a program.

An application of static program analysis is to determine the quality of source code. Humans are prone to errors, and in most cases, the penalty of deploying low quality code is very high for an organization. Low quality source code could give rise to potential security vulnerabilities in an application, which could be exploited by malicious users.

In this project, we have built a static code analyzer that detects potential security vulnerabilities present in the input source code.

TITLE	Reducing Search Space in Big Data Mining	
SL.NO	USN NO.	NAME
1	1MS12CS119	SWEETY KUMARI
2	1MS12CS144	PRIYA SHARMA
INTERNAL MENTOR	Sini Anna Alex	

Data in many real-life applications are voluminous and also riddled with uncertainty. Thus, it becomes essential to develop and apply sophisticated algorithms to process this enormous quantity of complex data.

Big data is a term for massive data sets having large, more varied and complex structure with the difficulties of searching, storing, analyzing and visualizing for further processes or results. With the advent of technology, not only is data generated at a staggering rate, but also spans unstructured and semi-structured data, not just static data. This has resulted in a drastic change in important processing mechanisms. One of them is Searching and the reduction of Search Space as Search Space for users is now very large and sometimes may contain data irrelevant to their search.

In this project we aim to reduce the search space for text based information using a single machine clustering algorithm. We apply clustering algorithm before applying any searching algorithm because it partitions the data into various clusters and limits the search space to a particular cluster rather than searching in the whole dataset. Clustering is a process of partitioning or grouping a given set of unlabelled patterns into a number of clusters such that similar patterns are assigned to one cluster. This enables easy processing of huge quantities of data. To achieve this we implement the Fuzzy C Means Algorithm. In this algorithm, membership of the data is calculated with respect to each cluster

and based on the maximum membership value, appropriate cluster is assigned. In many real cases the boundary between clusters cannot be clearly defined. In such cases the Fuzzy C Clustering method provides a better and more efficient method to cluster these patterns by using degree of membership. Beyond this, an efficient search algorithm is implemented called, the Lucene Search Algorithm. Lucene search can index any text based information and then find it later based on various search criteria.

TITLE	Smart Helmet For Bike	
SL.NO	USN NO.	NAME
1	1MS13CS418	Saddamhussain
2	1MS12CS023	Darshan K P
3	1MS13CS400	Anil Pawar
4	1MS13CS420	SreekanthNayak R
INTERNAL MENTOR	H V Divakar	

Alcohol reduces concentration. It decreases reaction time of a human body. Limbs take more to react to the instructions of brain. It hampers vision due to dizziness. Alcohol dampens fear and incites humans to take risks. All these factors while driving cause accidents and many a times it proves fatal. For every increase of 0.05 blood alcohol concentration, the risk of accident doubles. Due to drunk and driving every year thousands of deaths occur particularly for two wheeler accidents and many more are injured. Due to injuries thousands of them will be left crippled with permanent disability.

A smart helmet is a special idea which makes motorcycle driving much safer than the existing system i.e. Helmet. This is implemented using Microcontroller. The working of this smart helmet using Microcontroller is very simple, here we place the vibration sensors in different places of helmet where the probability of hitting is more which are connected to Microcontroller. So when the rider crashes and the helmet hits the ground, the sensors sense and the Microcontroller extract data using the GSM module that is interfaced with Microcontroller. When the data exceeds minimum stress limit then GSM module automatically send message to ambulance or police or family members.

TITLE	Cloud Based Air Quality Analytics.	
SL.NO	USN NO.	NAME
1	1MS12CS112	Subrahmanya G. Avadhani
INTERNAL MENTOR	Dr. Jayalakshmi D. S., Dr. Purnaprajna Mangasuli, Dr. Ekambaram Thirumaran	

The Air Quality is being monitored at various stations by governmental organizations in the India. The current project aims at capturing the data being hosted by the Central Pollution Control Board, analyzing the pollution data and rendering the insight of the air quality using the dashboard. The intended dashboard will raise the alert and convey it to the concerned authority to take the corrective measures.

TITLE	ICA SIMULATOR ON CISCO WAAS	
SL.NO	USN NO.	NAME
1	1MS12CS100	Selva Priya S
INTERNAL MENTOR	Prof. Mamatha V Jadav	

Driven by ever-increasing pressure on a multitude of issues – including cost control, manageability, security, regulatory compliance, and business continuity – some IT managers are considering desktop virtualization models as an alternative to traditional distributed software deployment. Thanks to recent advances in technology, IT has a range of centrally managed models from which to choose. From terminal services to VHD, blade PCs through application and OS streaming, each model has its advantages and trade-offs. Rarely is a single model adequate to meet the needs of all users and all applications. Instead, the needs of each group of users, as well as IT requirements and existing infrastructure, must be carefully considered. In most cases, an enterprise solution will likely involve a combination of models. Choosing the appropriate model requires balancing several interrelated factors. Excessive focus on only one of these factors is likely to result in a less than optimal solution. For example, focusing exclusively on IT requirements may result in an easy-to-manage system that is difficult for users to use. Be sure to consider the application and business needs of the entire user base to understand which applications and data it makes sense to centralize versus installing locally. It's helpful to segment users based on tasks performed and applications required. Individual users may need to access different applications using a mix of models. Rarely will a single model meet all the needs of a given group of users, let alone the needs of every user in the enterprise. Decisions about which model to use often get intertwined with the client device on which it will be deployed. It's important to consider these topics separately. In this model, the main challenge is the communication between the client and the server. As the client sends only input device data and receives only output device packets, all the computations must be performed at the server. Therefore, the communication between the client and the server becomes massive and a protocol is required to optimize the chatty traffic between the client and server. ICA is one of such protocols. The purpose of this project is to build and develop an ICA Simulator.

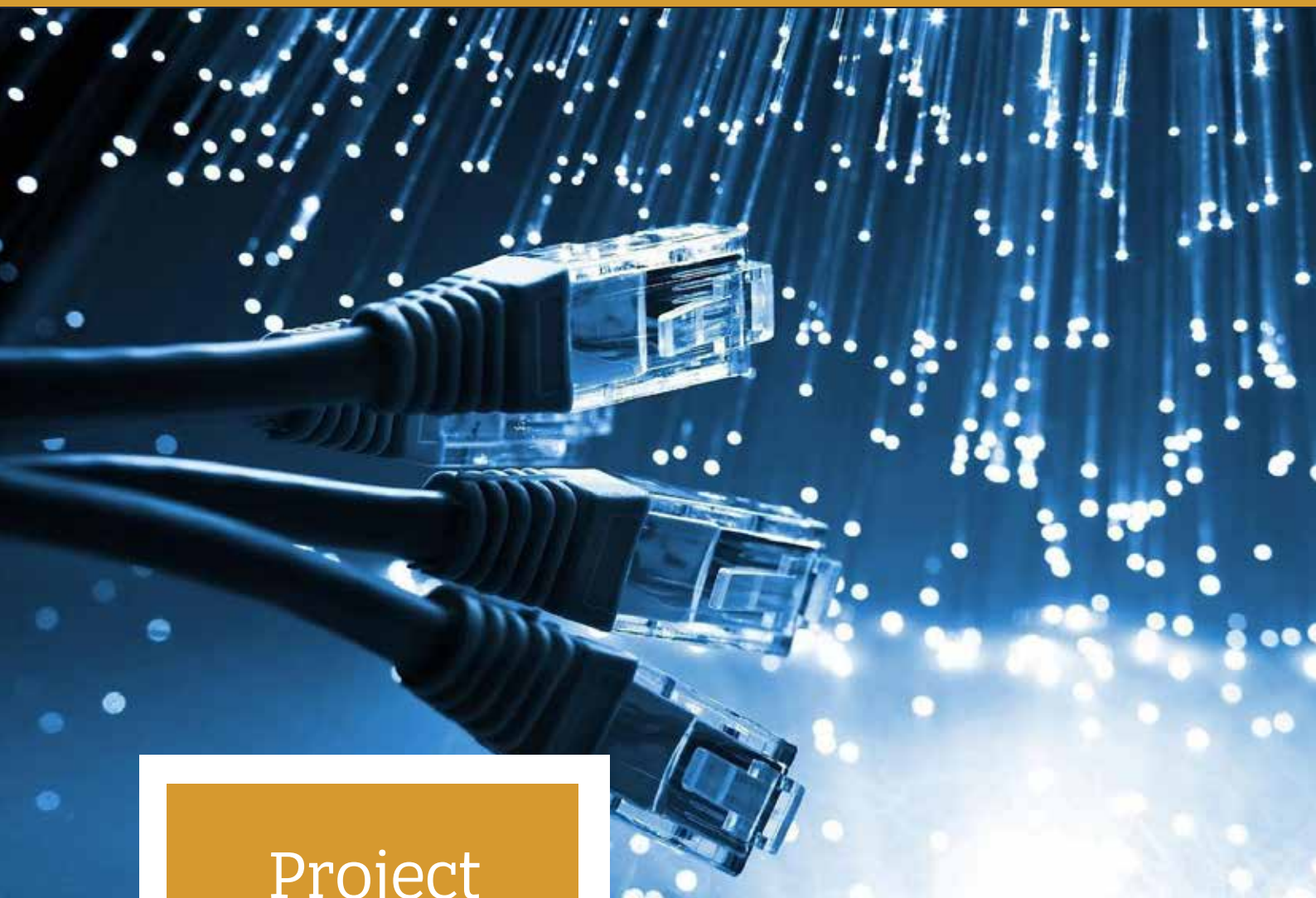
TITLE		NFC based Health Care System	
SL.NO	USN NO.	NAME	
1	1MS12CS123	Udhav Chandel	
2	1MS12CS071	Pallavi Hemmige	
3	1MS12CS064	Nagashree Devayani Urs	
4	1MS12CS107	Shwetha Srinivas	
INTERNAL MENTOR		Chetan Shetty	

With the recent increase in usage of mobile devices especially in developing countries, they can be used for an efficient healthcare management. In this work, we have proposed a novel architecture for improving healthcare system with the help of Android based mobile devices with NFC and Bluetooth interfaces, smartcard technology on tamper resistant secure element (SE) for storing credentials and secure data, and a Health Secure service on a hybrid cloud for security and health record management. The main aim of our project is i) Secure Medical Tags for reducing medical errors and ii) Secure Health card for storing Electronic Health Record (EHR) based on Secure NFC Tags, mobile device using NFC P2P Mode or Card Emulation Mode. We have also briefly mentioned a basic security framework requirement for the applications. Simple touch of NFC enabled mobile devices can benefit both the patient as well as the medical doctors by providing a robust and secure health flow. It can also provide portability of devices and usability for health management in emergency situation, overpopulated hospitals and remote locations. In this we can add some more applications also like Hospital appointment and Medicine scheduling.

TITLE	Automatic Transcription Of Educational Videos	
SL.NO	USN NO.	NAME
1	1MS12CS101	Selva Priyanka S
INTERNAL MENTOR	Dr. Annapurna P Patil (Department of Computer science and Engineering, MSRIT) Dr. Om Deshmukh (Xerox Research Centre India)	

Students have off late taken to learning through online courses. The primary mode of instruction in these courses is through videos. Learning through videos offers multiple advantages to students looking to learn anytime and anywhere. These videos are rich sources of information. Obtaining the contents in the videos as a textual transcription is very advantageous. Analysis on the transcripts can be used to perform several enhancements to the learning experience. Obtaining the accurate transcript is an elaborate process. This project will look at a process to get the best matching transcript of an educational video.

DEPARTMENT OF **ELECTRONICS AND COMMUNICATION ENGINEERING**



Project
Abstracts

2016 - 2017



TITLE	Analysis, Review and Applications of AI Optimization Algorithms in Image Processing and Computer Vision	
SL.NO	USN NO.	NAME
1	1MS12EC014	Amith Lawrence
2	1MS13EC001	A V S Aditya
3	1MS13EC044	Jagadeeshwaran
4	1MS13EC006	Adithya P
MENTOR NAME	Dr S. Sethu Selvi	
ABSTRACT		
<p>A review of nature inspired optimization algorithms, which is currently a very active research area, is carried out in this project for different image processing applications like image enhancement, thresholding, classification, clustering, feature extraction, and image registration. They optimize the existing algorithms by a great deal and try to improve the performance of conventional algorithms in terms of both time and accuracy. Artificial Bee Colony (ABC) algorithm is used to carry out 2D adaptive filtering for noise cancellation. Adaptive filtering is dynamic and can learn and optimize itself based on changes in the inputs provided to the system. The 2D-ABC adaptive filtering algorithm is compared with algorithms like Wiener Filtering, 2D-LMS, and 2D-RLS. ABC algorithm is also tested for face detection by converting the algorithm to binary using thresholding. This is compared with other algorithms like Particle Swarm Optimization (PSO). For face recognition, BAT algorithm works effectively and the project has used it successfully in a face detection system. This reduces the feature size by a factor of 4, thus speeding up the process and saving space. The performance of BAT algorithm is compared with other algorithms in terms of recognition rate, time, and number of features selected.</p>		

TITLE	Automated Signal Jump Logging And Alerting System.	
SL.NO	USN NO.	NAME
1	1MS14EC419	Syed Sabeel
2	1MS13EC048	Kashyap Narayan
3	1MS13EC010	Anil Kumar
4	1MS11EC092	Ramu B S
MENTOR NAME	M S Srinivas	
ABSTRACT		
<p>Traffic accidents and congestion has increased enormously. Many problems are caused due to traffic rule violations by some people. The existing system is based on cameras to detect the violator. This system has some limitations, like blurry image due to motion, poor image resolution etc. This project is based on RFID technology which help in solving problem of traffic violation detection.</p>		

TITLE	Automatic Number Plate Recognition	
SL.NO	USN NO.	NAME
1	1MS13EC019	Aravind Talikoti
2	1MS13EC020	Ashifa H
3	1MS13EC139	Theegalapally Nikhilashwary
4	1MS13EC407	Mohan K V
MENTOR NAME	Dr. K Indira	
ABSTRACT		
<p>Automatic Number Plate Recognition (ANPR) plays a significant role in smart traffic monitoring systems owing to increased vehicle theft, violation of traffic rules and trespassing into restricted areas. This project focuses on making the ANPR systems as generic as possible by reducing human intervention and environmental effects. ANPR system involves detection and recognition of vehicle number plate in a video acquired from surveillance camera. A novel technique is proposed for automatic vehicle tracking and extraction of the license plate from a video in real time using a surveillance camera. The method involves tracking a vehicle by monitoring its Euclidean distance from a visible calibration line. Novelty lies in using the concept of Euclidean distance for the complex task of tracking vehicles. Once the number plate is localized, character segmentation and recognition is performed to obtain the number plate text. The text will be stored in the database which can be accessed at any time and from anywhere in the world. The algorithm is tested for 75 vehicles and is found to provide efficient results.</p>		

TITLE	Smart Parking and Surveillance	
SL.NO	USN NO.	NAME
1	1MS13EC004	Adhishree Jaiprakash
2	1MS13EC047	Karan Motwani
3	1MS13EC069	Nikhil Chhabria
4	1MS13EC107	Siddarth Asokan
MENTOR NAME	Dr. K Indira	
ABSTRACT		
<p>Cities generally have a major impact on the economy of the nation and are major centers of resource utilization. This requires efficient and well planned resource management and solutions is provided by information and communication technologies. With increasing number of vehicles in cities, a simple task of parking one’s car become arduous. The implementation of an efficient smart parking system would prevent confusion and allow for efficient utilization of the available parking space. Therefore, this project mainly deals with an important component of smart cities which is smart parking. Beyond this, a smart city may also be responsible for security to its citizens and this is achieved by city-wide surveillance schemes. The project involves implementation of a camera based wireless network for parking space identification and in future, surveillance based application can be implemented.</p>		

TITLE	Facial Gesture Recognition	
SL.NO	USN NO.	NAME
1	1MS13EC136	Vinay S
2	1MS13EC138	Sukruth K
3	1MS13EC097	Sai Pranith G
4	1MS13EC114	Sridhar G
MENTOR NAME	Dr. Maya V Karki	
ABSTRACT		
<p>Facial expression recognition forms the major component in recognizing human emotions. In this project, deep Convolutional Neural Networks (CNN) is used to classify six facial expressions. CNNs take in raw image pixel data and perform processing to obtain the required features. The models were developed using lasagne library on top of theano in python and were trained on GPU to expedite the process. The proposed model uses four layer deep convolutional layers with variable number of filters. Rectified linear unit is the activation function used and soft max layer is used at the end for classification. Open CV is used to extract images from video. This project strives to achieve higher performance.</p>		

TITLE	Face Recognition in a crowd with Live Video Acquisition using Aggregated Stack Features along with Surf Extractor	
SL.NO	USN NO.	NAME
1	1MS13EC119	Subramanya Jois
2	1MS 13EC085	Bharat Reddy
3	1MS13EC120	Suchith Suresh
4	1MS13EC096	Roshinder Singh
MENTOR NAME	Dr. Maya V Karki	
ABSTRACT		
<p>Face Recognition is one of the most important and fastest growing biometric areas over the last several years. A real-time system for recognizing faces using mobile device or webcam was implemented. After all training images are captured, the problem is essentially a "Detect-Extract-Match". The unique thing about the approach herein is that features are detected and extracted with Surf Extractor for each person in the training set, from a single stacked-image montage of that respective subject. The image stream is then restarted and faces are auto-detected. Features are extracted from each detected face, and matched to the set of features for each face in the training set. The one that minimizes the sum of absolute differences (SAD) between images is assumed to be the person in the incoming image. Labels are inserted to indicate the name of that person. The system is tested and achieves high recognition rates. Information about individuals are then stored in a database.</p>		

TITLE	Pothole And Accident Notification System For Two Wheelers Using Mobile Sensor Networks	
SL.NO	USN NO.	NAME
1	1MS13EC082	Pratheek C R
2	1MS13EC132	Varun Rangarajan
3	1MS13EC040	Harish Kumar S
4	1MS13EC089	Rahul Tripathi
MENTOR NAME	Sujatha B	

ABSTRACT

In the proposed method, associated algorithms are used to monitor the road surface and vehicular impact by using a sensor-equipped vehicle with an ultrasonic sensor. Using the inherent mobility of the participating vehicle, this system gathers data from the crash sensors and ultrasonic sensor placed at strategic locations on the chassis of the test vehicle. The measurement principle employed by the crash sensors is usually based on the effect of inertia. The ultrasonic sensor is used to detect and find exact location of potholes, and send its GPS location to the road maintenance department using android app. Image processing techniques are also used to detect potholes, humps and any other objects from a longer distance to alert the driver. An Arduino microcontroller is then interfaced with an android application, which is created using Android Studio. Finally, the user will simultaneously be given a real time update of the quickly approaching pothole via the use of a buzzer.

TITLE	Design And Implementation Of FarmBot	
SL.NO	USN NO.	NAME
1	1MS13EC015	Anusha Ravi Patil
2	1MS13EC063	Medha Sandil
3	1MS13EC062	Manju Kiran
4	1MS13EC005	Adithya N S
MENTOR NAME	Sujatha B	

ABSTRACT

The RoBotanist is a farmbot which is an agriculture robot that promises to usher in the future of farming. Hybrid solar powered robot is used to bring precision agriculture technology to environmentally conscious individuals. Precision farming has been hailed as the future of agriculture, sustainability, and the food industry. Without including delicate sensor technology, the farmbot is a cheaper solution than the industrial precision farming equipment currently on the market. With its universal tool mount, one can adapt the farmbot to do pretty much any garden task one desires. This project aims to implement an affordable farming robot to aid farmers by completely automating the process of farming, and getting maximum yield in a less duration of time. Design of the robot consists of an XYZ plotter with mechanisms for seeding, watering plants at regular intervals of time, and removing weeds. In addition to this, the project will be made environment friendly by efficiently utilizing solar energy. This will be accomplished with the help of a hybrid battery charger which provides the power supply using both solar and electricity.

TITLE	Design And Simulation Of Piezoelectric MEMS Varactors	
SL.NO	USN NO.	NAME
1	1MS13EC053	Layeek Pasha G B
2	1MS13EC055	Lokesh Kumar A N
3	1MS14EC411	Manjushree M M
4	1MS13EC083	Prithvi K P
MENTOR NAME	Lakshmi S	
ABSTRACT		
<p>Compared to semiconductor varactors, MEMS varactors provide low power consumption, high quality factor, which is crucial for use in frequency selection for low power front ends. Additionally, MEMS varactors do not produce harmonic distortion as in the case of diode varactors. Electrostatically actuated MEMS varactors have limited tuning range. Hence, it is proposed to acutate the varactors piezoelectrically. The current work will focus on Piezoelectrically actuated RF MEMS varactors, which aim at reducing the actuation voltage required for obtaining the high tuning range. and support anchor designs. The actuation voltage that was obtained was less than 3.5 Volts, which is CMOS compatible.</p>		

TITLE	Lung Nodule Classification Using Deep Convolutional Neural Network For Detection of Lung Cancer.	
SL.NO	USN NO.	NAME
1	1MS13EC050	Koustav Banerjee
2		Nishal Pereira
3	1MS13EC074	Nishant Prabhu
4	1MS13EC079	Prajwal Rao
MENTOR NAME	Dr. Raghuram Srinivasan	
ABSTRACT		
<p>Diagnosis and cure of cancer have been one of the biggest challenges faced by mankind in the last few decades. This project presents an approach which uses a Convolutional Neural Network (CNN) to classify Lung Cancer screening thoracic Computed Tomography scans (CT scans) as containing either malignant or benign tumours. CNNs have special properties such as spatial invariance, and allow multiple feature extraction. In this work, a CNN suitable for the analysis of CT scans with tumours are designed, using domain knowledge from both medicine and machine learning. The results show that the accuracy of classification for the network is designed, namely CanNet, performs better than traditional multi-layered perceptron models.</p>		

TITLE	Applications of Natural Language Processing Using Deep Learning	
SL.NO	USN NO.	NAME
1	1MS13EC068	Naresh N
2	1MS13EC073	Nishank S
3	1MS13EC041	Harshith Bolar
4	1MS13EC081	Puneeth R
MENTOR NAME	Dr. Raghuram Srinivasan	
ABSTRACT		
<p>In today's information age, thousands of bytes of medical data which includes laboratory records, medical tests, procedures etc., are readily available to everyone a click away. Recent studies show that most diagnostic errors have been associated with flaws in clinical reasoning and empirically prove the evidence between cognitive factors and diagnostic mistakes. In the records of patients with a high-risk diagnosis, it was seen that high-information clinical findings were present before the high-risk diagnosis was established. This predictive model aims to overcome these cognitive biases and diagnostic mistakes by suggesting possible diagnoses based on the patient's medical history which includes previous diagnoses, prescriptions and lab tests. By training standard machine learning algorithms and various neural networks over this data, a system that effectively predicts the conditions the patient may develop within the next year has been proposed. Area under the ROC (Receiver Operating Characteristic) curve is been used as an evaluation metric to test the performance of the proposed method.</p>		

TITLE	System modeling & training using ANFIS with mine blast algorithm	
SL.NO	USN NO.	NAME
1	1MS13EC007	Aditya Kalyani
2	1MS13EC108	Siddharth Bhatt
3	1MS13EC033	Devesh Rajarshi
4	1MS13EC046	Kamalika Poddar
MENTOR NAME	H Mallika	
ABSTRACT		
<p>The motive of the project is to achieve a better training of any system using ANFIS (Artificial Neural and Fuzzy Inference System) and to use a heuristic self learning algorithm MBA (Mine Blast Algorithm) along with it to obtain a better result. The transient parts of any control systems are parts where the modeling is usually seen with a very low accuracy. The combination of the heuristic algorithm (MBA) and ANFIS learns the system in a better way and does the training in a more accurate manner. Results show that using MBA is better than others intelligent algorithms. Thus achieving a better accuracy using the salient features of MBA as well as ANFIS for any random system (preferably with sharp peaks and dips) with a better run time is achievable through this system.</p>		

TITLE	Detection Of Diabetic Retinopathy Using Fundus Imaging.	
SL.NO	USN NO.	NAME
1	1MS13EC011	Anisha
2	1MS13EC013	Ankith Menon
3	1MS13EC017	Archana Prabhakar
4	1MS13EC018	Arjun J Ram
MENTOR NAME	H Mallika	

ABSTRACT

The earliest symptoms that are observed in Fundus images are micro-aneurysms which can be detected and early treatment can be performed. Detection of DR in its earliest stages is challenging even for a doctor. This project helps in detection and classification of diabetic retinopathy in the early stages almost instantaneously. Fundus images are obtained and is marked by an ophthalmologist. The patient's images are categorized based on their age group. Initially, the Fundus images are pre-processed using image processing techniques. Further, the images are passed to the deep neural network (DNN) in order to detect the micro-aneurysms, cotton wool spots, hemorrhages etc. Sets of images are used for training and testing of the network. The algorithm is to accurately detect and classify into the different stages of DR in a short amount of time. The DNN has been trained on the Messidor database having 1200 images for about 140 epochs. After around 70 epochs, Training accuracy (red) increases as Validation accuracy decreases. This means that the network is over-fitting. Around the 70th epoch, the training loss is close to 1, while the validation loss is slowly increasing.

TITLE	Anfis based sensor fault detection and reconfiguration	
SL.NO	USN NO.	NAME
1	1MS13EC110	Sindhura K S
2	1MS13EC123	Supriya B K
3	1MS13EC138	Vishrutha K S
4	1MS13EC140	Swathi D N
MENTOR NAME	H Mallika	

ABSTRACT

Sensor fault detection is performed by estimating the states of plant and comparing them with measured values. A fault is detected when the difference between the estimated and measured values crosses a threshold value. In this paper, an approach to detect and isolate the sensor fault affecting the mean of the Kalman filter innovation sequence is presented. Subsequently, the Kalman Filter will be used to reconfigure by ignoring the measurement from faulty sensor. It is generally difficult to represent a complex process accurately by a mathematical model. Also the sensor fault detection, isolation and reconfiguration is demonstrated using Adaptive-Neuro Fuzzy Inference System(ANFIS) - non model based approach. In the simulation, the longitudinal dynamics of an aircraft control system are considered and the detection and isolation of pitch rate gyroscope faults affecting mean of the innovation sequence are studied. Reconfiguration for sensor faults is carried out so that the estimator provides the controller with an accurate estimate of the system state after the sensor failure.

TITLE	Design And Implementation Of 10 bit Digital Audio Sigma-Delta ADC Using 180nm CMOS Process	
SL.NO	USN NO.	NAME
1	1MS13EC117	Srujan A S
2	1MS13EC124	Suresh K
3	1MS13EC127	Tilak K C
4	1MS13EC135	Vinay H C
MENTOR NAME	M. Nagabhushan	
ABSTRACT		
<p>Oversampling techniques based on sigma-delta modulation are widely used to implement the interfaces between analog and digital signals in VLSI systems. This approach is relatively insensitive to imperfections in circuit components and offers numerous advantages for the realization of high-resolution analog-to-digital (A/D) converters such as they reduce the number and complexity of the analog circuits in comparison with Nyquist-rate converters. A sigma-delta ADC consists of a sigma-delta modulator and a digital filter. Sigma-delta modulator shapes the quantization noise and pushes the majority of the inband noise to higher frequencies.</p>		

TITLE	Improvement In The Reduction Of Peak To Mean Envelope Power Ratio Of Multi-Carrier Phase Coded Signal.	
SL.NO	USN NO.	NAME
1	1MS13EC116	Sriranga R
2	1MS13EC109	Siddharth R Rao
3	1MS13EC099	Sanath Nadig M
4	1MS14EC423	Vinay
MENTOR NAME	C G Raghavendra	
ABSTRACT		
<p>The main aim of this project is to reduce the Peak-to-Mean Envelope Power Ratio (PMEPR) of a Multicarrier Complementary Phase Coded (MCPC) signal. A MCPC signal consists of N subcarriers which are phase modulated by N distinct phase sequences. Each of these N subcarriers are spaced 1/tb apart from each other, where tb is the duration of each phase element, constituting an Orthogonal Frequency Division Multiplexing (OFDM) signal. Peak Clipping and Level shifting techniques are used as an extension to the Companding technique. A comparison of the complex envelopes, and autocorrelation functions of the MCPC signal obtained by the above mentioned methods is performed which exemplifies the advantage of application of the proposed techniques over the conventional method. The performance of these methods in the presence of non-ideal channels is performed to evaluate the proposed techniques</p>		

TITLE	Mechanized Reckoning : Pinheads Of Multivoltine Silkworm Eggs	
SL.NO	USN NO.	NAME
1	1MS14EC400	Amar T
2	1MS14EC407	Harshith R
3	1MS13EC070	Nikitha R N
4	1MS13EC115	Srinidhi R G
MENTOR NAME	C G Raghavendra	
ABSTRACT		
<p>Silk, one of the finest fibers used in the garment industry is gaining popularity today in other fields. Constant research is going in the field of medicine to use silk as a suture material in healing wounds, in the telecommunication field as silk exhibits the properties of an insulating material. But Silk is produced only in few countries in the world because of the climatic conditions. The counting is usually performed in a manual, visual, and non-automatic form, which is erroneous. In the life cycle of a silkworm, the egg stage is a very important one. Proper environment should be provided to the eggs, such as ambient temperature, humidity, light, etc. which determines the development of the silkworms at a later stage. Also, as only healthy eggs hatch and develop into healthy worms, determination of hatch-rate predicts the yield-rate at an early stage. In the sericulture industry, yield-rate refers to the number of healthy silkworms which are capable of spinning cocoon. This directly translates to the total amount of silk produced.</p>		

TITLE	Novel Approach To Generate OFDM RADAR Signal	
SL.NO	USN NO.	NAME
1	1MS13EC067	Nagabhushanabhat K
2	1MS13EC086	Raghu Srivatsa M P
3	1MS13EC088	Rahul N Murthy
4	1MS13EC133	Vignesh Nayak P
MENTOR NAME	C G Raghavendra	
ABSTRACT		
<p>MCPC radar signal accedes the property of orthogonal frequency division multiplexing. A term in the complex envelope expression for MCPC shown similarity to the twiddle factor which paved a way for generating MCPC signal by incorporating FFT algorithm which produces envelope as that with conventional method along with the reduction in the number of computations. According to Siebert detection range for a given radar is independent of waveform which led to the implementation of MCPC signal using other orthogonal transforms. Among all of them FFT implementation results gave rise to the least PMEPR which is the most essential for using power amplifiers in the faithful manner</p>		

TITLE	Behaviour analysis Of Crowd for Anomaly Detection	
SL.NO	USN NO.	NAME
1	1MS13EC087	Rahul Jayanth
2	1MS13EC141	Eshwari Prabhakar
3	1MS13EC066	Mona N M
4	1MS13EC081	Praneet Singh
MENTOR NAME	Shreedarshan K	

ABSTRACT

Detection of anomaly in crowd is of utmost importance as it helps in ensuring public safety. Typically, human operators observe these displays where they have to view multiple displays and control cameras in parallel. Moreover, in large facilities, typically, the number of cameras is much higher than the number of video monitors hence the aim of this project is to use video analytics to automate the surveillance process and thereby detect anomalous behavior in the crowded scene. In order to achieve this a novel method of Curve fitting Using Newton's Technique is been used. Optical flow method is used here to identify the general pattern and direction of motion of the crowd. The differential algorithm, Lucas-Kanade is used for this purpose. Here, the curve fitting method fits an appropriate circle to all the data points available from the Lukas-Kanade output. This is done iteratively for all frames and the output parameters are recorded. If they cross the threshold then one concludes that an anomaly has been detected at that point in the video.

TITLE	Digital Watermarking using Hybrid Transform	
SL.NO	USN NO.	NAME
1	1MS13EC057	Madhu Milan D
2	1MS13EC049	Kiran Hegde
3	1MS13EC075	Nithin A B
MENTOR NAME	Shreedarshan K	

ABSTRACT

This presents digital image watermarking approach to sustain the ownership and true authentication. To secure intellectual belongings of images, audio and videos, watermark W is converted into a sequence of bits and in order to encrypt the watermark. In this method, an imperceptible and a robust combined DWT-DCT digital image watermarking algorithm is described. The watermark bits are embedded in the mid frequency band of each DCT block of selected DWT sub-band. The extracting procedure reverses the embedding operations without the reference of the original image. Compared with the similar approach by DCT and DWT based technique, the experimental results show that the proposed algorithm apparently preserves superior image quality and robustness under various attacks such as JPEG compression, cropping, sharpening, and contrast adjustments and so on. Quality wise the DWT transform is better than DCT, but in performance time wise DCT is better than DWT technique. DCT based watermarking techniques offer compression while DWT based watermarking techniques offer scalability. These desirable properties are used in this combined watermarking technique.

TITLE	Wireless Smartboard using Embedded System	
SL.NO	USN NO.	NAME
1	1MS13EC093	Reshma Shaji
2	1MS13EC125	Suwatika J K
3	1MS14EC420	Tusharani
4	1MS14EC421	Varshitha M
MENTOR NAME	Flory Francis	

ABSTRACT

The proposed design consists of transmitter and receiver modules. The transmitter module i.e., the handheld unit consists of Raspberry Pi 3B model and 5 inch resistive touch screen. The receiver module consists of Raspberry Pi 3B module and a projector, the handwritten signals from the transmitter is processed and transmitted to the receiver module through Wi-Fi connected to the same home network, the received signals are then projected onto the projected via HDMI interface. The proposed design is cost effective compared to the big electronic boards and portable.

TITLE	Smart Water Meter using Wireless networking.	
SL.NO	USN NO.	NAME
1	1MS13EC038	Gulabi Mandal
2	1MS13EC042	Harshitha S V
3	1MS13EC026	Candice Gallyot
4	1MS13EC043	Hrishikesh Aiyappa
MENTOR NAME	Sarala S M	

ABSTRACT

The main problem that is being faced is unequal distribution of water and no limitations which brings about water scarcity, any type of faults or meter tampering is not taken care of unless intimidated, billing is done by the official from the government which may be prone to human errors, also no timely warnings sent to the consumers about their water consumption. The meter is analog and not automatic. The above problems are being addressed by providing the consumers with completely automatic and digitized water meter which would monitor water consumption and also send timely warnings through SMS as well as mail. Any type of faults or meter tampering can be detected automatically without human interference. A database consisting of user details, water consumption details is maintained and updated on a monthly basis on the local server, Google drive, as well as on the cloud (IoT).

TITLE	Automatic Number Plate Recognition	
SL.NO	USN NO.	NAME
1	1MS13EC022	Ashok Kumar
2	1MS13EC028	Chandrashekhara K M
3	1MS13EC030	D C Chetan
4	1MS13EC056	M S Suchindra Datta Koushik
MENTOR NAME	Punya Prabha V	
ABSTRACT		
<p>An inlier-based outlier detection scheme for the anomaly detection in crowded scenes is been employed. First, segmentation is done for the dataset provided to separate the foreground from the background and then extract the features using Histogram of Gradients (HOG) and Motion Direction Descriptor (Horn and Schunk optical flow method). For each descriptor the Kullback-Leibler importance estimation procedure (KLIEP) is employed to compute the ratio of test and training densities which is referred to as the importance estimation. Further allowing us to avoid the difficulty to estimate complex probability density estimation. The importance denotes the degree of similarity between the testing and training data. Based on this importance, one can identify if the frame contains an anomaly event. A high accuracy of localization rate based on the widespread UCSD datasets is obtained through computer simulations.</p>		

TITLE	Smart Water M Analysis, Review and Applications of AI Optimization Algorithms in Image Processing and Computer Vision eter using Wireless networking.	
SL.NO	USN NO.	NAME
1	1MS14EC401	Anand
2	1MS14EC405	Ganesha M
3	1MS14EC40	Hariprasad
MENTOR NAME	Punya Prabha V	
ABSTRACT		
<p>The main aim of this thesis is to evaluate the performance of image segmentation of fetal images. As a part of this study, popular benchmark called Graph cut Image segmentation have been used. The thesis demonstrates the considerable variability in an image understanding system performance based on different choices of image segmentation. Hence, it is proposed that optimizing each image analysis tool in a chain of processes is not enough for deriving optimal performances. This thesis includes results of exhaustive experimentation with three image segmentation algorithms and texture analysis algorithms, and two classifiers, to demonstrate this variability to image segmentation. The thesis also discusses the similarity and differences in performances highlighting different patterns of mistakes made by different combinations. In addition to being a comparative study, it also shows results on object recognition in natural scene images. A complete system starting from image acquisition to generating ground truth data and classifying it is described for the analysis of fetal images.</p>		

TITLE	Analysis, Review and Applications of AI Optimization Algorithms in Image Processing and Computer Vision	
SL.NO	USN NO.	NAME
1	1MS13EC035	G Swathi Jadav
2	1MS13EC113	Sonam Sau
3	1MS13EC126	Swathi C
4	1MS13EC131	Vandana Raj N
MENTOR NAME	Suma K V	
ABSTRACT		
<p>One of the key applications and entry points to Smart Cities is the smart Parking application. It is designed to help drivers in the tough process of finding a parking spot in a crowded city, with the help of this kind of application, citizens can save time, fuel, and associated costs, and hence, increasing the quality of life in cities. Because urban traffic is the cause of 40% of co2 and 70% of other contaminant in cities, smart parking applications also reduce overall city contamination.</p> <p>This smart parking application is based on RFID based authentication with individual sensor devices installed at every single parking slot. Every device processes the signal received by sensing technique and decides if the slot is free or occupied and sends this information to a central server ,where data is processed, clustered and made available to the users via the information website. The RFID based authentication is also used for Theft Detection.</p>		

TITLE	Intelligent Emotion Recognition And Classification Using EEG Signals	
SL.NO	USN NO.	NAME
1	1MS13EC016	Anvitha M
2	1MS13EC025	Brinda M
3	1MS13EC034	Devika Vasanth
4	1MS13EC076	Nivedha R
MENTOR NAME	Suma K V	
ABSTRACT		
<p>Human feelings and emotions are triggered by stimuli which are external or internal and manifest themselves in the form of pulse rate, tone, facial expressions and many more. This project aims at classifying human emotions using EEG signals into four discrete states, namely happy, sad, angry and relaxed using the Russell’s Circumplex model of emotion. The extracted features are optimized using Particle Swarm Optimization prior to classification. Emotion recognition using facial expressions or gesture can always be controlled by voluntary actions while EEG signals concentrate on the inner emotions of a person. Emotional markers are present in EEG signals and it is a relatively easy and cheap method to measure the brain activity. In the current century scientists are diligently trying to make computer interaction more natural. This can be applied in designing wearable gadgets to detect real time human emotions, it helps psychiatrists in treating psychological disorders like autism spectrum disorders (ASD), attention deficit hyperactivity disorder (ADHD) and anxiety disorders.</p>		

TITLE	Simultaneous Localization And Mapping	
SL.NO	USN NO.	NAME
1	1MS13EC021	Ashish R
2	1MS13EC024	B M Sujay
3	1MS13EC027	Caushik R
4	1MS13EC071	Nischal H P
MENTOR NAME	Jayashree S	
ABSTRACT		
<p>SLAM is the process of building the map of an unknown environment and simultaneously achieving localization when the map is beingbuilt. To achieve this goal a terrain robot is used and the method of approach is a probabilistic SLAM model which involves finding an appropriate representation for both observation model and motion model. The method mainly involves utilizing the concept of grid maps to model the world and it does not rely on feature detection and purely depends on probability of occupancyof a cell in the grid to build a map. To achieve localization scan matching is utilised which tries to align successive scans and tries to maximize the current position of the robot with respect to previous position using these scans. To achieve autonomous navigation, the map obtained from the above method is used, where the initial position estimate is set for the robot within the map and set navigation goal.</p>		

TITLE	Acoustics Analysis of formants across gender and age of Indian language	
SL.NO	USN NO.	NAME
1	1MS14EC418	Srinivas Shetty N
2	1MS14EC404	D Vishwanatha
3	1MS13EC103	Sharath Kumara B J
MENTOR NAME	Sadashiv S.V	
ABSTRACT		
<p>Acoustic phonetics studies the physical properties of sounds and provides a language to distinguish one sound from another in quality and quantity. A study of acoustic characteristics of kannada begins with the phonemic analysis of the language. Phonetic analysis of Kannada vowels is presented in this project. The analysis of speech signal based informant space provides a method of assessing the influence of each Formant on a Phoneme across gender and different age groups. Praat software is used forthe purpose of analysis of output. In this work 15 Kannada vowels were recorded from different age groups starting from five years to ninety years old. Pitch and Formants frequencies of corresponding alphabet were computed. The variation of Pitch and Formant frequencies across different gender and different age groups are represented graphically. The analysis is carried out separately for male and female speakers. The preliminary analysis frequency domain characteristics of alphabets shows significant variations across different gender and age groups.</p>		

TITLE	FPGA – Based Predictive Sliding Mode Controller Of a Three Phase Inverter	
SL.NO	USN NO.	NAME
1	1MS14EC404	Divakar M
2	1MS14EC414	Namratha V M
3	1MS13EC094	Riya J C
4	1MS13EC105	Shreya S
MENTOR NAME	Manjunath C L	
ABSTRACT		
<p>Technology plays the major role in healthcare not only for sensory devices but also in communication, recording and display device. It is very important to monitor various medical parameters and post operational days. Hence the latest trend in Healthcare communication method using IOT is adapted. Internet of things serves as a catalyst for the healthcare and plays prominent role in wide range of healthcare applications. In this project the ARM7 LPC2148 microcontroller is used as a gateway to communicate to the various sensors such as temperature sensor and pulse oximeter sensor. The microcontroller picks up the sensor data and sends it to the network through Wi-Fi and hence provides real time monitoring of the health care parameters for doctors. The data can be accessed anytime by the doctor. The controller is also connected with buzzer to alert the caretaker about variation in sensor output. But the major issue in remote patient monitoring system is that the data as to be securely transmitted to the destination end and provision is made to allow only authorized user to access the data.</p>		

TITLE	A Novel FPGA Educational Paradigm using the Next Generation Programming languages Case of an Embedded FPGA System Course	
SL.NO	USN NO.	NAME
1	1MS13EC058	Mahadevi Gudennava
2	1MS14EC410	Kirankumar N G
3	1MS14EC415	Praveen K
4	1MS14EC417	Ravikumar
MENTOR NAME	Manjunath C L	
ABSTRACT		
<p>This project is to design and construct automatic missile detection and destroying system. The system is designed to detect the target (missile) moving in multiple directions. The destroying system moves automatically in the direction of missile and fires it upon fixing the target. This system consists of a ultrasonic based object tracking system that continuously monitors the target. Upon detecting the target it sends the signal to a Central Control System. The Central Control System sends the control command to firing system(laser) to attack the target.</p>		

TITLE	Switch Port discovery using SNMP	
SL.NO	USN NO.	NAME
1	1MS13EC012	Ankit
2	1MS13EC039	Gurushant
3	1MS13EC036	G S P Somanath
4	1MS13EC077	P Babjan
MENTOR NAME	Chira M	
ABSTRACT		
<p>In large organizations the wired Local Area Network (LAN) may spread across various buildings and floors for connecting PCs and servers. The LAN would normally consist of network switches which are remotely manageable. As the number of network nodes increases, the complexity of monitoring, maintaining and troubleshooting also increases. To ensure security, isolate nodes are giving problem therefore it is essential to exactly locate the switch port to which a node is connected. The proposed system, maps Switch Port of the all nodes and finding the end-to-end path is an extremely useful in these circumstances. The proposed system also helps network engineers identify the switch port to which a device is connected and thus eliminates the need of manually tracing the network cables. It also discovers the devices plugged into each port of a specified switch using CAM (Content Addressable Memory) entries of Switches. This is useful for system and network engineers to gain visibility into the IP, MAC, VLAN, status and availability of ports. Since this is a real-time discovery and not vendor specific, the administrators can also view the operational status and speed of each port.</p>		

TITLE	Detection of down syndrome and anencephaly using SURF feature extraction	
SL.NO	USN NO.	NAME
1	1MS13EC091	Rashmi V
2	1MS13EC112	Sneha Rani
3	1MS13EC106	Shweta Rani
4	1MS13EC111	Sirisha K S
MENTOR NAME	Chira M	
ABSTRACT		
<p>One in every thirty three babies are born with a birth defect which account for 20% of infant death. A novel approach is proposed to detect Down syndrome and Anencephaly during 10 weeks of gestation using SURF feature extraction method. Early identification allows for earlier contact with specialists who can help to control the situation. SURF (Speeded Up Robust features) is a novel scale and rotation invariant detector and descriptor which is highly robust.. The detection of either of the findings during the scan should indicate the sonographers to do further tests to confirm the abnormality. In the interim the output arising from this meta-analysis and their interpretation could form the basis for use in the medical domain. The proposed method identifies the abnormality with an accuracy of 96.7742%</p>		

TITLE	Advanced MIMO Signal Detection Algorithm In The TD-LTE System	
SL.NO	USN NO.	NAME
1	1MS13EC037	Gayathri K S
2	1MS14EC403	Arpita M Revadigar
3	1MS14EC409	Kavitha M D
4	1MS14EC412	MeghanaS K
MENTOR NAME	Akkamahadevi.M.B	
ABSTRACT		
<p>MIMO technology has become one of the key technologies of TD-LTE mobile communication system to achieve high data rates, high transmission quality and high system capacity. The key factor whether can it be applied to the actual system is that the detection algorithm performance is good or bad and the level of computational complexity. Several classical algorithms, such as ML (Maximum Likelihood), SD (sphere decoding), ZF (Zero-Forcing), MMSE (Minimum Mean-square Error) and ZF-(O)SIC(Ordered Successive Interference Cancellation),MMSE-(O)SIC algorithm are studied. It is found that the improvement of systematic performances is always at the cost of complexity increase. The main objective of this project is to propose an algorithm to maintain reasonable balance between the computational complexity and the system performance.</p>		

TITLE	Enhancing The Performance Of Handover Technique in LTE Network	
SL.NO	USN NO.	NAME
1	1MS13EC098	Sampatt Anikivi
2	1MS13EC118	Subhash Chander S A
3	1MS13EC121	Sudeep Kumar M
4	1MS13EC137	Sai Pranav T V
MENTOR NAME	Akkamahadevi.M.B	
ABSTRACT		
<p>There is always an increasing demands of high speed data applications in wireless systems with fast and seamless access to voice and multimedia services. Long Term Evolution (LTE) is fourth generation 4 G) communication standards. As the speed of mobile node is expected to reach high rate, the handover will occur more frequently, thus the system performance in terms of delay and packet loss will be degraded. Hence, efficient radio resource management including handover techniques, load balancing and interference management are essential. The HHO (Hard Handover) technique is usually used in LTE system. Since hard handover is 'break-before-make connection', there are chances of call drops. Thus the aim of the project is to enhance the performance of the above handover technique in LTE network, by using the modeled network in different path loss models and determine which models would be appropriate for different environments and constraints.</p>		

TITLE	Fall Detection Sensor With Raspberry Pi	
SL.NO	USN NO.	NAME
1	1MS13EC092	Renu G Karnavar
2	1MS13EC065	Mohit Marhatta
3	1MS13EC009	Amurut Mathew Koshy
4	1MS13EC029	Clifford Jabamani L
MENTOR NAME	Sara Mohan George	

ABSTRACT

Fall detection is a major challenge in the healthcare of the. This project aims at achieving a solution to this problem cheaply and effectively, while also making it reliable and easy to use. The fall detection sensor that has been proposed, is a wearable device that monitors body motion with mounted sensors like accelerometers. A tri-axial accelerometer is used which measures the user's instantaneous acceleration and compares it against predetermined thresholds in order to detect falls experienced by the user. The processor that was chosen for this prototype was the Raspberry Pi due to its availability, its processing capacity and internet connectivity. This accurate detection of falls is further augmented through the use of a webcam as well as a web service that sends SMS's to enable the caretaker to estimate the severity of the fall.

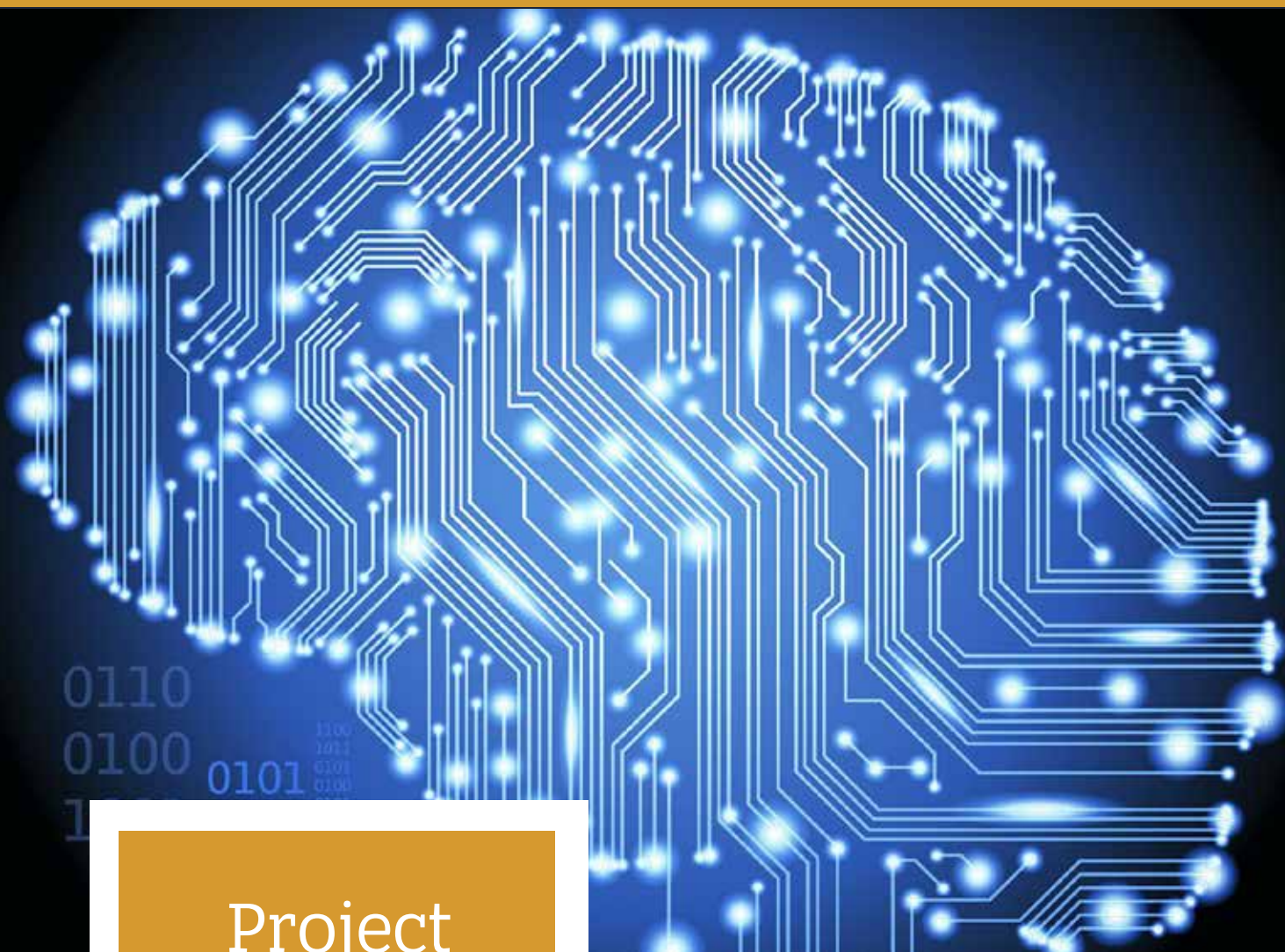
TITLE	Secure Online Shopping Using Fingerprint Verification	
SL.NO	USN NO.	NAME
1	1MS13EC059	Mahip Raj K C
2	1MS13EC060	Mallapa Dhavaleshwar
3	1MS13EC078	Sudheer Madhav
4	1MS13EC100	Sanju Shrestha
MENTOR NAME	Sadashiva Chakrasali	

ABSTRACT

Interest access is becoming easier day by day due to this the number of internet users is increasing globally. India now has 462 million Internet users which is 35% of the total population. In 2016, 43.8 percent of internet users in India had purchased products online. By 2019, this figure is expected to grow to 64.4 percent. Majorities of the people these days avoid the hassle of going to the crowded market and bargain for purchasing. It reduces both effort and time consumption. An unfortunate consequence of the increase in online financial transactions is the increasing risk of online fraud. With the government's recent push for increasing digital transactions, concerns about the security of the financial information become more insistent. Cyber fraud cases of 4.97 billion have been reported by the RBI and CBI since 2011. The most widely used measure to provide security is the OTP (One Time Password) which can be easily accessed if the user mobile number is known. Use of biometrics makes online transaction secure and thus attracting more number of internet users towards it. In this project: "Secure Online Shopping Using Fingerprint Verification", this status of security can be improved by introducing real-time fingerprint verification during online transaction. The implementation by adding one of the most convenient biometric methods of user authentication i.e. fingerprint recognition and verification is proposed. This eliminates the dependency on mobile phones and provides an extra layer of security along with the pertaining authentication methods. Hence, minimizing online fraudulent activities

TITLE	AUTOMATED SMART TROLLEY USING RFID AND ZIGBEE	
SL.NO	USN NO.	NAME
1	1MS14EC402	Archana B A
2	1MS14EC413	Nageshwary K
3	1MS13EC403	BHARATH KUMAR S
4	1MS12EC085	POOJA. J
MENTOR NAME	Veena G N	
ABSTRACT		
<p>An innovative product with societal acceptance is the one that aids the comfort, convenience and efficiency in everyday life. Shopping at mall is becoming daily activity in various cities. Huge rush is observed at malls on holidays, weekends and when there are special offers and discount. Purchasing various items in malls or supermarkets require a trolley. Product procurement represents a complex process. On each occasion customer has to pull the trolley from rack to rack for collecting items and simultaneously customer has to perform estimated expense computation. At the end, customer has to wait in queue for billing and payment.</p>		

DEPARTMENT OF **ELECTRICAL & ELECTRONICS ENGINEERING**



Project
Abstracts

2016 - 2017

TITLE	A study of non-electrolytic capacitor based LED driver circuits	
SL.NO	USN NO.	NAME
1	1MS13EE017	Chandana Raju
2	1MS13EE062	Vemuri Sumana
3	1MS14EE401	Arun Kumar
4	1MS14EE406	Parashuram
MENTOR NAME	Dr. Premila Manohar	
ABSTRACT		
<p>LED’s are more advantageous than incandescent light sources, which include lower energy consumption, longer lifetime, improved physical robustness, smaller size and faster switching. The life expectancy of these LED bulbs is quite high whereas that of its drive is low. The available driver circuit suffer from higher THD, low power factor and less efficient. The LED driver circuit includes the power factor corrector to ensure that the input current harmonics are limited. The most common power factor correctors used are single stage switch mode dc-dc converter or two stage converters which require a large energy storage electrolytic capacitor to balance the energy difference between the ac input power and the dc output power and to reduce the low frequency ripple in the LED current. However, compared to the average lifetime of the LED lamp, the average lifetime of the electrolytic capacitor is very less. Therefore, life time of the overall LED systems is significantly affected by the presence of electrolytic capacitors.</p>		

TITLE	Load Management for an Islanded DG (Distributed Generation) System	
SL.NO	USN NO.	NAME
1	1MS13EE028	Madhuri.A.Kulkarni
2	1MS13EE040	Priyanka.G.Vernekar
3	1MS13EE055	Sayantani Gupta
MENTOR NAME	Sri. Victor George	
ABSTRACT		
<p>The rise in demand for energy has led to two main challenges – addition of new generation capacity and expansion of current transmission and distribution. The advancement in technology has created a concern for the rising environmental impacts which has raised the need for integrating DG units to the power system network. In this project, an attempt has been made to develop a computer based algorithm for the acquirement of load profiles of various loads participating in the islanded mode of DGs and also to develop a load management system which can switch multiple loads on/off according to the generation/load profiles. Also, an attempt has been made to detect islanding during unscheduled events that may be initiated due to the loss of grid power.</p>		

TITLE	Design and Implementation of a Pyranometer	
SL.NO	USN NO.	NAME
1	1MS12EE034	Nisha Kumari
2	1MS13EE410	Shashidhar
3	1MS14EE400	Anoop
MENTOR NAME	Sri. Victor George	
ABSTRACT		
<p>Solar cell based Pyranometer are widely used as inexpensive instruments to measure solar irradiance. These Pyranometers are used in most agricultural purpose for comparative measurement, for educational purpose and extensively used to evaluate the performance of photovoltaic systems. It is well known that solar cell based Pyranometer are spectrally sensitive to the incident radiation.This project targets to make a cheap and affordable Pyranometer to measure solar radiation. which include solar panel connected to voltage sensor to sense the voltage fluctuation, with microcontroller based Arduino Uno which is interfaced by programming including different radiation and voltage according to equation and suitable output are obtained from the LCD display.</p>		

TITLE	Electric Field Analysis of 220kV Polymeric Insulator	
SL.NO	USN NO.	NAME
1	1MS13EE013	Anoop Kiran A.
2	1MS13EE010	Aniketha H.M.
3	1MS13EE014	Arun J.
4	1MS13EE041	Rajkumar
MENTOR NAME	Sri. Vinayak V. Rao	
ABSTRACT		
<p>Environmental conditions such as pollution and moisture can have large influences on the electrical performance of insulators. Outdoor insulators are largely subject to pollutions by dirt and chemicals in various areas. The pollution of insulator leads to surface discharges which can grow to complete flashover of insulator. The flashover of insulator leads to breakage of insulator and power supply interruptions.</p> <p>Polymeric insulators (Silicon Rubber) which are acknowledged for their better performance are also subjected to pollution. To understand the flashover of polymeric insulators under contaminated conditions, many researchers have studied the changes in electric field around the insulator and the flashover mechanism. There have been many reports showing that there can be large difference of insulator flashover performance under clean and contaminated condition.</p> <p>Our project is to analyze the electric field of 220kV polymeric insulator under clean and contaminated conditions. The model of this insulator will be developed with real dimensions in ANSYS LF Maxwell software. Using this software, electric field analysis will be carried out under clean and contaminated conditions.</p>		

TITLE	Autonomous Wheelchair	
SL.NO	USN NO.	NAME
1	1MS12EE020	Firdose Anjum A
2	1MS13EE021	Gaurav Kumar
3	1MS13EE032	Moiz Samee
4	1MS13EE059	Sujeet Kumar Gandhi
MENTOR NAME	Smt. S Dawnee	

ABSTRACT

A novel method for the navigation of the power wheelchair using line following mechanism implemented with IR sensor has been proposed. The user must just select the drop off point and the wheelchair will navigate to the desired location without any human intervention, making the process less tedious for the user and increases ease of use. The navigation is done with line following mechanism along with ultrasonic obstacle sensor. ATMEGA 2560 Arduino microcontroller is chosen as the main controller. The differential speed mechanism is implemented for the turning action of the motor and speed control of the motor is done with H-Bridge ICs. The system proposed is found to be easier to use as compared to the conventional and available systems.

TITLE	Autonomous Robotic Vacuum Cleaner	
SL.NO	USN NO.	NAME
1	1MS13EE019	Faisal Siddiqui
2	1MS13EE054	Saurabh Singh
3	1MS13EE064	Vinay K Shetkar
MENTOR NAME	Smt. S. Dawnee	

ABSTRACT

With the advancement of technology, robots are performing tasks that were performed inherently by humans. This project presents the design, development and implementation of an Autonomous Robotic Vacuum Cleaner. The system, to be implemented, will autonomously perform the tasks of a usual vacuum cleaner, but without the need of human intervention. To achieve this objective, the proposed autonomous robotic vacuum cleaner would make use of advanced perception techniques and machine learning algorithm. Brushless DC motors or Brushed DC motors which have high torque to inertia ratio and high energy efficiency were selected to provide motion to the autonomous robotic vacuum cleaner and perform suction operation. Research on efficient and power consumption friendly methods to suck out impurity particles yielded the type and specifications of the filter to be used. Various existing and novel path planning algorithms were explored to enable the robot to cover the maximum possible area in the most efficient manner. Features like live video analysis and processing, promise to improve the accuracy of detection and avoidance of static and dynamic obstacles. A thorough literature survey yielded the most efficient and optimized methods to design or adopt components which would enable the autonomous robotic vacuum cleaner to satisfy customer demands on the lines of performance, reliability and cost.

TITLE	Biomimetic Design and Control of an Anthropomorphic Prosthetic Hand	
SL.NO	USN NO.	NAME
1	1MS13EE007	Akansha Shrestha
2	1MS13EE029	Manoj K L
3	1MS13EE033	Manisha N
4	1MS13EE048	Sadhu Sri Ravali
MENTOR NAME	Smt. S Dawnee	
ABSTRACT		
<p>The advances in technology have led to several breakthroughs in the field of robotics and prosthetics. However, most of the active upper limb prosthetic devices developed are either over-priced or lack in dexterity. Thus, not being preferred by the amputees. This project attempts to develop an affordable, biomimetic, anthropomorphic prosthetic hand using latest technology like 3D printing. For the amputee to have natural control over the hand, signals from his muscles can be used as inputs. These signals known as Electromyography (EMG) signals can be extracted through electrodes placed on the skin. Besides EMG, voice of the amputee is taken as an additional input to improve the functionality of the hand by providing specialised grip patterns. Furthermore, tactile feedback has been provided so that the amputees can realize the amount of force being applied by the hand on the object gripped. A novel control strategy has been developed using forearm surface electromyography (EMG) and voice control with tactile feedback. This semi-autonomous algorithm is designed such that the amputees will be able to perform activities of daily living effortlessly.</p>		

TITLE	FPGA Implementation of Video Decoder Algorithm for Space Application	
SL.NO	USN NO.	NAME
1	1MS13EE011	Ankan Dutta
MENTOR NAME	External Mentor: Mr. Lalitkrushna Thakar Internal Mentor: Smt. S. Dawnee	
ABSTRACT		
<p>Digital video communication has a universal presence and can be found in many applications such as digital TV broadcasting over satellite, cable and terrestrial transmission channels, wireless real-time video conversation, video streaming over the Internet, or storage in memory storage devices. Although there has been rapid progress in mass storage density, processor speed, and system performance, the demand for data storage capacity and transmission bandwidth continues to eclipse the capabilities of available technology. Thus, there is a need to efficiently compress, encode and decode multimedia data for space applications which have constrained bandwidth and storage space. This project aims to develop a video decoder that carries out the processes of entropy decoding, inverse transformation, dequantisation and reconstruction to produce a decoded video sequence. The developed video decoder can be used for space applications like video conferencing in manned missions and video surveillance of docking operations.</p>		

TITLE	Power Quality Monitoring, Data Logging and Analysis	
SL.NO	USN NO.	NAME
1	1MS13EE044	Rimmalapudi Geethika
2	1MS13EE047	S.Amrutha Varshini
MENTOR NAME	Sri. Kodeeswara Kumaran G.	
ABSTRACT		
<p>Widespread application of power electronic loads in the industrial sector has intensified the power quality issues. Monitoring of power quality and identification of power quality issues is becoming important to protect electrical appliances. Hence, an attempt has been made to design and implement a system which can monitor the power quality. This system can evaluate, displaying the real-time root-mean-squared values and plots of the three phase voltages on a custom made Graphical User Interface (GUI) and record the data on a Secure Digital (SD) for offline analysis. The parameters monitored include voltage fluctuations (under and over voltages), voltage sags and surges. The system so designed can reflect the changes in power quality quickly and accurately.The system is found to be working satisfactorily as per the standards.</p>		

TITLE	Power Train Control of Electric Vehicle	
SL.NO	USN NO.	NAME
1	1MS13EE006	Aishwarya T
2	1MS13EE012	Anmol Pokharel
3	1MS13EE024	Karanpal Singh
4	1MS13EE042	Rajnish Deo
MENTOR NAME	Smt. Kusumika Krori Dutta	
ABSTRACT		
<p>IC engine vehicles increasing day by day lead to increase in pollution as well as consumption of fuel leading to limited availability of fuel resources, which is a great threat to the human being and transportation. The alternate option of the existing problem can be solved by conversion of IC engine vehicle to electric vehicle. This project presents the powertrain control of an electric vehicle that consists of an electric motor that plays a vital role in it and controller for the respective motor. Selection of cost effective motor is based on comparative studies on various factors like speed, cost, maintenance, lifetime. Further the design and the hardware implementation of 3 phase Induction motor bidirectional control drive by using MOSFETs at the inverter power stage and by using AT89S52 microcontroller which is controlled through the accelerometer pedal position based on which speed of motor varies and a switch is provided for the change of direction of rotation.</p>		

TITLE	Smart Door Access with Remote-Connect Capability	
SL.NO	USN NO.	NAME
1	1MS13EE045	Rohan. G. Ranjan
2	1MS13EE051	Saurabh Shirur
3	1MS13EE053	Samarth U.M.
4	1MS13EE061	Trisha Anna Koshy
MENTOR NAME	Smt. Kusumika Krori Dutta	
ABSTRACT		
<p>A foolproof facial recognition, door access system eliminates the need for the traditional deadbolt system currently being implemented worldwide. The key-lock system is obsolete and does not provide the security that is essential to home safety. In a recent survey of burglaries in the United States of America, an estimate of two million break-ins occurs each year. Residential break-ins account for 66% of these crimes. Additionally, the facial recognition systems currently available in the market fail to differentiate a photograph of a person from the person himself. The proposed system captures an image using a camera, after a motion sensor is triggered, which is connected to a Raspberry Pi which processes the image using OpenCV to detect a face from the image. An IR temperature sensor measures the temperature of the face and the Pi compares this value to a set threshold value which detects whether the face is real or not. Using OpenCV, a trusted user is given automatic entrance to the house. If the visitor is unidentified by the system, an image is sent to the homeowner’s smartphone which is integrated into the home-security system through an android application. The owner decides whether access is granted to the visitor thus additional security is provided to the homeowner and the problem of spoofing facial recognition is addressed.</p>		

TITLE	Power Management and Regenerative Braking of an Electric Vehicle	
SL.NO	USN NO.	NAME
1	1MS13EE026	Kevin Jolly
2	1MS13EE037	P M Aishwarya
3	1MS13EE046	B N Roja Kumari
MENTOR NAME	Smt. Kusumika Krori Dutta	
ABSTRACT		
<p>The growing need & demand for alternate forms of transportation that do not depend on conventional energy sources is the cornerstone for the project. Since there are multiple configurations for the Hybrid Electric Vehicle, different power management strategies are necessary to regulate the flow of power to and from various components in the vehicle. Hybrid and Electric Vehicles offer the possibility of fuel saving by regenerative braking, where the electric motor is used as a generator which converts the kinetic energy of the moving vehicle into electric energy when decelerating the vehicle. Special brake systems are needed to entirely exploit the regenerative capability of these vehicles. The brake systems command the two brake actuators (electric generator and brake pressure) and are capable of regenerative blending between them. The primary applications of the project is concurrent to the overall scheme of a hybrid electric vehicle.</p>		

TITLE	Solar Charged RC Lawnmower	
SL.NO	USN NO.	NAME
1	1MS13EE036	Nirbhay Singh Bijral
2	1MS13EE031	M. Ibraheem
3	1MS09EE024	Manjinatha G.S.
MENTOR NAME	Sri. Tushar N. Suresh	
ABSTRACT		
<p>Due to the continuous increase in the cost of fuel and the effect of emission of gases from the burnt fuel into the atmosphere, this necessitated the use of the abundant solar energy from the sun as a source of power to drive a lawn mower. A solar powered lawn mower was designed and developed with a remote controller, based on the general principle of mowing. The designed solar powered lawnmower comprises of direct current (D.C) motor, a rechargeable battery, solar panel, a stainless-steel blade and control switch. Mowing is achieved by the D.C motor which provides the required torque needed to drive the stainless-steel blade which is directly coupled to the shaft of the D.C motor. The solar powered lawnmower is operated by the remote controller on which closes the circuit and allows the flow of current to the motor which in turn drive the locomotive motors used for mowing. The battery recharges through the solar charging controller. Performance evaluation of the developed machine was carried out with different types of grasses.</p>		

TITLE	Solar Powered Electric Vehicle for Agriculture Purpose	
SL.NO	USN NO.	NAME
1	1MS13EE035	Nimbu R Mallabadi
2	1MS14EE404	Naveen Kenchakkanavar
3	1MS14EE410	Somu Sannatti
MENTOR NAME	Smt. Archana Diwakar	
ABSTRACT		
<p>The renewable energy is vital for today’s world as in near future the nonrenewable sources that we are using are going to get exhausted. Fossil fuels are depleting at a rapid rate and we must be prepared to harness alternate energy sources for our daily needs especially for transportation. The “SOLAR POWERED ELECTRIC VEHICLE FOR AGRICULTURE PURPOSE” is a step in this direction. When there is sunlight, the panels on the vehicle convert light to electricity storing it in the battery. The charged batteries are used to drive the motor which serves here as an engine and helps for movement of vehicle. An ideal application of such a Remote-controlled vehicle can be used in the fields for monitoring plant disease by image processing technique and stream live video to an expert for knowing a particular disease and spray the suggested suitable pesticide to the field.</p>		

TITLE	Demand Side Management	
SL.NO	USN NO.	NAME
1	1MS13EE008	Akhil Saurav
2	1MS13EE052	Sandeep Kumar
3	1MS13EE066	Shubham Kumar
4	1MS13EE067	Ritu Raj
MENTOR NAME	Smt. Aruba Rajan	
ABSTRACT		

Demand Side Management (DSM) is one of the most important actions for energy conservation. The DSM help consumers to be more active contributors in the power system in order to achieve system objectives by scheduling their shiftable load. So, in this project an attempt has been made by us to provide recommendations about shiftable loads, ways to reduce energy consumption and connected load of Ramaiah Institute of technology (RIT) campus by conducting a preliminary energy audit in RIT campus. Energy Audit in RIT Campus Bangalore has been conducted to estimate the Energy consumed in a day, week and month, Identification of areas of energy wastage and estimation of energy saving potential in the Canteen, all Departments and Institute Central Facilities has been made by walk-through energy Audit. Also, detailed analysis of data collected is done by suggesting cost-effective measures to improve the efficiency of energy use.

TITLE	Medical and Home Assistant Robot for the Elderly	
SL.NO	USN NO.	NAME
1	1MS13EE001	Aakriti Raj
2	1MS13EE005	Ahalya Mandana
3	1MS13EE016	Avanie Washishtha
4	1MS13EE057	Smriti Nandy
MENTOR NAME	Sri. Gurunayk Nayak	
ABSTRACT		

One of the major causes of air pollution is emission from vehicles. Electric vehicle or solar powered vehicle can be a good alternative in which the emission levels are much lower compared to the conventional vehicles. This project aims to develop a system in which the vehicle especially scooters can be powered by both solar and wind energy. This power is then fed to the vehicle through charge controller and batteries. The positioning of the solar panels and wind turbines are critical to the balancing of the vehicle and production of power.

TITLE	Implementation of Solar and Wind System on Electric Vehicle	
SL.NO	USN NO.	NAME
1	1MS13EE400	Basavaraja Karabasappa Meti
2	1MS13EE039	Prashantha Naik KP
3	1MS14EE402	Komal SS
4	1MS14EE405	Nirmal Prasad
MENTOR NAME	Smt. Aruba Rajan	
ABSTRACT		

The current scenario in many homes, because of busy work schedules, is that many people do not have enough time to spend with the elderly, and cannot help them with simple day-to-day tasks. As there is an enormous growth in technology, the use of robots along with wireless application would be beneficial to help the elderly to achieve simple tasks. This project presents the design and interfacing of a three-wheeled robot with a robotic arm using Raspberry Pi and image processing based on a camera mounted on the robot. This prototype of the robot is expected to solve problems like picking up an object, placing an object, an emergency alert system and medicine reminders for the day.

TITLE	Smart shoe for visually impaired people	
SL.NO	USN NO.	NAME
1	1MS13EE034	Nidhi C Joshi
2	1MS13EE050	Sahana R
3	1MS13EE056	Sharath Shetty
4	1MS13EE063	Vinay Bhat
MENTOR NAME	Mr. Gurunayak Nayk	
ABSTRACT		

Content of the Abstract: In the recent times, every gadget is tending towards smartness, and every city wants to become a smart city. Smart shoe is one such gadget which would help a building become smart. Smart shoe navigates a visually impaired person to reach the required indoor destination using the radio frequency identification technology (RFID). RFID technology consists of RFID tag and RFID reader. The RFID tags get activated in the presence of the RFID reader. Arduino is the microcontroller which controls the functions of it. There are motors placed in the shoe to indicate the direction the user must move i.e. left, right, front. Ultrasonic is provided for obstacle detection. The user is provided with a keypad to select his destination. The data is transmitted to the Arduino through wireless transmission. The Arduino is programmed to read the RFID tags in that destination and vibrate the motor, the rest of the tags are not activated. Simultaneously the ultrasonic sensor will vibrate and activate the buzzer if there is any obstacle. There will be continuous vibration from all motors on reaching the destination.

TITLE	Generation of Electricity by using Road Transport Pressure	
SL.NO	USN NO.	NAME
1	1MS12EE048	Sanket Kumar
2	1MS12EE041	Pushkar Patanjali
3	1MS13EE027	Madan Kumar Rai
MENTOR NAME	Sri.Gurunayak Nayak	
ABSTRACT		

In the present scenario power becomes major need for human life. Due to day today increase in population and lesser of the conventional sources, it becomes necessary that we must depend on non-conventional sources for power generation. While moving, the vehicles possess some kinetic energy and it is being wasted this kinetic energy can be utilized to produce power by using a special arrangement called "POWER HUMP". The energy of moving vehicles can be converted into mechanical energy of the shaft through rack and pinion mechanism. This shaft is connected to the electric dynamo and it produces electrical energy promotional to traffic density. This generated power can be regulated by using Zener diode used for general purpose like streetlights, traffic signals. The electrical output can be improved by arranging these power humps in series this generated power can be amplified and stored by using different electric drives. The maintenance cost of hump is almost nullified.

DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT



Project
Abstracts

2016 - 2017

TITLE	Improving line efficiency of under body area by manpower reduction and semi automation at Toyota Kirloskar Ltd., Bengaluru	
SL.NO	USN NO.	NAME
1	1MS13IM005	Ajit Idagal
2	1MS13IM007	Amrutheshwari. S.S
3	1MS13IM009	Apoorva Vaddepalli
4	1MS13IM023	Kuval. J.C
MENTOR NAME	Internal Mentor: Dr. G S Prakash	
ABSTRACT		
<p>Toyota has developed its production system around eliminating three wastes of Lean: Muda, Mura and Muri. The main focus is on reducing non-value added activities and costs as much as we can, but 100% reduction is not realistic. These concepts of waste that Toyota Production System first targeted were to increase profitability. It is based around reducing unnecessary time and energy usage that costs the company. Incorporating these ideals can save time, man power and money. The main purpose of the project is to reduce these 3 wastes in the under-body zone of the weld shop area. Underutilization of skilled labor was identified and Ergonomic study was carried out to quantify the stress. Simulation models were built using Arena Simulation Software for the present and proposed conditions. The output from these models gives a comparison of different parameters that were of concern. The main benefits were Manpower Optimization, establishment of Pull System, effective utilization of equipment.</p>		

TITLE	Identifying the relationship among AIR pollutants and building a predictive model for the key pollutants	
SL.NO	USN NO.	NAME
1	1MS13IM041	Sai Tarun Kumar
2	1MS13IM046	Shashank Prasad
3	1MS13IM066	Susmith R B
4	1MS13IM060	Vinayak Nayak
MENTOR NAME	Internal Mentor: Prof. A Balakrishna	
ABSTRACT		
<p>The main aim of the project is to build predictive equations for the pollution parameters. By scientific studies it has become clear that compared to all other pollutants, particulate matters are the most important ones which are causing the major respiratory disorders. This project examines average daily data for air pollution with PM2.5 and PM10, collected by 5 monitoring stations in Bengaluru. The stepwise backward regression technique has been used to build the model using R. The models generally performed well with mean R20.64075.The next stage is to obtain the predictive equation. The autocorrelation plot showed that prediction can be improved by building Time Series models (ARIMA). The data points are transformed into stationary set of data points and a uni-variate time series model has been built using ARIMA. The goal is to find and analyze actual relationships of pollutants in time series, to build adequate mathematical models, and to develop short-term forecasts.</p>		

TITLE	Development of shop made Turning fixture for the machining of The Tail plane EYEBOLT	
SL.NO	USN NO.	NAME
1	1MS13IM008	Anish Ray
2	1MS13IM038	Rohit.R
3	1MS13IM047	Shashi Bhushan
4	1MS14IM408	Prabhu Rao
MENTOR NAME	Internal Mentor: Prof. S Appaiah	
ABSTRACT		
<p>We currently undergoing a project work in HAL Bangalore .we had an opportunity to do a combined project based on Mechanical Engineering as well as Industrial Engineering and Management. The project was based on design where we could analyse the various parameters which have to be considered and the design principles which we considered during the design of our project. The component is an Eyebolt which we had to design a fixture for a enlarging the existing hole or a boring operation. It is a critical component which is used in a tail plane of Hawk Mk-132.The major drawback in the designing of Eyebolt is that it is very time consuming and very difficult for the operator to do the operation. We have used a Software Auto desk inventor to a design a 3D model and exact replica of how the component will look alike. Based on the design which we have made we could achieve the dimensions which were specified for the boring Diameter and reducing operator fatigue and reducing the no of Rework and Scrap.</p>		

TITLE	Optimisation of Transportation Systems through Multi- Dynamic Vehicle Routing Planning and other Approaches: A Case Study, APMC, Yeshwanthpur	
SL.NO	USN NO.	NAME
1	1MS10IM027	Mohan. K
2	1MS13IM004	Aishwarya. K
3	1MS13IM033	Nikhil Mathew Varghese
4	1MS13IM052	Sindhu Raghu
MENTOR NAME	Internal Mentor: Dr. CS Chethan Kumar	
ABSTRACT		
<p>This project addresses contemporary challenges faced by Agricultural Produce Marketing Committees (APMCs), such as suboptimal transportation systems, overbearing dependence on manual labor, and unacceptably high process times. Since nearly 3 to 4 million tons of onions and 15% of all potato produce are wasted every year, this project aims to ultimately reduce this wastage within this commodity segment by identifying, isolating, and strengthening value in terms of time saved. The M-DVRP calls for the collection of service times and IATs through detailed time study techniques. The implementation of this model, with the APMC yard considered as a navigation mesh, leads to the development of an algorithm embedded within an online portal that can identify the most optimal route for trucks. This reduces costs as a direct result of time saved. In addition to this, complementary approaches such as ergonomic design for material handling and layout planning leads to the optimisation of the transportation system, and fulfil the stated objectives.</p>		

TITLE	Traffic Light System-A visual Quality Control Tool	
SL.NO	USN NO.	NAME
1	1MS13IM045	Sharanubasava. H.T
2	1MS14IM401	Ajaykarthik
3	1MS14IM407	Murali. S
4	1MS13IM404	Karthik. P
MENTOR NAME	Internal Mentor: Dr. CS Chethan Kumar	
ABSTRACT		
<p>The garment manufacturing companies are experiencing a massive quality problem. We describe a case where” Traffic light system:, a tool of lean quality system was adopted in “Textport syndicate India Ltd.,” a garment manufacturing company. The project is specifically aimed at improving first time quality of the product by bringing precision and consistency in execution of operations by making operators cognizant with their performance level and accuracy at specified intervals. This will lead to rise in efficiency of operators, resulting in growth in output of the factory, as well as reduction in number of defected pieces at the end of sewing lines, subsequently saving the time and the cost incurred by the company on their reworking and alteration. After the implementation of the Traffic light system and alteration will be reduced to 2%-3%. We also provide the charts to contrast the before and after scenario in detail, in order to illustrate the company benefits. After the traffic light system being implemented, the quality status was improved, production capacity was increased, significant days were saved that enhanced the lead time and thus strengthen the supply chain.</p>		

TITLE	A study on improving customer satisfaction using Customer Relationship Management (CRM) and Six sigma methodology for reducing customer complaints of DMC 65011V	
SL.NO	USN NO.	NAME
1	1MS11IM019	Govardhan
2	1MS13IM013	Chethan Kumar G V
3	1MS13IM049	Shreyas B
4	1MS13IM056	T Sugasini
MENTOR NAME	Internal Mentor: Dr. S Bharath	
ABSTRACT		
<p>After sales support is one of the key criteria’s for companies in today’s world, hence customer support becomes very critical and satisfying the customer with respect to functionality, usability, of the product. The methodology used for reducing the number of customer complaints, especially with their fast moving model DMC 650V is six Sigma’s DMAIC methodology which is aimed at revamping the existing business process. Data collection and using feedback questionnaire for measuring and understanding customers discontent, Pareto Chart to identify the vital issues, Fishbone Diagram to analyze the root causes, and finally hypothesis testing on several variables related with installation to arrive at the core issues causing major problems. This information provides us with the business intelligence we need to make informed decisions. It helped us create a business plan, fine tune the existing products and services.</p>		

TITLE	Redesign of Existing layout using IMMER’S technique to improve productivity	
SL.NO	USN NO.	NAME
1	1MS10IM057	Vikas. K
2	1MS13IM035	Prashanth. R
3	1MS13IM059	Varun Susheel Jitender
4	1MS13IM062	Vootkuri Anoop Reddy
MENTOR NAME	Internal Mentor: Dr. S Bharath	

ABSTRACT

Facilities planning refers to the design, layout and placement of facilities such as machinery, equipment, people, tools, storage areas etc. within a physical spatial environment in a way that allows the fastest material flow at the best possible cost while trying to achieve the lowest amount of material handling from the raw material stage to the finished good stage, thereby reducing bottlenecks, idle time and increasing the efficiency & use of equipment, manpower, space and time. The primary aim of the project is to study the manufacturing facility at Indus Metal Packaging in Peenya , Bangalore and use facilities planning methods to create solutions in order to optimize the overall efficiency. The method used is Immer’s technique to improve productivity by optimizing existing manpower, material flow and waiting time of machines. This technique uses the material flow lines and converts to machine flow lines in order to reduce distance between the consecutive machines. This in turn has resulted in saving capital and therefore increases the profits of the company.

TITLE	Quality Improvement in an Aerospace Component Manufacturing Industry through Orthogonal Array Approach	
SL.NO	USN NO.	NAME
1	1MS13IM014	Chinmayi Desai
2	1MS13IM057	Tejaswini Nagesh
3	1MS13IM064	Raagini Gopi
4	1MS13IM065	Vaishnavi Mohan
MENTOR NAME	Internal Mentor: Dr. M. Shilpa	

ABSTRACT

The manufacturing industry has evolved to be more competitive. Quality plays a major role in determining the organization success. Particularly, in an aerospace industry there is no room for non-conformance of the products. From the company records, it was found that five components, namely Nut, Thrust Plate, Fork, Banking Plug and Half Clamp that goes into aerospace product have high percentage of rejections. From the final inspection report, it is seen that Fork and Thrust plate had a very high rejection percentage of 4.38% and 4% respectively; hence these two components are considered for the study. The process mapping for these two components has been conducted and it was noticed that there was very high rejection during the turning operation. Online quality control techniques, viz., Pareto Chart, brainstorming sessions, Ishikawa diagram have been applied. From this, the factors that significantly affect the response have been selected for experimentation. Speed, feed, depth of cut and tool used. One noise factor, environmental temperature, is also considered. L9 orthogonal array has been selected; experiments have been conducted and the results obtained were analyzed using appropriate Signal to noise ratio.

TITLE	Efficiency Improvement in Skirt Stitching Line Through Simulation Modeling	
SL.NO	USN NO.	NAME
1	1MS12IM021	Mirza Mohammed Raza
2	1MS13IM024	Laksh Gupta
3	1MS13IM053	Sri Krishna Mohan
4	1MS14IM409	Ritin. K.T
5	1MS12IM039	Rounak Bageria
MENTOR NAME	Internal Mentor: Dr. M. Shilpa	
ABSTRACT		

In India, textile industry is the major employment providing sector in India. It also has its major share in exports. Garment industry consists of different sequence of operations through which a variety of garments are stitched. It was noticed that too many delays occurred in the skirt stitching line. A detailed study of the line one has been carried out. The Ishikawa diagram was drawn, the causes, sub-causes and root causes of low skirt line efficiency were identified. Profitability is directly affected by efficiency. Therefore, objective of this project is to increase the efficiency of the skirt stitching line. Significant causes that led to delay were frequent machine breakdown, slow operator movements, and trims delay. To improve the line efficiency, time taken for each operation has been collected and that operation taking a very long duration is selected for study. Then, a simulation model has been constructed for the skirt stitching line; improvement have been incorporated in the simulation model and simulation output has been analysed. A change in the plant layout has also been suggested. With this a significant improvement in the skirt stitching line efficiency has been noticed.

TITLE	Overall Improvement of Efficiency in Inventory and Production using Line Balancing, Simulation, Kanban, Kaizen And 5s	
SL.NO	USN NO.	NAME
1	1MS13IM001	Abdul Khalid
2	1MS13IM012	B.B. Kalappa
3	1MS13IM048	Shiv Narrain
4	1MS13IM058	Vaisiri Jagdish
MENTOR NAME	Internal Mentor: Dr. R Shobha	
ABSTRACT		

The plant Featherlite is solely concerned with the production of chairs and supplying sofa sets to meet international standard to provide comfort by incorporating ergonomics in their design. The aim of the company is to have the concept of delight to their customers. The purpose of this project is to map the current process involved in the plant which include procurement, stores, production line and dispatch. Large sections of this industry still suffer from bottlenecks like inefficient working, over staffed operations and fluctuating inventory. This project deals with identifying these bottlenecks and eliminating those using necessary industrial engineering tools and techniques. This project largely focuses on the stores, production and their respective artillery departments. The concepts that we are utilizing to help us achieve our goals are Kanban, Kaizen, 5S, Time study and capacity planning. This project will enable the reader to get an overview of the industry, the problems currently being faced and the solutions that are obtained and are implemented for the overall improvement and increase of efficiency of this facility.

TITLE	Tool Setup time reduction using single minute Exchange Die (SMED)	
SL.NO	USN NO.	NAME
1	1MS12IM062	Yamini. R
2	1MS13IM026	Malavika Chatterjee
3	1MS14IM405	Lakshmi Devi. G
4	1MS14IM411	Tejas. V.N
MENTOR NAME	Internal Mentor:Dr. R Shobha	
ABSTRACT		
<p>This project is carried out at IFB Automotive Whitefield, stamping division that makes seat adjustment (recliner & height adjustment) parts. Since the tools weigh about 6 tons, loading & unloading them with the 250 ton press machine was a problem creator. The aim of the project was to reduce the setup time taken of the above activity. The Shigeo Shingo principles of single minute exchange die concept is been applied to reduce the set up time. A suitable winch to push & extract the tool which is easy, portable & fast has been designed. An animation of this winch using pencil 2d 4.4b software is also been carried out. Further a help call buzzer button has been implemented and shadow board for keeping the tools for the operators & maintenance engineers has been suggested which further brings down the set up time. The techniques of using forklift & crane to load the tool instead of only crane for easy quick movement. By incorporating the above mentioned suggesstions it is observed that 5% of internal elements (machine switched off) to external elements(machine switched on). Thereby reducing 43.82 minutes & reducing idle time by 34 minutes. By calculating a cost benefit ratio of 1.277 & a profit of Rs 25,297.28.</p>		

TITLE	Life cycle assessment of a Metro Train	
SL.NO	USN NO.	NAME
1	1MS13IM015	D. Vinayaka
2	1MS13IM039	Raghavendra. V
3	1MS13IM042	Sakthevel M.D
4	1MS13IM044	Santosh Kumar. K.C
MENTOR NAME	Internal Mentor: Shri. M R Shivakumar	
ABSTRACT		
<p>Life Cycle Assessment (LCA) determines the environmental impacts of products, processes or services, through production, usage and disposal. The present work is confined to the LCA of production and operating phase of a metro train. This work aims to Quantify material, energetic resources and waste production of a metro train, Identifying potential environmental effect of a product, Propose the improvement potential which help in future design strategiesIt is composed of three phases: the first phase is upstream module which involves data quantification on raw material composition and the substituted components used for maintenance. The second phase is core module which involves data quantification on energy consumption, material consumption, waste production, emission to air, emission to water etc. The final stage is downstream module involves quantification about the electricity consumption and supply for the vehicle when it's in the use phase. The result shows that downstream is the most influential phase on environment, which is 95.4%, and rest is due to upstream and core modules. Major energy consumption is at the downstream stage, which is 1853 kWh per route (19km). Result also shows that the area to be redesigned to increase the efficiency electrical devices in order to reduce electricity consumption. Replacing the batteries by capacitors for energy storage and by using gearless traction motor with permanent magnet motor electricity consumption is reduced by 20.037%.</p>		

TITLE	Use of linear scheduling method at BMRCL for optimizing the project duration	
SL.NO	USN NO.	NAME
1	1MS13IM016	Dattathreya Munirathnam
2	1MS13IM028	Melver Lobo
3	1MS13IM051	Siddharth. V. Amin
4	1MS13IM063	Ashutosh Harish
MENTOR NAME	Internal Mentor: Dr. M Rajesh	
ABSTRACT		

The METRO is a service invaluable to the people of the city. The ability to get from one corner of the city to another in a matter of minutes is a necessity for any major metropolitan city. The main aim of the METRO is to make quick, easy and economical transport available to each and every citizen of Bangalore. As is the case with every big construction project, the METRO project faces numerous difficulties causing a delay in the completion date. The aim of this project is to obtain an optimistic and most likely completion date of 1 particular line in the METRO. There exist many factors that could cause delays in construction. Hence throwing some light on these delays and bringing it to the notice of the concerned personnel is also one of the aims of this project. The sequence in which activities can be done is usually overlooked as trivial. In reality, the order in which activities are done is important to ensure good work distribution and maximizing efficiency. Many techniques are available to optimize a process. One such technique is the linear scheduling technique. This technique is almost tailor made for construction activities. The LSM technique is ideal for repetitive activities and construction projects are largely comprised of such activities. Hence the intention is to show how the use of the linear scheduling method can improve and optimize the construction processes at the Bangalore metro rail corporation.

TITLE	Optimization of Oven Assembly Line using Line-Balancing Techniques.	
SL.NO	USN NO.	NAME
1	1MS13IM019	Himanshu Sekhar Choudary
2	1MS13IM020	Kaushal Kumar Singh
3	1MS13IM022	Kaustubh R Ram
4	1MS13IM027	Manasa Prabhu. H
MENTOR NAME	Internal Mentor: Shri. Sudheer D Kulkarni	
ABSTRACT		

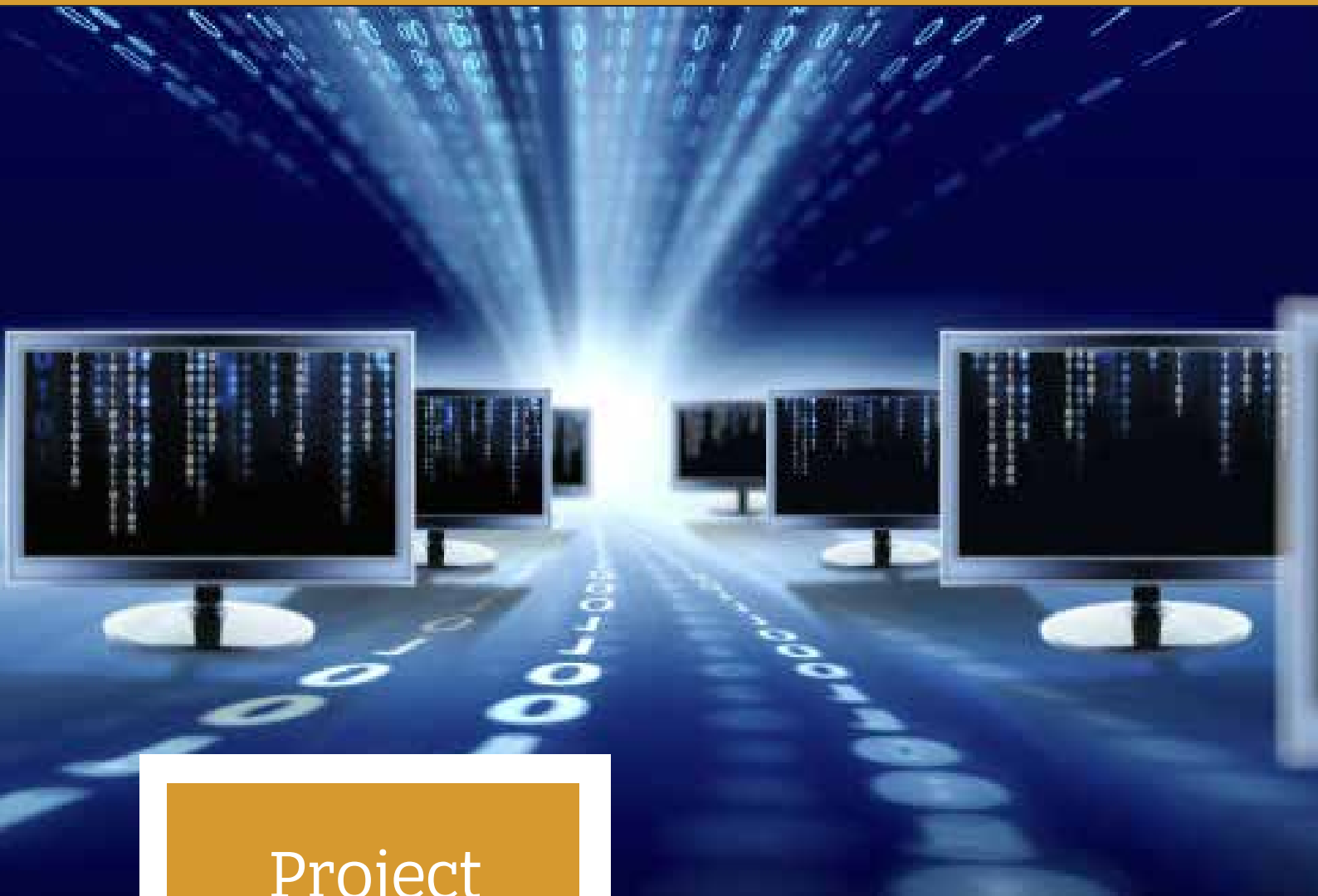
Optimization of oven assembly line using line-balancing techniques is being carried out at C S Aerotherm Pvt. Ltd., located at Bommasandra Industrial Area. The company is one of the leaders in bakery equipment technology and services with over two decades' experience. In the current state, the company is not able to meet the customer demands, the reason for this being the layout of the workstations, and unwanted material movements. The time taken for each operation, and the precedence and sequence of operations was recorded. There are three approaches to balance an assembly line and each has its own advantages and disadvantages. After carrying out detailed analysis, the Ranked Positional Weightage (RPW) method was chosen for conducting ALB, as this method incorporates the best of both methods. By applying RPW method for Assembly line balancing (ALB) it is likely to improve the line efficiency by 20-30% and also decrease the assembly line balance delay by 30-35%, thereby making the workload distribution uniform across the workstations and smoother.

TITLE	A Multivariate data analysis approach to consumer buying behavior patterns in retail supermarkets and its Influence on marketing decisions	
SL.NO	USN NO.	NAME
1	1MS13IM002	Abhishek. B.R
2	1MS13IM003	Adarsh. D. Manjeshwar
3	1MS13IM010	Arjun Narayanan
4	1MS13IM037	R. Tripti
MENTOR NAME	Internal Mentor: Shri. V Vivekanand	
ABSTRACT		
<p>Consumer behavior is a complex, dynamic process. Understanding why and how consumers behave in a particular manner is one of the biggest challenges in marketing. A marketer today is keen to know the different influences that drive the consumer in his decision making, thus, combining the gut feeling of the marketer with statistical scientific information that will enable him to formulate better marketing strategy. With the advent of Big Data Analytics, marketers and businesses have greater insight into the needs of their potential customers. The project aims to highlight this by using Customer and Marketing Analytics techniques to identify the various factors that influence consumer buying decisions in supermarkets. In this project, Marketing Research and Multivariate Statistical approaches have been used to identify the buying decision variables. A questionnaire has been skillfully designed keeping in mind all the parameters that needed to be addressed for this research. On compilation of the data collected from the survey, multivariate techniques like Principal Component Analysis, Factor Analysis, Cluster Analysis and discriminate Analysis has been performed using software's like Minitab and SPSS. Based on the buying decision variables, supermarkets can have a better understanding of what exactly matters the most to the customer and can adopt a better customer centric business model.</p>		

TITLE	Improving the existing system to develop a uniform workflow using KANBAN technique	
SL.NO	USN NO.	NAME
1	1MS13IM017	Derrick Andrew Kharchandi
2	1MS13IM025	Lokesh Golchha
3	1MS13IM034	Pramanshu Ranjan
4	1MS13IM055	Suhas. S
MENTOR NAME	Internal Mentor: Shri. Deepak Kumar	
ABSTRACT		
<p>Increasing competition in the market is forcing us indirectly or directly to adopt the highly competitively paradigm to sustain global market hence we are forced to implement Kanban system in various Industries on top of that we have selected Texport Syndicate Ltd to carry out our project work for the successful implementation of Kanban. Inventory management is an important aspect for any organization to be successful. Inventory is a combination of raw materials, goods and finished products and effective management of these helps to maximize the overall profits of the company. Having said this one of the major area of focus is controlling the number of WIP. To overcome all these problems we had to use lean manufacturing techniques like Kanban. Adopting this technique allowed us to overcome all the problems mentioned above and achieved our objectives like proper reconciliation of fabric was done, better quality controls and most importantly the flow of WIP was controlled using this technique.</p>		

TITLE	Optimization of transfer efficiency of paint in painting system	
SL.NO	USN NO.	NAME
1	1MS13IM043	Sanjay Kumar. R
2	1MS14IM400	Adithya. K.S
3	1MS14IM403	G. Sushmitha
4	1MS14IM406	Mowlya. R.L
MENTOR NAME	Internal Mentor: Shri. P R Dheeraj	
ABSTRACT		
<p>Spray painting is not a very efficient process. Only a part of the paint that is sprayed actually deposits on the target surface. The efficiency of painting is the ratio of the amount of paint that actually deposits to the amount of paint that is sprayed. This project is being carried out at Wipro Infrastructure’s painting division. The aim is to increase the transfer efficiency in the painting area, i.e. to minimize the amount of wastage of paint that is going from the nozzle on to the cylinder. Transfer efficiency means most of the paint that is transferred from the nozzle should be painted on to the cylinder. This project uses Design Of Experiments (DOE) method to minimize the wastage of paint. The transfer efficiency can be increased by optimizing three parameters: paint pressure, air pressure and width of spray gun. By controlling these three components, we can decrease the wastage of paint and thereby it will increase transfer efficiency. Therefore more number of cylinders can be painted, which will result in increase of productivity. This project is being carried out in automatic line in top-coat painting booth. Finally it will increase the transfer efficiency in the painting area.</p>		

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING



Project
Abstracts

2016 - 2017

TITLE	Computer-Vision Based Robotic Weed Control System In Precision Agriculture.	
SL.NO	USN NO.	NAME
1	1MS13IS132	Shubham Barsaiya
2	1MS13IS034	H.V. Sairam
3	1MS13IS133	Tanmay Bhargava
4	1MS13IS019	Arjun Misra
MENTOR NAME	Internal Mentor : Dr. Megha P. Arakeri & Dr. Vijay Kumar B.P	
ABSTRACT		
<p>India is primarily an agriculture-based country and its economy largely depends upon agriculture. But, most of the crops grown by the farmer are affected by weeds. Weed identification and control remains one of the most challenging tasks in agriculture. The most widely used method for weed control is manual spraying of herbicides. But, this method has several negative impacts.</p> <p>The proposed system will be able to differentiate between plant and weed, and will selectively spray the herbicide. The weed control system will be travelling in the agricultural field at a continuous rate and it will be using an optical sensor camera. The images acquired by the camera will be processed in the image processing module in raspberry pi to extract features using histogram. Once the features are extracted, the features are used to validate with the ANN learning model. The output of the learning model will identify if weed is present. This helps in controlling the weed spread in the farm.</p>		

TITLE	Autonomous Detection of Traffic Violation	
SL.NO	USN NO.	NAME
1	1MS13IS043	Kaustubh Deshpande
2	1MS13IS072	Abhigna Reddy
3	1MS13IS076	Preethi Rao
4	1MS13IS101	Shoaib Ahmed
MENTOR NAME	Internal Mentor : Dr. Mydhili K Nair	
ABSTRACT		
<p>Traffic violations in India have gone up by over 100% in the last 10 years. Due to the increase in population in cities, it has become nearly impossible for traffic police to manually control the violations on the road. Over the past few years technology is being used to monitor traffic remotely from the traffic control room. Though this brings about control to some extent, the human error factor still exists. Our project aims to bridge this gap by building a completely autonomous system to detect violations at signals and generate a report which is forwarded to the concerned authorities.</p> <p>The existing solutions for such a system require a change in the infrastructure, which is not favorable in cities. The system is composed of three main modules. One module detects the violation and captures an image of the violating vehicle. The second module reads the number plate and sends it to the cloud. The third module resides on the cloud that receives data from the nodes and generates the reports accordingly. All three modules communicate over secured REST API's.</p>		

TITLE	PREDICTION AND ANALYSIS OF CRIME ON BIG DATA	
SL.NO	USN NO.	NAME
1	1MS13IS108	Srisha Raviillu
2	1MS13IS120	Varsha V.K
3	1MS13IS121	Veeravalli Harika
MENTOR NAME	Internal Mentor : Pushpalatha MN	

ABSTRACT

The Project concentrates equally on both aspects: Prediction and Analysis of crime. All crime data is sourced from Uniform Crime Record maintained by FBI. Prediction part is done using Java and Hadoop. Each of the 21 crime types is assigned an unique number. The crime types are maintained as a vector in Java after assigning the incidents to the crime type using a HashMap during model training, and three modules are built in Java for Classification, Prediction and Clustering. The incidents are classified as crime incident or not using Euclidean Distance Formula. Crime incidents are further classified into the crime type based on location using ID3 decision tree algorithm and Bootstrapping to build an ensemble model. JFree Charts are used to predict the crime scene for the next three days. Clustering of crimes is done based on age and the district along with the crime type. Accuracy for this is over 90%. Analysis and visualization of the crime is done in R. Crime Mapping, Location and Season based crime reporting and crime type prediction and depiction based on location are done using R.

TITLE	Data Analytics and Visualization for Smart Community	
SL.NO	USN NO.	NAME
1	1MS13IS104	Shrinivas P
2	1MS13IS097	Shadh Shanavas
3	1MS13IS123	Vignesh M
4	1MS13IS055	Manya Sharma
MENTOR NAME	Internal Mentor : Dr. Siddesh GM	

ABSTRACT

This proposed system intends to predict pollutant levels for future time frames. It analyzes them individually using linear regression and clustering them using polynomial regression with their respective graphical representation. The Yuktik sensors are responsible for providing the pollutant levels for the time frame which is represented as an attribute called ID_num. Our system at present can analyse these values and make predictions based on a pi-graph and plot a slope and based on the slope's inclination estimations can be made on the levels for future time frames. The aim of the overall project is to have a better overall understanding of how machine learning predictions can be implemented and used to aid third party and government agencies who concern themselves the well-being of the environment and would find appropriate use of the data generated by us.

TITLE	Recommender System using Music Information Retrieval	
SL.NO	USN NO.	NAME
1	1MS13IS092	Samvrudhi V Shankar
2	1MS13IS106	Shubhada Bhatta
3	1MS13IS129	Shetty Nishitha Ganesh
4	1MS13IS131	Kumari Akanchha
MENTOR NAME	Internal Mentor : Myna A N	

ABSTRACT

Music plays an integral role in our lives as the most popular type of recreation. With the advent of new technologies such as Internet and portable media players, Large amount of music data is available online which can be distributed and easily made available to people. Enormous amount of music data is released every year by several artists with songs varying in features, genre and so on.

Traditional ways of listening to music are being replaced by personalized ways to hear and learn about them. To customize user preferences we have recommender systems that help users find songs relevant to their interests. The recommender system focuses on generating playlists based on the physical, perceptive and acoustical properties of the song(content based filtering approach),or on manually defined tags(context-based approach),or on commonalities between users on a particular basis like ratings or user data history(collaborative filtering)

The recommender system presented here novel dynamic music similarity measurement strategy that utilizes both content features and user access patterns so that user is recommended with songs of his/her preference and interests.

TITLE	Blind Spot Detection	
SL.NO	USN NO.	NAME
1	1MS13IS138	Samhitha Jagannath
2	1MS13IS112	Suman Sambrani
3	1MS13IS111	Suffia Sameera
4	1MS13IS082	Rashmi K
MENTOR NAME	Internal Mentor : Mr. Prashanth Kambli	

ABSTRACT

Driving a vehicle in modern traffic conditions is highly risky. In fact, if the driver is not aware of the presence of a vehicle or obstacle in his blind spot, the driver might collide with other vehicles. The Blind Spot Detection (BSD) system based on wireless detection technique is proposed to monitor the blind spot region in the presence of obstacles, automobiles or other objects, in vehicle application. The BSD system is mounted in all the directions of the car. The detection of cars in the blind spot region is displayed by warning light indicators and buzzers. The ultrasonic and infrared sensors is programmed at certain parameter or distance to detect upcoming vehicles, objects or obstacles to activate the warning light indicator. Upon the detection, the device triggers the activation of light indicator for a certain period of time, at different alert zones.

TITLE	Application of Artificial Intelligence and Data Analytics to understand learning mechanism and memory retention	
SL.NO	USN NO.	NAME
1	1MS13IS006	Aishwarya H.
2	1MS13IS064	Nihal V. Nayak
3	1MS13IS098	Shane Martin
4	1MS13IS118	Tanmay Chinchore
MENTOR NAME	External Mentor : Prof. H. S. Jamadagni (Dept. of ESE, IISc)	
	Internal Mentor : Dr. Lingaraju G.M.	
ABSTRACT		
<p>We are trying to understand how people learn new words. For this we have developed a flash card application, titled “V for Vocab”, which will collect necessary data from our user’s as they learn using the application. The novelty of this application is that it has a feature which allows users to input, what they think is the meaning of a word before they study that word. These meanings will be graded using a Semantic Textual Similarity (STS) algorithm which comes under the Automatic Short Answer Grading (ASAG) class of algorithms. The STS algorithm compares the user’s meaning against the dictionary meaning of the word and returns a score.</p> <p>Along with these scores, we are also collecting additional data such as how much time the user is taking to learn a word, details about the user’s learning environment, etc. Consolidating all this data from multiple users creates our dataset which we will analyze to find patterns and correlations related to the user’s learning process.</p>		

TITLE	Intelligent Equipment Health Monitoring using Machine Learning	
SL.NO	USN NO.	NAME
1	1MS13IS044	Kavya S
2	1MS13IS052	Manasa C Rayan
3	1MS13IS053	Manchineella Rohitha
MENTOR NAME	Internal Mentor : Dr. Vijaya Kumar B P	
ABSTRACT		
<p>The application of technology in equipment’s fault detection and maintenance study has become an important aspect not only in the field of research and development but also in manufacturing industry. Thus, automated fault detection and prediction is a crucial enabler for reduced operation time, as well as safety. In this project we have proposed an embedded health monitoring system that uses embedded sensor board with wireless connectivity to collect the real time data from an empirical. Further, a Multilayer artificial neural network (MNN) is created for predicting the equipment health parameters. The Neural Networks package supports different types of training or learning algorithms. One such algorithm is Back Propagation Neural Network (BPNN) technique whose main advantage is that it can fairly approximate a large class of functions. The learning cycle repeats until the predicted values are close to the expected values. The result of the analyzed output will be compared with the actual values of the sensors and the accuracy of algorithm can be determined.</p>		

TITLE	Intelligent Personal Assistant With Alternative Communication	
SL.NO	USN NO.	NAME
1	1MS12IS094	Shreyash Agarwal
2	1MS11IS067	Nikhil Suresh
3	1MS12IS125	Vinut Naganath
MENTOR NAME	Internal Mentor : Mr. Suresh Kumar KR	
ABSTRACT		
<p>An Intelligent Personal Assistant (IPA) is an integrated system of intelligent software agents which work collectively and enables the users in information exchange, time management and automation of routine tasks. Each software agent is a module of code that services a specific request from the user such as sending of email, finding out the weather or to play his/her favourite song. Each of such agents or modules would be required to access and store a variety of data to achieve the appropriate functionality. Hence the software agents require a learning module in order to train the assistant to perform a specific function. Alternative and Augmentative Communication includes all such forms of communication which employs speech or gesture recognition in order to replace the traditional modes of communication which was largely textual. The combination of these two concepts can be used to deliver a powerful system both on a micro and macro scale.</p>		

TITLE	Mood Detection Using Facial Expression	
SL.NO	USN NO.	NAME
1	1MS13IS093	Sanchay Subodh
2	1MS13IS096	Saurav Kumar Pandey
3	1MS13IS100	Shashank Kishan
4	1MS13IS107	Shubham Dwivedi
MENTOR NAME	Internal Mentor : Sunitha R. S.	
ABSTRACT		
<p>A human-computer interaction system for an automatic face recognition or facial expression recognition has attracted increasing attention from researchers in psychology, computer science, linguistics, neuroscience, and related disciplines. Facial expressions are important in facilitating human communication and interactions. Also they are used as an important tool in behavioral studies and in medical rehabilitation.</p> <p>The proposed method has three stages: (a) face detection, (b) feature extraction and (c) facial expression recognition The system involves pre-processing image data by normalizing and applying a simple mask, extract certain facial features using Principal Component Analysis (PCA) and then using Support Vector Machine(SVM) for classification and recognition of expressions. In this project we will focus on trying to achieve high recognition rates across multiple data base which has not yet been achieved in the previous works done on this model so far.</p>		

TITLE	Large Scale Graph Processing Framework	
SL.NO	USN NO.	NAME
1	1MS13IS030	Diptanshu Kakwani
2	1MS13IS040	Himanshu Sharma
3	1MS13IS033	Govind M Prabhu
4	1MS13IS011	Anantha Krishna
MENTOR NAME	External Mentor : Dr. Yogesh Simmhan	
	Internal Mentor : George Philip C	
ABSTRACT		
<p>The world is becoming a more conjunct place and the number of data sources such as social networks, online transactions, web search engines and mobile devices are increasing even more than had been predicted. A large percentage of this growing dataset exists in the form of linked data, more generally, graphs, and of unprecedented sizes. While today’s data from social networks contain 100’s of millions of nodes connected by billions of edges, inter-connected data from globally-distributed sensors that forms the Internet of Things (IoT) can cause this to grow exponentially larger. Although analyzing these large graphs is critical for the companies and governments that own them, big data tools designed for text and tuple analysis such as MapReduce cannot process them efficiently. In this project, we design and implement a large scale distributed graph processing framework called GoFFish. Instead of developing the framework from scratch, we use a general data processing distributed framework Apache Hama. Apache Hama provides the right set of abstractions which we leverage in creating abstractions for graph processing in GoFFish.</p>		

TITLE	Optimum Relay Selection for Energy-Efficient Cooperative Ad Hoc Networks	
SL.NO	USN NO.	NAME
1	1MS13IS125	Vinay M.P
2	1MS13IS122	Vidya B.M
3	1MS13IS116	Sushma S
MENTOR NAME	Internal Mentor : Prathima M.N	
ABSTRACT		
<p>The Cooperative Communication (CC) is a technology that allows multiple nodes to simultaneously transmit the same data. It can save power and extend transmission coverage. However, prior research work on topology control considers CC only in the aspect of energy saving, not that of coverage extension. We identify the challenges in the development of a centralized topology control scheme, named Cooperative Bridges, which reduces transmission power of nodes as well as increases network connectivity. Prior research on topology control with CC only focuses on maintaining the network connectivity, minimizing the transmission power of each node, whereas ignores the energy efficiency of paths in constructed topologies. This may cause inefficient routes and hurt the overall network performance in cooperative ad hoc networks. In this paper, to address this problem, we studied topology control problem for energy-efficient topology control problem with cooperative communication. We proposed optimum relay nodes selection for CC network to reduce overall power consumption of network.</p>		


TITLE	Personalized Recommendation Engine Using HADOOP	
SL.NO	USN NO.	NAME
1	1MS13IS094	Sanjana.V
2	1MS13IS119	Varna K R
3	1MS13IS130	Swathi Rao B
MENTOR NAME	Internal Mentor : Mr.Sandeep B L	

ABSTRACT

More and more E-commerce Websites provide products with different prices which made it hard for consumers to find the products and services they want. In order to overcome this data overload, personalized recommendation engines are used to suggest products and to provide consumers with relevant data to help them decide which products to purchase. Recommendation engines are highly computational and hence ideal for the Hadoop Platform. This system aims at building a book recommendation engine which uses item or user based recommendation from Mahout for recommending books. It will analyze the data and give suggestions based on what similar users did and on the past transaction history of the user.

TITLE	Handwritten digit recognition using Neural Networks	
SL.NO	USN NO.	NAME
1	1MS13IS075	Pratik Khatwani
2	1MS13IS025	Avinash Khatwani
3	1MS13IS049	Kusshal Rao
MENTOR NAME	Internal Mentor : Mrs. Sunita & Dr. Mydhili K Nair	

ABSTRACT

The human visual system is one of the wonders of the world. Consider the following sequence of handwritten digits: 

Most people effortlessly recognize those digits as 504192. That ease is deceptive. In each hemisphere of our brain, humans have a primary visual cortex, also known as V1, containing 140 million neurons, with tens of billions of connections between them. And yet human vision involves not just V1, but an entire series of visual cortices - V2, V3, V4, and V5 - doing progressively more complex image processing.

The difficulty of visual pattern recognition becomes apparent if you attempt to write a computer program to recognize digits like those above. Simple intuitions about how we recognize shapes - "a 9 has a loop at the top, and a vertical stroke in the bottom right" - turn out to be not so simple to express algorithmically. Neural networks approach the problem in a different way. The idea is to take a large number of handwritten digits, known as training examples and then develop a system which can learn from those training examples. Furthermore, by increasing the number of training examples, the network can learn more about handwriting, and so improve its accuracy.

TITLE	Better Memory Retention Through Virtual Reality	
SL.NO	USN NO.	NAME
1	1MS13IS029	Vikram Kamath
2	1MS13IS084	Risav Jhunjhunwala
3	1MS13IS127	Vivek Yagnik
MENTOR NAME	Internal Mentor : Prof Rajeshwari S B	
ABSTRACT		
<p>In an age where attention spans are getting shorter and shorter, and affinity for visual media trumps textual information, there is a need for an interface that makes it easier for the average phone user to read and retain information concretely in memory. The goal is to implement a VR environment that links textual input data to imagery and sound cues that the user experiences in the VR medium. This is achieved through tagging specific keywords in the text and assigning objects that relate to them, therefore making it easier for the user’s brain to draw links between the two and retain the imagery stored in memory. Each corresponding keyword is highlighted and expanded as its object as the text is read out to the user.</p>		

TITLE	Data Mining using Distributed Computing	
SL.NO	USN NO.	NAME
1	1MS13IS036	Harshita R
2	1MS13IS087	Sai Gowri S Kumar
3	1MS13IS103	Shreyansh Jain
4	1MS13IS110	Sudhanva Hegde
MENTOR NAME	Internal Mentor : Sumana M	
ABSTRACT		
<p>The project redesigns and converts an existing sequential rule algorithm, Apriori, to support a MapReduce based parallel computing platform - Spark. Efficiency and robustness of the constructed model will be analyzed to evaluate the performance on various datasets. The input data size is usually quite large in nature, therefore, we used the Hadoop Distributed File System to manage the datasets parallely, reliably and efficiently.</p> <p>The frequent itemset mining shall be done using MapReduce and its related modules which is a programming paradigm in the Hadoop environment. The traditional Apriori approach will be compared to the modified Apriori Algorithm which is suitable for real time applications and their efficiencies will be analyzed.</p>		

TITLE	Data Migration and Deduplication across Heterogeneous Clouds	
SL.NO	USN NO.	NAME
1	1MS13IS135	Amol Walvekar
2	1MS13IS140	Bharath G C
3	1MS13ISO45	Kethaki Ashwin
4	1MS13ISO65	Nikhil Nair
MENTOR NAME	Internal Mentor : Koushik S	

ABSTRACT

With Cloud services growing at a rapid rate there is an increasingly large volume of data being stored on remote servers. However most of the remote stored files are duplicated due to multiple users uploading the same files at different locations. Another issue with increasing Cloud services usage is that migration of data between clouds sometimes results in lost or corrupted data. Security also needs to be ensured while transferring data between clouds.

To overcome the problem of deduplication we plan to use the SP Theory of Intelligence using lossless compression of data to make smaller and easier to manage. To ensure secure transmission of data across clouds we will use encryption techniques such as AES or MD5 checksum. These two solutions will be combined into one project thereby ensuring efficient and secure transmission of data across clouds.

TITLE	A Cost Effective Spirometer For Earlier Detection Of Asthma	
SL.NO	USN NO.	NAME
1	1MS14IS411	Sandeep S Devadiga
2	1MS13ISO86	Sachin C
MENTOR NAME	Internal Mentor : Shashidhara H S	

ABSTRACT

We know that India, is a country where it is rich in population, pollution and poverty, the uncontrollable industrialization and vehicle pollution has become main cause for Asthama in India. The nature of lung disorders which can be tested physiologically consists of the conditions such as asthma, chronic bronchitis and emphysema. These conditions may be related to COPD (Chronic obstructive Pulmonary Disease) which is then identified as the third leading contributor related to cigarette smoking. The existing spirometer system is very rigid, non-portable and costly which is considered as a major drawback.

The aim of this project is to design a portable handheld spirometer unit which is used for the measurement of lung parameters. The Android compatible spirometer is to provide a portable access for the doctors and health experts to predict pulmonary disorders. It helps to outline and execute the hearty and compact spirometer for advanced Healthcare. To make novel ID we have UIDAI number for validation reason for the framework (Project). Easy to investigate the information (Asthama Data) acquired from proposed Project, utilizing site and information diagram by prior Location, which directly makes easy for Government to monitor those locality where Asthama is widely spreading.

TITLE	Coverage Enhancement in Visual Sensor Networks with rotating Capabilities	
SL.NO	USN NO.	NAME
1	1MS13IS009	Akshay Nataraj
2	1MS13IS023	Atyasha Sinha
3	1MS13IS035	Harihara Prasad V
4	1MS13IS046	K Anirudh Mitreya
MENTOR NAME	Internal Mentor : Dr. B.P Vijaya Kumar	
ABSTRACT		
<p>Detecting and tracking of intrusions over an area covered by randomly deployed network of wireless rotatable visual sensor networks is a part of the surveillance problem. The visual sensor nodes that are randomly deployed need to be efficiently managed to conserve energy while providing the optimum coverage for the area under surveillance. Taking rotation into consideration, we determine the nodes that need to be active while the rest sleep, so as to conserve the energy and increase the lifetime of the network. This is achieved by building coversets for each visual sensor node, and we propose to make it efficient by scheduling the nodes so as to provide the optimum coverage of the area. The nodes that are present in predicted range are alerted and are requested to rotate so as to capture the intrusion. The above proposed model is implemented in Omnet++ and Castalia.</p>		

TITLE	Smart App For Mobile Resource Management	
SL.NO	USN NO.	NAME
1	1MS14IS420	Sushmitha H M
2	1MS14IS418	Sunita T
3	1MS14IS416	Shwetha M K
MENTOR NAME	Internal Mentor : Naresh E	
ABSTRACT		
<p>The Project is based on creating a mobile application for all types of smart phones. In this application, when the mobile is in idle state all the process will be suspended temporally, only the calling feature of the phone will be enabled.</p> <p>Once when the phone gets out from idle state all the background process that were suspended will be resumed. This helps in better battery backup.</p> <p>Background activities on mobile devices can cause significant battery drain with little visibility or recourse to the user. They can range from useful but sometimes overly aggressive tasks, such as polling for messages or updates from sensors and online services, to outright bugs that cause resources to be held unnecessarily. In this paper we instrument the Android OS to characterize background activities that prevent the device from sleeping. An OS mechanism that interposes on events and signals that cause task wakeups, and allows for their detailed monitoring, filtering, and rate-limiting. We demonstrate how Tamer can help reduce battery drain in scenarios involving popular Android apps with background tasks. While maintaining most of the apps' functionality.</p>		

TITLE	Computational Knowledge Engine Using Wolfram Language	
SL.NO	USN NO.	NAME
1	1MS13IS037	Harshitha V
2	1MS13IS062	Neha M
3	1MS13IS063	Nidhi Shetty
MENTOR NAME	Internal Mentor : Mr. Shashidhara H S	
ABSTRACT		

Computational knowledge engine is a platform where the user can enter queries and get precise and accurate solutions. Unlike the conventional search engine which provides links using text matching algorithms, computational knowledge engine gives the solution through mathematical computations. Our project is to build a computational knowledge engine which will be an online service that answers factual queries directly by computing the answer from externally sourced data. In order to build this computational engine we make use of the Wolfram language and the concepts of data mining. Wolfram language is a general multiple paradigm programming language developed by Wolfram Research. Wolfram Mathematica is a mathematical symbolic computation program, sometimes termed as computer algebra system or program, used in many scientific, engineering, mathematical, and computing fields. Wolfram Notebooks are structured interactive documents. The Notebook front end includes many menus and graphical tools for creating and reading notebook documents and for sending and receiving material from the Wolfram Language kernel. Thus, using Mathematica and Notebook we build a computational engine.

TITLE	Level Tracking Using Rfid	
SL.NO	USN NO.	NAME
1	1MS13IS001	Aamina Thasneema M.I
2	1MS13IS066	Nikitha K .N
3	1MS13IS074	Pooja B
MENTOR NAME	Internal Mentor : Mohan Kumar S	
ABSTRACT		

Radio Frequency Identification (RFID) system is used in a wide range of areas such as access management, tracking of goods, tracking of persons and animals, toll collection , contactless payment etc. Our project is primarily based on RFID system's most common usage ie identification of people or objects using radio waves. The goal is to be able to track an object or a person and get the precise location and be able to retrieve the past tracked data. This can be done using RFID tags, attached to the object and RFID reader that reads the tag and sends the encoded data. The data is decoded and the location displayed. As a case example, our project is used to track professors within MSRIT campus and give their location as in which floor or which room the faculty is present. This is useful for the students who wish to meet a faculty member but do not know their location and can also be used by the college for monitoring purpose.

TITLE	Enhanced Predictive Analytics Model for Hotel Reviews	
SL.NO	USN NO.	NAME
1	1MS14IS415	Shwetha M J
2	1MS14IS419	Suresha H N
3	1MS14IS421	Vidhyasagar K G
3	1MS14IS422	Yogeesh B R
MENTOR NAME	Internal Mentor : Sandeep B L	

ABSTRACT

The hotel ranking did not have a significant impact in the overall transaction. A hotel ranking is its relative position when compare to competitors in their local area. Since a lower star hotel generates typically commands a more inexpensive hotel rate. With the profusion of social media, users increasingly browse through hotels reviews posted in websites. The classified and summarized hotel review information helps web users to understand review contents easily in a short time. Mining for Hotel Review system that detects hidden sentiments in feedback of the customer and rates the feedback accordingly. The system uses mining methodology in order to achieve desired functionality. The System takes review of various users, based on the opinion, system will specify whether the posted hotel is good, bad, or worst. Online reviews can increase the visibility of a hotel.

TITLE	Prevention of road accidents by analyzing their causes using data mining techniques	
SL.NO	USN NO.	NAME
1	1MS13IS117	Swetha Pai
2	1MS13IS081	Rakshaa V
3	1MS13IS105	Shruti Mouar
MENTOR NAME	Internal Mentor : Mrs Lincy Meera Mathews	

ABSTRACT

Nearly 1.3 million people die in road crashes each year, on average 3,287 deaths a day. An additional 20-50 million are injured or disabled. More than half of all road traffic deaths occur among young adults ages 15-44. Over 90% of all road fatalities occur in low and middle-income countries, which have less than half of the world's vehicles. Unless action is taken, road traffic injuries are predicted to become the fifth leading cause of death by 2030. Computer science knowledge can be applied to identify patterns of accidents. We intend to use existing data sets to extrapolate the major causes of accidents and accident patterns.

Causes of road accidents such as road features, lighting, drink and drive, weather conditions, junction types etc can be analyzed using data mining techniques. Various data mining techniques such as association rule mining, classification and clustering are widely used for the analysis of road accidents. In this project, we are using a relatively new technique called data gravitation clustering for analyzing accident data to provide insight on causes of accidents.

TITLE	Unmanned Ground Vehicle With Obstacle Avoidance	
SL.NO	USN NO.	NAME
1	1MS13IS054	Manisha J Patil
2	1MS13IS115	Supreeth A S
3	1MS14IS417	Suman Raj K
MENTOR NAME	Internal Mentor : Koushik S	
ABSTRACT		
In this project we propose Unmanned Ground Vehicle, a project which is used to monitor places which cannot be monitored by humans themselves. Unmanned ground vehicle is a smart autonomous vehicle that mainly capable to do tasks without the need of human operator. They find application mostly in the field of military to detect bombs, border patrol etc. We propose to develop a system which can avoid obstacles on its own and send us the details through a combination of various sensors. The user can manually control the UGV to find the object as well and tune the system to give the live video feed of the environment.		

TITLE	Automated Test Case Generation for Java Programs	
SL.NO	USN NO.	NAME
1	1MS13IS114	Suneel N Pramodh
2	1MS13IS113	Sumanth P
3	1MS13IS124	Vijaykumar M
MENTOR NAME	Internal Mentor : Naresh E	
ABSTRACT		
<p>The proposed project introduces a software that is designed to generate possible test cases for all input variables in Java programs and find the feasibility of the particular Java program by running the program against the test cases automatically. The project takes into account software testing techniques like Equivalence class partitioning and Boundary value analysis to verify the Java programs. This project intends to help select most efficient and relevant program that is in line with the requirements of a client/user.</p>		

TITLE	Smart GPS enabled Helmet for Medicare	
SL.NO	USN NO.	NAME
1	1MS13IS020	Arpitha N
2	1MS13IS068	Nitya Mohta
3	1MS13IS089	Saket Jain
3	1MS13IS134	Mili Rishishwar
MENTOR NAME	Internal Mentor : Prof. Prashanth Kambli	

ABSTRACT

The project aims at providing aid to the patient during the time of emergency as fast as possible. It may be accident or medical emergency. Many times we have seen accident on roads and highways and people don't turn up easily to help victims of the accidents and even if after some time police or some responsible citizens call ambulance service it takes significant time to reach to the spot of accident. Not only in this case but in case of medical emergency like heart attack, paralyses attack etc on road or highway we face problem to get ambulance in time. Some vehicle owner keeps a list of ambulances of various hospitals but again one cannot be sure which hospital is nearest and call that number. In our project we provide a solution to this problem with the help of GPS technology to get the location and GSM technology to send alert regarding accident or medical emergency to the hospital, we have added one more smart feature in the system it first find out nearest hospital and send sms to that hospital for ambulance..

TITLE			Predicting Instructor Performance Using Data Mining In Higher Education
SL.NO	USN NO.	NAME	
1	1MS13IS083	Ravi Ranjan	
2	1MS13IS015	Ankit Anand	
3	1MS13IS024	Avigit Mandal	
MENTOR NAME		Internal Mentor : Rajeshwari S B	

ABSTRACT

Data mining applications are becoming a more common tool in understanding and solving educational and administrative problems in higher education. In general, research in educational mining focuses on modeling student's performance instead of instructors' performance. One of the common tools to evaluate instructors' performance is the course evaluation questionnaire to evaluate based on students' perception. In this paper, decision tree algorithms are used to build classifier models. Their performances are compared over a data set composed of responses of students to a real course evaluation questionnaire using accuracy, precision, recall, and specificity performance metrics. Although all the classifier models show comparably high classification performances, C4.5 and ID3 classifier are the better among all with respect to accuracy, precision, and specificity. In addition, an analysis of the variable importance for each classifier model is done. Accordingly, it is shown that many of the questions in the course evaluation questionnaire appear to be irrelevant.

TITLE			Cryptographic Interweaving of messages
SL.NO	USN NO.	NAME	
1	1MS13IS060	Namita Mahesh Bellad	
2	1MS13IS061	Namrata Singh	
3	1MS13IS077	Pushpa Baral	
4	1MS13IS102	Shradha Kanodia	
MENTOR NAME		Internal Mentor : Mr. Jagadeesh Sai. D	

ABSTRACT

Information and communication technology industry has evolved greatly over the past few decades leading to vast information exchange via internet like message sharing, electronic transaction, etc. Securing the transmission of the information has become the primary concern today. Research in the area of cryptography has been a topic of interest since the ancient times. Siribhoovalaya, a unique work by Muni Kumudendu is a masterpiece of cryptography. The algorithm proposed is inspired by his work. It uses a single matrix for sending multiple messages using multiple keys. The algorithm involves generation of three keys. The Session key, which is a matrix established at the beginning of the session, the message key generated for each message. The third is the subkey which is a submatrix generated from session key based on the message key. Encryption and decryption involves different types of traversal in subkey making the mapping of the plaintext and cipher text difficult for cryptanalysis.

TITLE	SCRP: Stable CDS based Routing Protocol for vehicular urban Networks	
SL.NO	USN NO.	NAME
1	1MS14IS401	Chandana M
2	1MS14IS402	Gagana A
3	1MS14IS406	Meti Mangala
4	1MS14IS410	Prajwal K M
MENTOR NAME	Internal Mentor : Prathima M N	
ABSTRACT		

As there are number of issues in selecting routing paths, here we address the issue with minimum end-to-end delay (E2ED) for non safety applications in urban vehicular ad hoc networks (VANETs). There are several existing schemes which aim at reducing E2ED using greedy-based techniques such as shortest path, connectivity, or number of hops. This make them liable to the local maximum problem and to data congestion, leading to higher E2ED. So in order to overcome this problem, we come across a proposed SCRP approach, which is a distributed routing protocol that computes E2ED for the entire routing path before sending data messages. As a solution and to do so, SCRP helps in building stable backbones on road segments and connects them at intersections via bridge nodes. Based on the connectivity and collected information these nodes provide weights to road segments. Later, the routes which has lowest weights are aggregated and selected to forward the data packets. Thus, result of this simulation shows that SCRP performs some of the well-known protocols .

TITLE	INVESTIGATION OF VARIOUS IMAGE FUSION TECHNIQUES AND IMPLEMENTING THE PROMISING TECHNIQUE FOR THE IMPROVED	
SL.NO	USN NO.	NAME
1	1MS13IS007	Akhil Prasad
2	1MS13IS028	Bhargav T R
3	1MS13IS139	Radhika J Padia
MENTOR NAME	Internal Mentor : Prof. Rajaram M Gowda	

ABSTRACT

Diagnostic imaging is an invaluable tool in medicine. Magnetic resonance imaging (MRI), computed tomography (CT), digital mammography, and other imaging modalities provide an effective means for noninvasively mapping the anatomy of a subject. These technologies have greatly increased knowledge of normal and diseased anatomy for medical research and are critical components in diagnosis and treatment planning. It is proposed to combine suitable techniques of image fusion and try to achieve an efficient and quick method to detect anomalies and help doctors make a decision in terms of detection of presence of cancer. In image fusion technique two images are provided which are fused together to produce a better informative image.

TITLE			To Design and Develop Predictive Model For Identifying Essential Protein
SL.NO	USN NO.	NAME	
1	1MS13IS021	Ashish Arya	
2	1MS13IS022	Ashutos Arun	
3	1MS13IS032	Gogineni Sai Spandan	
MENTOR NAME		Internal Mentor : S. R. Mani Sekhar	

ABSTRACT

Essential proteins are composed of a set of minimal genome which support the cell survival with basic requirements. They are the amino acids which is required for existence of an organism but cannot be synthesized by the organism so it is taken by diet. The identification of essential proteins is important for grasping of the cellular life. If an essential protein is removed then it causes the cell to lose functionality or life as the usefulness of essential proteins can't be replaced by other proteins.

There have been done lots of work done to identify essential proteins. Biological, Topological and several other features are related to the essentiality of proteins. Based on these factors there have been developed various computational methods for identifying the essential proteins but the majority of prediction methods infer the possibility of proteins to be essential by using the network topology, these methods are imperfect to the wholeness of available protein-protein interaction (PPI) data and depend on the network accuracy. These tasks are very time consuming and intensive in nature.

Our work is based on machine learning based methods which addresses this problem by using SVM and Chi-Square Test which counters the above disadvantages. SVM is used for Classification of essential protein whereas Chi-Square Test is used for classification of training dataset.

TITLE			GREEN HOUSE CONTROL AND MONITORING SYSTEM USING SMART PHONE
SL.NO	USN NO.	NAME	
1	1MS12IS061	Mohammed Sufiyan Saqib	
2	1MS12IS047	Kushal S P	
MENTOR NAME		Internal Mentor : Prof. Rajaram M Gowda	

ABSTRACT

In agricultural country like India, greenhouses form an important aspect of agricultural and horticulture sectors. In greenhouses, plants are grown under favorable climatic conditions for its production and growth. Thus monitoring and control of greenhouse environment is necessary for production and management of greenhouses.

This project is designed to monitor and control the indoor humidity and weather conditions affecting the plants using embedded system and Android mobile phone. The android phone is connected to a central server which then connects to microcontroller and humidity sensor via serial communication. Thus the sensor records and manages the required weather conditions proved to be appropriate for plant growth.

TITLE	Vehicle Optimization Algorithm Design to Reduce Idle Time At Traffic Signal	
SL.NO	USN NO.	NAME
1	1MS13IS018	Anusha S Belagali
2	1MS13IS027	Sushmitha B
3	1MS13IS031	Disha V
MENTOR NAME	Internal Mentor : Mohan Kumar S	
ABSTRACT		

Nowadays, the number of vehicles on the road and the need of transporting people grow fast. Nevertheless, the road network system in cities is not sufficient to cope with the current demands due to the size of roads available. As a consequence, the modern society is facing more traffic jams, higher fuel bills and high levels of CO2 emissions. Vehicular communication networks are increasingly being considered as a means to conserve fuel and reduce emissions within transportation systems. This project focuses on using traffic light signals to communicate with approaching vehicles. The communication can be traffic-light- signal-to- vehicle (TLS2V) .Based on the information sent, the vehicle receiving the message adapts its speed to a recommended speed (SR), which helps the vehicle reduce fuel consumption and emissions. The objective function is to minimize fuel consumption by and emissions from vehicles. The speed that can achieve this goal is the optimum SR. We implement a dedicated hardware and software platform to experiment and test above idea.

TITLE	E-BUS PASS	
SL.NO	USN NO.	NAME
1	1MS13IS141	Deeksha Poornashri
2	1MS13IS142	Greeshma Rj
3	1MS14IS412	Shakunthala Bv
4	1MS14IS413	Shanta
MENTOR NAME	Internal Mentor : Deepthi K	
ABSTRACT		

This project aims at developing an app to facilitate students to obtain their daily bus passes through online. Bus passes help students in traveling from their homes to their respective destination. Bus passes play a pivotal role in lessening the travel expenses. Obtaining bus passes in person from the BMTC department has become a tiresome task for students. Students are supposed to stand in queue for hours to obtain their bus passes. Our objective is to help students in obtaining bus pass through an app, relieving them from long standing queues. A student can sit at home and obtain their bus passes within a span of one or two days.

TITLE	Hand Written Character Recognition	
SL.NO	USN NO.	NAME
1	1MS13IS003	Aditya Sinha
2	1MS13IS004	Aditya Walvekar
3	1MS13IS005	Aishwarya Sharma
4	1MS13IS017	Anuroop Reddy
MENTOR NAME	Internal Mentor : Lincy Meera Mathews	

ABSTRACT

A human-computer interaction system for handwritten character recognition has attracted increasing attention from computer science, linguistics and related disciplines. Character recognition are important in facilitating human-computer communication and interactions. Also they are used as an important tool in identifying the character written by different user. It can be useful for improving interaction between human and machine. The project mainly aims to come up with the solution to recognize the handwritten characters problem by dividing it into sub-problems of classification.

The proposed method has four stages: (a) Taking the input from the user, (b) Storing the input in database and (c) feature extraction d) Hand digit written recognition. The system involves pre-processing image data features and then using K-Nearest Neighbor (KNN) for classification and recognition of input. In this project we will focus on trying to achieve high recognition rates across multiple data base which has not yet been achieved in the previous works done on this model so far.

TITLE	H2Hadoop: Improving Hadoop Performance using the Metadata of Related Jobs	
SL.NO	USN NO.	NAME
1	1MS12IS091	Shivam Gupta
2	1MS12IS048	Lakshmi H.N
3	1MS12IS046	Kuldeep Duboliya
4	1MS11IS069	Nivedita M.
MENTOR NAME	Internal Mentor : Sandeep B.L.	

ABSTRACT

Cloud Computing leverages Hadoop framework for processing BigData in parallel. Hadoop has certain limitations that could be exploited to execute the job efficiently. These limitations are mostly because of data locality in the cluster, jobs and tasks scheduling, and resource allocations in Hadoop. Efficient resource allocation remains a challenge in Cloud Computing MapReduce platforms. We propose H2Hadoop, which is an enhanced Hadoop architecture that reduces the computation cost associated with BigData analysis. The proposed architecture also addresses the issue of resource allocation in native Hadoop. H2Hadoop provides a better solution for “text data”, such as finding DNA sequence and the motif of a DNA sequence. Also, H2Hadoop provides an efficient Data Mining approach for Cloud Computing environments. H2Hadoop architecture leverages on Name Node’s ability to assign jobs to the Task Trackers (Data Nodes) within the cluster. By adding control features to the Name Node, H2Hadoop can intelligently direct and assign tasks to the Data Nodes that contain the required data without sending the job to the whole cluster. Comparing with native Hadoop, H2Hadoop reduces CPU time, number of read operations, and another Hadoop factors.

TITLE	H2Hadoop: Improving Hadoop Performance using the Metadata of Related Jobs	
SL.NO	USN NO.	NAME
1	1MS13ISO14	Anit Nilay
2	1MS13ISO10	Aman Agrawal
3	1MS13ISO41	Jason B Lakiang
4	1MS13ISO47	Krati Mishra
MENTOR NAME	Internal Mentor : Lincy M Mathew	
ABSTRACT		
Virtual Reality project for providing Virtual Classes. Virtual Classes will be based on a real time environment which will provide students with an interesting way of understanding concepts. This project will allow students to attend Virtual Classes using VR. The project is focused on increasing the convenience of students to take the classes in real world and creating an interesting method for education.		

TITLE	A Framework for Image Annotation using segmentation based on the context of SVM and ORB.	
SL.NO	USN NO.	NAME
1	1MS13ISO26	Avinash R
2	1MS14IS403	Gurushankar SG
3	1MS12ISO21	Apoorva G
MENTOR NAME	Internal Mentor : Prashanth Kambli	
ABSTRACT		
<p>In the recent years Image Annotation has picked up significance in the process of searching, retrieving and applying tags for image. For accomplishing the most advantage, the human’s observation and description can rewarded from various frameworks. The idea generated is to prearrange the raw image as input applied to a proposed model that can help in segmentation and recognition of each object in the image that can be further used for placing of appropriate tags. In this context, a suitable framework will be designed and developed that learns vigorous scene models using noisy tags and pictures from several partially annotated datasets.</p> <p>With reference to the above mentioned details, the model is proposed that will clearly demonstrate the presence of rightness within the structure via annotation using labels (tags) and portioning (segment) pictures from different classes portraying to the sport scenes. The proposed work accomplishes two major tasks: Initially, to explain with labels (tags) and later to portioning (segment) the picture with comparable area, such that the expectation of the overall model will altogether exceeds in cutting edge calculations.</p>		

TITLE	An alternative approach to managing traffic in Urban settlements	
SL.NO	USN NO.	NAME
1	1MS13IS051	Madhukar D R
2	1MS13IS057	Murugappan M
3	1MS13IS080	Rajesh M
MENTOR NAME	Internal Mentor : Mrs. Savita K Shetty	
ABSTRACT		
<p>A huge percentage of road traffic in Indian cities consists of unanticipated and irregular spikes. Collecting and analyzing the traffic patterns in real time to give immediate solutions gives a boost in terms of shorter travel time in the short term and fuel savings. Our primary objective is to have an adaptive traffic system that uses data mining to predict the traffic.</p> <p>To achieve this, we install cameras at several intersections at an ideal height suitable for image processing and the processed information acts as our data set. Over a period of time, the behaviors of several intersections in each direction is recorded and studied. After appropriate preprocessing techniques are applied, we group the signals into three clusters: short-wait, medium-wait and long-wait. When a user enters a destination, we suggest a route with more short waits and medium waits than long waits to ensure the the user reaches the destination as fast as possible. We intend to compare the results of our implementation versus dynamic traffic prediction and make meaningful inferences out of it.</p>		

TITLE	Online Legal Solutions For Bank Related Cases	
SL.NO	USN NO.	NAME
1	1MS13IS059	Nagarjuna N M
2	1MS13IS095	Saurabh
3	1MS13IS058	Nagaraj Desai
4	1MS13IS109	Subramanya M N
MENTOR NAME	Internal Mentor : Prof.Dr.Lingaraju.G.M	
ABSTRACT		
<p>This project deals with the cases related to bank, as we know there are many problems faced by customers pertaining to bank and end up going to court to get justice for that problem. There are many cases that can solved off court but due to the communication problem they end up going to court. Our aim is to provide online legal solutions (communication medium) for such cases that can be settled off-court and also to reduce the number of cases filed against the bank and due to which customer's justice will be dragged.</p>		

TITLE	Discovery of Ranking of Fraud for Mobile App	
SL.NO	USN NO.	NAME
1	1MS12IS416	Pradeep N
2	1ms145is404	Kiran Kumar N
MENTOR NAME	Internal Mentor : Sunitha Rs	
ABSTRACT		
<p>Nowadays everyone is using smart phone. There is need of various applications to be installed on smart phone. To download application smart phone user has to visit Apps store such as Google Play Store, Apples store etc. When user visit play store then he or she is able to see the various applications list. This list is built on the basis of promotion or advertisement. User doesn't have knowledge about the application (i.e. which applications are useful or useless) So user looks at the list and downloads the applications mostly from front page of App Store. But sometimes it happens that the downloaded application won't work or not useful. That means it is fraud in mobile application list. To avoid this fraud, we are making application in which we are going to list the applications. To list the application first we are going to find the active period of the application named as leading session. We are also investing the three types of evidences: Ranking based evidence, Rating based evidence and Review based evidence. Using these three evidences finally we are calculating aggregation of these evidences. We evaluate our application with real world data collected form play store for long time period.</p>		

TITLE	POTHOLE DETECTION USING IMAGE PROCESSING	
SL.NO	USN NO.	NAME
1	1MS13ISO48	Kumar Rishav
2	1MS13ISO70	Parth Rastogi
3	1MS13ISO79	Rahul Chugh
4	1MS13ISO85	Rishabh G Sharma
MENTOR NAME	Internal Mentor : Mrs. Deepthi K.	
ABSTRACT		
<p>This project aims at proposing a versatile Pothole Detection System which assists the driver in avoiding potholes on the roads, by giving prior warnings. The basic idea of this system is to detect the pothole at a distance from which driver is driving the vehicle, to alert the driver if pothole is arriving in the way to reduce the speed of the vehicle or take another path. This project presents a detailed description of the system based on image processing developed to process and analyze the dataset captured using the camera mounted on the car that gives high efficiency and accuracy compared to the conventional methods of pothole detection.</p>		

TITLE	Robotics Engineering	
SL.NO	USN NO.	NAME
1	1MS14IS408	Naseema
2	1MS14IS409	Nithin J
3	1MS14IS414	Shreekanth B
MENTOR NAME	Internal Mentor : Mr. D Jagadeesh Sai	
ABSTRACT		
<p>In India, near about 70% people are dependent upon agriculture. So the agriculture system in India should be advanced to reduce the efforts of farmers. Various number of operations are performed in the agriculture field like seeding, weeding, waste planet cutting, plowing etc. Very basic and significant operation is seeding plowing, plant cutting. But the present methods of seeding, plowing and plant cutting are problematic. The equipments used for seed sowing are very difficult and inconvenient to handle. So there is a need to develop equipment which will reduce the efforts of farmers. This system introduces a control mechanism which aims to drop seeds at particular position with specified distance between two seeds and lines while sowing. The drawbacks of the existing system will be removed successfully in this automatic machine.</p>		

TITLE	Travel Assistant for Women Safety	
SL.NO	USN NO.	NAME
1	1MS13IS137	Aishwarya Laxmi
2	1MS14IS405	Mahima N S
3	1MS14IS407	Nagaraj Gumaste
MENTOR NAME	Internal Mentor : Mohan Kumar	
ABSTRACT		
<p>Security systems and various vehicle tracking devices are made every year, although India is developing and becoming world center of attraction for various business and investments, still there are some incidents which makes our women not safe in our country. Today women are working equally with men; it may be IT, BPO or other services. But during travelling still we have an untold fear in our minds. The atrocities against the women can be now brought to an end with the help of a device, we are developing a device which will allow women's to travel in Taxi, cabs or auto rickshaw without any fear and with elevated sense of safety and security. Virtual tracking is automatically enabled once passenger starts a journey and end of journey is executed with secured pin only.</p>		

DEPARTMENT OF **ELECTRONICS AND INSTRUMENTATION TECHNOLOGY**



Project
Abstracts

2015 - 2016

DEPARTMENT OF ELECTRONICS AND INSTRUMENTATION TECHNOLOGY

Department Information



Dr. (Mrs.) Premila Manohar,
Professor & Head

Department of Instrumentation Technology, established in the year 1992, has been accredited by NBA three times. The goals of the department have been to prepare the students Industry-Ready by aligning education to the current technology and the best practices in the area of Industrial Automation. The department has best laboratory facility, the PLC and SCADA lab is one of its kind in Karnataka with Allen Bradley PLC and RSLogix 5000 tool kit for software development along with Schneider SCADA gives best exposure to the students and prepare them for their placement in core automation industry. The department also has a MoU with Mitsubishi Electric India Private Ltd. They have established a Factory automation training facility with Q PLC training setup, FX PLC training setup, Mitsubishi FA training equipments. This facility gives Instrumentation students an exposure to Mitsubishi PLC and other automation products.

Vision

- To become world class center of excellence in the field of Instrumentation Technology for education and research

Mission

- To empower and imbibe students with technical knowledge and practical skills in the field of Instrumentation technology, enabling them to work as professionals in globally competitive environment and contribute to the society through research and higher studies.

TITLE	Bearing Condition Monitoring Using Vibration Signal Analysis	
SL.NO	USN NO.	NAME
1	1MS13IT001	A Prathibha
2	1MS13IT006	Akshatha S Bhandarkar
3	1MS13IT018	Chaitra P
4	1MS13IT022	H Gurudas Kamath
Internal Mentor :	G SHIVAPRAKASH	
External Mentor :	Suprita Mandlagiri, Engineer, Technical Service Section, Product Engineering Department. Toyota Kirloskar Auto Parts Pvt.Ltd.	

ABSTRACT

This project proposes the development of a graphical user interface for bearing defect detection by analyzing the vibration signals recorded using vibration pickups. Defects in general rolling element bearings can be generated by fatigue, wear, poor installation, improper lubrication and occasionally manufacturing faults in the bearing components. When the machines recently are getting more complicated, fault diagnosis techniques have become more and more significant. In order to keep the machine performing at its best, one of the principal tools for the diagnosis of rotating machinery problems is the vibration analysis, which can be used to extract the fault features and then identify the fault patterns. The vibration analysis can be performed by mounting an accelerometer at right angles to the Plummer. These signals are sent to a data acquisition unit. The measured vibration data is analyzed using spectrum analysis program and MATLAB software. The study of the spectrum is conducted and the faults are identified.

TITLE	Autonomous Robotic Farming With Plant Health Indication	
SL.NO	USN NO.	NAME
1	1MS13IT002	Abhishek Birkodi
2	1MS13IT023	Harish Kumar
3	1MS13IT028	Kiran Chavan
4	1MS13IT022	H Gurudas Kamath
Internal Mentor :	A AJAY OVHAL	

ABSTRACT

The main aim of our project is to reduce the losses and improve the productivity and the quality of agriculture. In this project we will be showing the demo of how robotics can be used in the field of agriculture to perform the basic of agriculture such as pesticide spraying and also indicating the health of a plant by using the technology of image processing such as k-means or histogram. In this project we are dealing with a specific plant and the image processing is performed on a captured image and compares it with the pre-stored value called threshold value which will have upper and lower range and information will be sent to the farmer mobile about the health and condition of the plant through the use of GSM network technology. Robot perform the task with the help of raspberry pi and Arduino.

TITLE	Room Automation and Monitoring for Physically Impaired	
SL.NO	USN NO.	NAME
1	1MS13IT005	Akhil Simha N
2	1MS13IT040	Pawan Kumar
3	1MS13IT051	Santosh S Manur
4	1MS13IT061	Vijeth S Shetty
Internal Mentor :	Dr. A. SARAVANAN	
ABSTRACT		
<p>In the present world, it is difficult to constantly monitor or stay available for the physically impaired who might need support or help. Hence this project aims to build a system that is capable of monitoring the patient as well as allow them to control certain room appliances or to call the caretaker. The physically impaired person uses hand gestures in order to call the caretaker or to control the room appliances. The patient is also monitored continuously for various vital signs such as heartbeat and body temperature. Any deviation from the vital sign will be notified to the caretaker. The project includes design and development of Gesture recognition system using Accelerometers and flex sensors for home automation, Vital Signs monitoring and wireless Data transmission for monitoring and notifying the care taker via a mobile application.</p>		

TITLE	Mechanized Remote Controlled Tank With Detachable Pod Bike	
SL.NO	USN NO.	NAME
1	1MS13IT007	Akshay A
2	1MS13IT011	Anarghya S R
3	1MS13IT013	AshwinIyer
4	1MS14IT403	Deeksha M
Internal Mentor :	K M VANITHA	
ABSTRACT		
<p>A tank is an armoured fighting vehicle designed for front-line combat with heavy firepower, strong armour, and tracks providing good battlefield manoeuvrability. This project employs the concept of detaching a two wheeled pod bike from a four wheeled tank. This concept is achieved with the help of electromagnetic locking mechanism. The motor and the electromagnetic lock is controlled by a microcontroller (Arduino Uno). Based on the received inputs, the microcontroller controls the motor. A 360-degree rotatable camera is fixed on the bike part. This camera gives a live feed which is fed to the LCD screen present on the controller. The LCD screen and the RF transmitter are fixed on the remote module. The remote operator constantly monitors and controls the motion of the bike or the car.</p>		

TITLE	A Real Time Posture and Environment Monitoring Camera Based System for Physical Rehabilitation	
SL.NO	USN NO.	NAME
1	1MS13IT008	Akshay. A. Halyal
2	1MS13IT027	Kavana. V
3	1MS13IT039	Niveditha. H. R
4	1MS13IT045	R. Gayathri
Internal Mentor :	K M VANITHA	

ABSTRACT

A person, suffering from tremor type movement disorder, will have exaggerated and highly complex motions when performing simple arm rotation tasks (for example, while trying to reach out for a bottle). Performing a detailed measurement of the entire dynamics during these task is crucial for a medical diagnosis. In this work, we focus on the development of a camera based system to measure the dynamics of motion of the arm, when a person is performing a specific task. The camera based system will be fused with an existing glove system - which is composed of inertial sensors measuring angular rotations (and rates). While the sensor glove will measure tremors (of the arm), the camera will track the motion of the limb - the fused data will provide an analysis of tremors during a specific postural task.

TITLE	SMART AID FOR THE AILING	
SL.NO	USN NO.	NAME
1	1MS13IT042	Priya.N
2	1MS13IT066	AvikaLohany
3	1MS13IT012	Anusha.K.Nair
4	1MS13IT050	Sanjana.M
Internal Mentor :	Dr. M. K. PUSHPA	

ABSTRACT

In the hustle and bustle of our day to day life, we are gravitated to pretermite the bedridden. These ailing persons need round the clock assistance from the care-takers and management of the physiological functions like defecation and urination is a difficult and sensitive issue. We propose an idea which consists of a cot with the excretory waste disposal mechanism that is electrically controlled by a switch. Once the urination or defecation is done, the patient presses another switch to close the hole. The disposal bag are placed in the containers of the conveyor. After this, the bag can be dropped into a bin. The conveyor starts moving such that the next bag is ready for disposal. Once the bags reach a limit, an alert message is sent to the care taker through Internet of Things. This cost effective and easy to handle system can be used in houses where complete assistance cannot be given to such persons.

TITLE	IOT Based Irrigation Automation System	
SL.NO	USN NO.	NAME
1	1MS13IT015	Basavaraj M
2	1MS14IT400	Akshai N
3	1MS14IT401	Allappa M P
4	1MS14IT407	Prakash K S
Internal Mentor :	G.SHIVAPRAKASH	
ABSTRACT		
<p>The system can be made fool proof by using sensors to determine the need for watering. Programmable Logic Controller (PLC) is best way to control the water management. The system controls irrigation need based on two inputs. One is from the moisture sensor and another is from the weather sites on the internet. Based on the input from moisture sensor, system decides to irrigate if the soil is dry. The fence can also be kept on all the time if needed. Need for fertilization is determined using sensor. The quantum and frequency of fertilization hence can be controlled using PLC. Usage of latest and state of the art technologies like IOT and PLC for irrigation control saves energy, water, and fertilizer. All these concerted efforts increase the yield and profitability of farming.</p>		

TITLE	Energy Management Of HVAC Systems In Medical Spaces	
SL.NO	USN NO.	NAME
1	1MS13IT017	Kunal C J
2	1MS13IT025	Kamran Sayeed
3	1MS13IT060	Vidyashankara V
Internal Mentor :	J V ALAMELU	
ABSTRACT		
<p>Today, Renewable Energy (RE) sources have become an important part of power generation. Among the available RE technologies, solar energy is very promising, as it is omnipresent, freely available, and environment friendly. There are, however, few drawbacks, the major one being their sporadic nature. The output is an economy level in which the system should be run for maximum efficiency. Based on predefined operating conditions for each economy level and the current room conditions, HVACs in hospitals are operated. Communication is achieved via ZigBee protocol. The data is sent to Ubidots – an IoT platform wherein it can be viewed, monitored in real-time and alerts can be sent to the maintainer in case of critical conditions. The proposed work is implemented for smart intelligent hospitals.</p>		

TITLE	Accident Detection and Prevention System	
SL.NO	USN NO.	NAME
1	1MS13IT019	Gabriel Mervyn Joshua
2	1MS13IT020	Gayathri Manoharan
3	1MS13IT033	Mukunda N
4	1MS13IT037	Niranjana Pramod
Internal Mentor :	Dr. M. K. PUSHPA	

ABSTRACT

The project will be divided into two major systems- accident detection system and accident prevention system. These systems are controlled by an Arduino microcontroller. The detection system consists of a vibration sensor which is capable of measuring the deceleration during a collision. It also consists of a GSM and GPS module. The GPS module on acquiring the signal from the sensor transmits the geographical coordinates via the GSM module to notify the medical support. The circuit will function such that this high beam intensity is reduced to prevent glare. The second subsystem is the drunken driving prevention system. An alcohol sensor will determine the blood alcohol content of the person driving. On account of high blood alcohol levels, the car ceases to start. The last subsystem is the obstacle sensing system which utilizes an IR sensor to detect any obstacles. The IR waves continuously measure the distance between the vehicle and obstacle as a function of time taken for the wave reflected from the obstacle to reach the sensor.

TITLE	Automated Object Retrieval Robot using DIP and IoT	
SL.NO	USN NO.	NAME
1	1MS13IT041	Pranav P M
2	1MS13IT031	Meghanaa Sreevatsa
3	1MS13IT024	Jiyon Jay Jacob
4	1MS13IT060	Yogesh S
Internal Mentor :	M D NANDEESH	

ABSTRACT

This project deals with recognizing the object and retrieval based on the barcode detection using image processing. This method could be used in industries and super markets in order to pick and place the object from godown to sales area. The image is captured using webcam and barcode is being detected using image processing methods where the barcode alone is derived from the entire image and later the value is being obtained in Raspberry pi. In order to determine the value zbar is being used. Raspberry pi gives signal to Arduino to place the objects in its predefined location based on barcode value obtained.

TITLE	Automated Snack Machine Using PLC	
SL.NO	USN NO.	NAME
1	1MS13IT026	Karthik S
2	1MS13IT059	Surendran A
3	1MS14IT408	Rameshvardhan B.G
4	1MS14IT410	Vanitha G.V
Internal Mentor :	VIBHA.B.RAJ	
ABSTRACT		
<p>In the world towards globalization, people need equipment that can be used to help them do their job easy, fast and effectively. As a challenge, a machine that is able to produce a processed food is designed as a tool that can make people's job easy and also produce the food with high quality. This machine is a combination of snack food extractor and frying pan concept which uses an automation system. The process system is connected to the PLC and is monitored remotely through a PC. Quality, hygiene and taste of the finished product is maintained and variety of snacks products can be prepared with small changes in the methodology. This machine increases the production rate and minimizes the man power.</p>		

TITLE	Underwater Data Transmission Using Visible Light Communication	
SL.NO	USN NO.	NAME
1	1MS13IT038	Nitesh Sinha
2	1MS13IT034	Naman Gautam
3	1MS13IT062	Vinish Kumar
4	1MS14IT402	Apurva R
Internal Mentor :	VIBHA.B.RAJ	
ABSTRACT		
<p>Communication has become an important part of our life. With the advances in technologies, communication systems have evolved from wired devices to wireless devices. Now, the ability to transmit data through light without the use of any fibers is one of the fields of optical communication system which is under research and has a lot of scope. This process of transmission of data through light is called visible light communication (VLC). In underwater communication that uses radio frequency or ultrasonic waves, limitations exists such as reflections from the water surface or sea floor. This incoming light signal is received at receiver side by a photo detector and the received signal is demodulated to get back the transmitted data which is then displayed at receiver side. With our prototype we were able to efficiently transmit text data and image and receive the same at the receiving end.</p>		

TITLE	Bus Arrival Prediction Technology(Using Radio Frequency)	
SL.NO	USN NO.	NAME
1	1MS13IT047	Rakesh J. S
2	1MS13IT057	Srujan. B
3	1MS14IT405	Likith. B
4	1MS14IT406	MarutiNaik
Internal Mentor :	M D NANDEESH	

ABSTRACT

Bus systems in India pose a plenty of problems. Passengers don't have any idea how much they have to wait, Management don't know where their buses are or is there any technical failure or which routes requires more or is there any routes where we can remove buses..Apart from this situation so many more situation are there where we want bus arrival time and here our project can help transport system and make is better. There is a need of system which can convert a sluggish bus in Rapid bus transit system which as estimated arrival times for passengers and a system which can update arrival time affected due to bus failures, route diversion, traffic jams etc. In this we are trying to develop and design an intelligent system which can help people and management both in various ways, which can suggest management some productive actions to improve the service. Using wireless communication network, we can design an intelligent public transport system which can satisfy all above requirements.

TITLE	Virtual Eye: Reading Aid For The Blind	
SL.NO	USN NO.	NAME
1	1MS13IT048	Roshini K
2	1MS13IT053	Shruthi H P
3	1MS13IT065	Achinthya H
Internal Mentor :	H S NIRANJANA MURTHY	

ABSTRACT

"Virtual Eye: Reading Aid for the Blind" is a project which is aimed at helping visually impaired and blind people of the world. There is a large amount of printed information available in the world which is inaccessible to a big part of the society because of their impairment, and we aim to mitigate this as best as possible through our project. The major concepts used in the project are Optical Character Recognition (OCR) and Text-to-Speech (TTS) Conversion. The text to be read by the visually impaired person is captured using a camera, and digital image processing techniques like segmentation, enhancement techniques etc. are applied in the pre-processing stage. This is subsequently converted to machine encoded text using OCR. The machine encoded text is then fed as an input to the TTS synthesizer which outputs an audio. The entire system will be supported by a Raspberry Pi which will handle the OCR as well as synthesize the speech.

TITLE	An ECG Monitoring And Alarming System Based On Android Smart-phone	
SL.NO	USN NO.	NAME
1	1MS12IT031	Nikitha.G
2	1MS13IT049	Sanjana.C
3	1MS14IT404	Hemashri S Nayak
4	1MS14IT409	Shanthala.N
Internal Mentor :	ELAVAAR KUZHALI S	
ABSTRACT		
<p>In this polluted environment health problem are unpredictable, it is necessary to keep an eye on our health. When it comes to the Cardiac problems it is very important for the patient to be monitored. It is not always possible to monitor him/her with at most attention .We need a better system that is always with the patient that monitors ones ECG signal clearly and make a record of abnormalities. Once the data's are received, alarm server pushes the message to doctor's phone, so the doctors could see the ECG images and alarm details on their mobile phone. By using this application, patients with heart diseases can interact and consult with a cardiologist anytime and anywhere. In this system along with the ECG monitoring, we also monitor body temperature, heart rate and air flow rate of the patient.</p>		

TITLE	Fully Automated Solar Grass Cutter	
SL.NO	USN NO.	NAME
1	1MS11IT007	Amit Kumar Raushan
2	1MS11IT046	Sakshi
Internal Mentor :	Dr. A. SARVANAN	
ABSTRACT		
<p>The fully automated solar grass cutter is a fully automated grass cutting robotic vehicle powered by solar energy that also avoids obstacles and is capable of grass cutting without the need of any human interaction. The system uses 12V batteries to power the vehicle movement, motors as well as the grass cutter motor. We also use a solar panel to charge the battery so that there is no need of charging it externally. The grass cutter and vehicle motors are interfaced to an Arduino nano (atmega 328p) microcontroller that controls the working of all the motors. It is also interfaced to an ultrasonic sensor for object detection and grass sensor(Flex Sensor) to sense the grass. The microcontroller moves the vehicle motors in forward direction in case no obstacle is detected. On obstacle detection the ultrasonic sensor monitors it and the microcontroller thus stops the grass cutter motor to avoid any damage to the object/human/animal whatever it is. Microcontroller then turns the robotic as long as it gets clear of the object and then moves the grass cutter in forward direction again. We have also used a Bluetooth module HC-05 to control the robotic vehicle manually.</p>		

DEPARTMENT OF **MECHANICAL ENGINEERING**

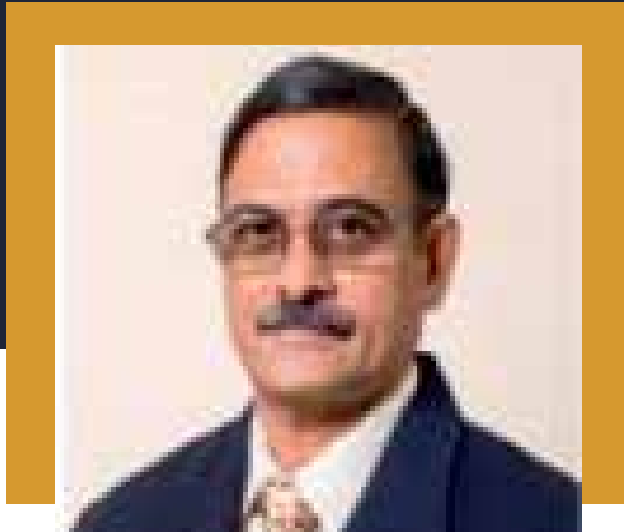


Project
Abstracts

2016 - 2017

DEPARTMENT OF MECHANICAL ENGINEERING

Department Information



Dr. D Ramesh Rao,
Professor & Head

The Department of Mechanical Engineering started in the year 1962 with an intake of 40 students. The department has grown strong over the last 52 years and today has an intake of 180 students and 48 teaching staff. All the faculty members are well qualified and possess post graduate degree with 20 doctorates.

The department offers four year degree course and also offers two Master's Degree in Manufacturing Science & Engineering and Computer Integrated Manufacturing, with an intake of 18 each. The Department also offers research program which includes MSc Engineering by research and PhD degree from Visvesvaraya Technological University and at present 24 researchers are pursuing PhD. The department received software grants from Autodesk a leading Computer Aided Design multinational company and has been using them in the curriculum. The faculty members have taken up number of research projects funded by external agencies like DRDO, DST, AICTE and Visvesvaraya Technological University and received funding to the tune of 1 Crore. In view of the golden jubilee celebrations, the department has conducted a national level project exhibition and an International Conference on "Challenges and Opportunities in Mechanical Engineering, Industrial Engineering and Management Studies" – ICCOMIM. Faculty members from the department have published books on different domains of Mechanical Engineering and are recommended by Visvesvaraya Technological University Board of Studies as reference text books.

The students from the department participate both at the national and international competition throughout the year, in the year 2013 – AeRobusta – 4 member student team from the department participated in SAE Aero Design competition and stood 18th position out of 64 teams from all over the world. The team AeRobusta stood FIRST AMONG THE ASIAN COUNTRIES.

Another team from the department also participated in the "Unmanned Air Vehicle System" conducted by U.S. Navy at Maryland, USA. The team secured 5th Place in the technical session out of 36 participating teams from all over the world.

TITLE	P-1: BLE BASED E SKATE	
SL.NO	USN NO.	NAME
1	1MS09ME172	Snehal Anand
2	1MS10ME129	Pramod Roshan
3	1MS13ME205	Vybhav P
4	1MS09ME045	Dhanush C.K
Mentor Name	Internal Mentor : Dr. Sunith Babu L	
ABSTRACT		
<p>This paper presents the design and methodology utilized in the creation of an electric skate board. The main objective of the E-Skate is to transport a person from one point to another using a DC motor, powered by a rechargeable battery, which will be controlled wirelessly using Zigbee technology. The user uses a hand on controller while riding the E-Skate. The E-skate uses a microcontroller with analog to digital conversion, motor controller and GPS module. It provides fast transportation and easy portability. In addition it shows the actual location of speed in a LCD display mounted on the remote controller</p>		

TITLE	P-2: Portable Mini CNC Machine Plotter using Arduino UNO Control System	
SL.NO	USN NO.	NAME
1	IMS14ME412	Kumar Govind R
2	IMS14ME406	Chandrasekhar M
3	IMS14ME408	Deepak Kumar N T
4	IMS14ME411	Jai Simha Varma J
Mentor Name	Internal Mentor : Mr NAVEEN KUMAR B K	
ABSTRACT		
<p>The rapid growth of technology resulting in use of more number of CNC machines. Our basic idea is to build a portable mini CNC machine Pen plotter using microcontroller Arduino UNO board controlling system that can be used to print and visualize the given geometry of the part using the pen plotter (using x & y co-ordinates).The portable plotter can be used in various application like illustration, representation of 2D drawing, portrayal, artist’s impression, scaling, design plan etc.Hence by using this portable pen plotter we will able to generate complicated images very easily and quickly by developing an image in a screen and converting it to an G-code where the machine can understand and perform the desired computed task since the computer is connected to the plotter it makes the system user friendly and allows the operator to edit and draw different non uniform line diagrams.</p>		

TITLE	P-3: Stress, Fatigue and Crack Propagation Analysis of Jack Damper assembly of Arrestor Hook System in a Naval Aircraft	
SL.NO	USN NO.	NAME
1	1MS13ME030	Animan Thakur
2	1MS13ME048	Clive Rahul Misquith
3	1MS13ME210	Jessica Jacob
4	1MS13ME208	Shivani Biradar
Mentor Name	External Mentor : P M Swami, Aircraft Research and Design Centre, HAL, Bangalore. Internal Mentor: Mr Sridhar B S,	
ABSTRACT		
<p>An aircraft primarily has five structural elements- fuselage, wing, undercarriage, horizontal tail and vertical tail. Naval aircrafts are designed to land both on the field and the deck of the ship. Arrestor hook system(AHS) is a special feature of naval aircrafts which is used to achieve rapid deceleration of the aircraft during landing on aircraft carriers.This project work on “stress, fatigue and Crack Propagation analysis of Jack Damper assembly of arrestor hook system of naval aircraft” will be undertaken at Aircraft Research and Design Centre, Hindustan Aeronautics Limited, Bangalore.</p>		

TITLE	P-4: Design and Analysis of Flapping Wing of a MAV using IPMC	
SL.NO	USN NO.	NAME
1	1MS13ME003	Abhiram Bharadwaj
2	1MS13ME006	Abishek Bhat B. R
3	1MS13ME053	Gaurav A. A
4	1MS13ME067	K Leela Sai Prabhat Reddy
Mentor Name	External Mentor : P Dr. Dineshkumar Harursampath Internal Mentor: Dr. C. M Ramesha	
ABSTRACT		
<p>A Micro Aerial Vehicle (MAV) is a class of Unmanned Air Vehicles (UAVs). According to Defence Advanced Research Project Agency (DARPA), an MAV is defined by size as any aerial vehicle that measures less than 6 inch (15 cm) and 4-ounce weight. Ionic polymer–metal composites (IPMCs) are synthetic composite nanomaterials, typically consisting of a polyelectrolyte membrane (usually Nafion or Flemion) plated on both faces by a noble metal such as Platinum or Gold, that display artificial muscle behavior under an applied voltage or electric field. Strips of these composites can undergo large bending and flapping displacement if an electric field is imposed across their thickness.Such flapping-wing MAVs can be used to understand insect flight and to provide practical uses, such as flying through cracks in concrete to search for earthquake victims or exploring radioactivity-contaminated buildings, reconnaissance, surveillance, defence applications, weather forecast, traffic monitoring, biochemical sensing, inspection of pipes etc.</p>		

TITLE	P-5: “AUTOMATIC SOLID WASTE SEGREGATION SYSTEM”	
SL.NO	USN NO.	NAME
1	1MS14ME401	Abhishek Sungar B
2	1MS14ME416	Manju Madivalara
3	1MS14ME426	Rangappa S Patil
4	1MS14ME428	Sangamesh Pareet
Mentor Name	Internal Mentor: Mr.GURURAJ LALAGI	
ABSTRACT		
Rapid growth in urban population coupled with economic growth and rise in community living standards have resulted in generation of huge quantities of municipal solid waste posing serious problem to municipalities, and corporations in terms of collection and disposal of solid waste. , it was necessary to find an automated system to help ease the task. It has been also been noticeable that the municipality of growing urban regions are demanding mandatory pre segregated waste as and when it leaves from the source point (Homes, office, small Industries, commercial places etc.), so a system to ease out the process was required using automation. The idea for the current project was to segregate the household, educational institutions and small industries waste, offices waste based on three different criterions, namely Ferro - metallic scrap material b) Light weight waste material c) Centrifugal		

TITLE	P-6: Design and Fabrication of Paddy Transplanter	
SL.NO	USN NO.	NAME
1	1MS13ME022	Amber Kumar
2	1MS13ME028	Anant Prakash
3	1MS13ME038	Ashutosh Kumar
4	1MS13ME091	Manmohan
Mentor Name	Internal Mentor: Mr. R. Kumar	
ABSTRACT		
<p>Agriculture is demographically the broadest economic sector that endorses overall socio-economic frame of India. Agriculture accounted for 12% of the GDP (gross domestic product) in 2013, about 50% of the workforce. Traditional methods of transplanting paddy are cumbersome, challenge to human ergonomics and effort as well as time consuming. Manual workforce consists of 42 % female workers This project will address the problem faced by women farmers in handling heavy equipped transplanter by making it lighter. The manual paddy transplanter we are developing is two rows, sliding type planter.. We considered problems in existing transplanter and tried to solve it by implementing different ideas. Different design options were considered along with material selection, kinematics links and fabrication techniques. Design was verified using CAD modelling and stress analysis was carried out for selected materials.</p>		

TITLE	P-7: PROCESSING AND CHARACTERIZATION OF COATED MW-CNT /Cu NANO-COMPOSITES BY POWDER METALLURGY TECHNIQUE	
SL.NO	USN NO.	NAME
1	1MS13ME155	Sangamesh B Manoor
2	1MS13ME160	Saqib Ali
3	1MS13ME152	Sampath Kumar N
4	1MS14ME433	Vijendra Dhavalagi
Mentor Name	Internal Mentor: Mr.VISHWANATH KOT	
ABSTRACT		
<p>The discovery of carbon nanotube has revolutionized material science and technology due to its superior mechanical, physical, electrical and electronic properties. Carbon nanotubes are widely used as reinforcement in polymers, ceramics and metal matrices to enhance the various properties. Copper and copper alloys has wide range of applications due to its excellent electrical and thermal properties.. Characterization has to be carried out using SEM or XRD or Raman Spectroscopy. The samples have to be tested for mechanical (wear, hardness and compressive strength), electrical and thermal properties. This nanocomposite finds application in motor brushes, high temperature bearings, electrical windings, electromagnetic brakes and integrated circuits.</p>		

TITLE	P-8: CLEANING MECHANISM FOR SOLAR PANELS	
SL.NO	USN NO.	NAME
1	1MS13ME141	Rizwan Abdul Hakeem
2	1MS13ME142	Rohit D Hemmady
3	1MS13ME100	Muhammed Sufail M
4	1MS13ME139	Ritansh Jain
Mentor Name	Internal Mentor: Dr Puttabore Gowda	
ABSTRACT		
<p>The power output delivered from a photovoltaic module highly depends on the amount of irradiance, which reaches the solar cells. Many factors determine the ideal output or optimum yield in a photovoltaic module. The more dirt, the lower amount of electricity they will produce. While many factors affect how much electricity solar panels will produce, dirty solar panels can be one of the biggest. Experts agree that dirty solar panels don't produce as much power as clean panels. This project aims at creating an economic, waterless cleaning mechanism to clean a single PV panel, and possibly expand its capability to clean multiple panels, using automated system. The rolling brush loosens the dust particles adhered to the panel surface and the vacuum pump simultaneously sucks the loosened dust particles, cleaning the solar panel. Keywords: Solar Energy, Efficiency, cleaning mechanism, waterless, vacuum pump, automated mechanism.</p>		

TITLE	P-9: DESIGN AND FABRICATION OF AUTOMATED GUIDED VEHICLE FOR MATERIAL HANDLING	
SL.NO	USN NO.	NAME
1	1MS13ME096	Mohammmed Rayyan Hasan
2	1MS13ME099	Muhammed Shamil
3	1MS13ME153	Pranav Bhorkar
4	1MS13ME161	Sumanth Kulkarni
Mentor Name	Internal Mentor: Dr. MAHESH V.M	
ABSTRACT		
<p>The main objective of this project is to fabricate a robotic trolley for material handling in small and large scale industries. In this project a robotic vehicle (trolley) is fabricated which functions like a cart by carrying tools and materials from one point to another in a specified path or between a locus of points. This is achieved by using various sensors for motion and handling of the material. A load cell is used to sense if the load is present on the tray. The motion is acquired with the help of belt drive which consist of a driver and a driven pulley. The functioning of the trolley will be programmed and stored on a PCB (Printed Circuit Board). A printed circuit board mechanically supports and electrically connects electronic components using conductive track pads and other features etched from copper sheets laminated onto a non-conductive substrate.</p>		

TITLE	P-10: STUDY OF MECHANICAL PROPERTIES OF GLASS FIBER REINFORCED HYBRID POLYMER NANO COMPOSITE	
SL.NO	USN NO.	NAME
1	1MS13ME430	V Lokesh
2	1MS13ME436	Abdul Rehaman Shareef
3	1MS13ME215	Hemant Kumar
4	1MS12ME175	Tafazul Hussain
Mentor Name	Internal Mentor: Mr MANJUNATHA G	
ABSTRACT		
<p>Composite materials as a scientific/engineering discipline are approximately 60 years old. Composites have been useful for thousands of years. Animal hair was added to pottery to improve strength. Straw-reinforced clay was used to make bricks and Bitumen was embedded with papyrus reeds to build boats. Composite materials prepared by glass fibre reinforced polymer (GFRP) are extensively employed in various applications such as aerospace, automobile, consumer industries. The development of advanced composite with improved properties is of at most important, especially in aviation industries such as aircraft building composites which are light in weight and better tensile and flexural properties. The vacuum bagging technique is adopted for the fabrication of hybrid composite materials. The mechanical properties such as Flexural Strength, Compression Strength, Hardness and Abrasive Wear of the hybrid composites are determined as per ASTM standards. The effect of addition of filler in GFRP laminates is investigated.</p>		

TITLE	P-11: Design and Fabrication of aerial and ground pest control device	
SL.NO	USN NO.	NAME
1	1MS13ME016	Akash S
2	1MS13ME026	Anand Prakash
3	1MS13ME032	Anirudh Ravi
4	1MS13ME044	Bharath R
Mentor Name	Internal Mentor: Dr. Nagesh S N	

ABSTRACT

This project deals with the application of pesticides by the help of aerial and ground devices. One of the most important occupations in a developing country like India is agriculture. It is very important to improve the efficiency and productivity of agriculture by replacing laborers with intelligent machines. The project proposes a new strategy to replace humans in various agricultural operations like detection of presence of pests, spraying of pesticides, spraying of fertilizers, etc. there by providing safety to the farmers. Our hardware primarily consists of two components namely the ground station/ground vehicle and an aerial platform used to fly over the fields. The ground station is designed to be a vessel to carry the required power source and pesticide reservoir, while the aerial platform is responsible to spray the pesticide over a wide area and reach tall trees and navigate itself autonomously over the entire field proposed.

TITLE	P-12: Fabrication of Rollover Prevention of a Car using Active Suspension System	
SL.NO	USN NO.	NAME
1	1MS13ME112	Nithin M
2	1MS13ME113	Nithin N
3	1MS13ME154	Sandesh V
4	1MS13ME166	Shrihari P Kulkarni
Mentor Name	Internal Mentor: Mr. Nishanth Acharya	

ABSTRACT

Rollover accidents are among the most dangerous type of vehicular crashes. They account for the highest fatality rate when compared with the other vehicle accidents. A rollover can result in a passenger being ejected from the car's roof collapsing onto the people inside the car, the majority of rollover crash victims suffer injuries in head and neck region. This system is designed such that the roll center height which is the major contributor in rolling of the car is not allowed to vary by a large value by fabricating a model such that the steering mechanism controls the action of spring actuators depending on the velocity of the vehicle. The steering mechanism is connected with the steering rod which has rack and pinion arrangement, whenever the steering is rotated, at particular point the link touches the limit switch it gets activated this signal will be sent to microcontroller which actuates DC motor which in turn will operate the pneumatic cylinder in order to extend the suspension which were compressed during cornering of a vehicle. This system uses active body control by employing active suspension system will automatically adjusts the chassis setting to the driver situation.

TITLE	P-13: Design and Fabrication Of Swing For Electricity Production	
SL.NO	USN NO.	NAME
1	1MS13ME190	Utkarsh Kumar Sinha
2	1MS13ME191	Utsav Shah
3	1MS13ME192	Varghese Poulouse
4	1MS13ME202	Vishnu Dev
Mentor Name	Internal Mentor: Dr Niranjan Murthy	
ABSTRACT		

Electricity need of today's modern world is growing day by day because of continues increase in consumption due to growing population. Many concepts are being carried out to generate electricity on local basis and utilize the same for said to locality. This paper is about a swing, which is used by children for playing that produces electricity while being used. In it simple construction, the swinging action of swing makes the horizontal beam member turn through some angle. This horizontal shaft is connected to a wheel which turns along with it. Now this motion is transferred onto another ring of small diameter which rotates proportional to the angle of swing of the big wheel, in this was angular movement is converted to complete rotations. This is done by using a flexible leather belt connecting both the wheels externally. The smaller ring is connected to a step up transforming which in this case is used as a motor to generate electricity. This electricity generation takes place in both to and fro motion of the swing. The electricity, thus produced is free of cost and is ecologically friendly and can be used for local use by storing it in a battery during the time of operation. This way can certainly lower down the load on main grid thus helping saving electricity.

TITLE	P-14: Design of Torsion Bar for the service door in Armoured Recovery Vehicle (ARV)	
SL.NO	USN NO.	NAME
1	1MS13ME020	Akshay Kumar Shettar
2	1MS13ME204	Vishwajit B Malagatti
3	1MS13ME018	Akshay H
4	1MS14ME410	Gurupadappa
Mentor Name	External Mentor: Jagadeesh	
	Internal Mentor: Arun Kumar P C	
ABSTRACT		

In a T-72 ARV tank, besides crew accommodation there is a provision for Auxiliary Power Unit, Pump system, Hydraulic reservoir etc. A service door is provided for the maintenance of these through a wider opening. This opening is covered with a massive steel plate fastened with nuts and bolts. During maintenance, the handling becomes difficult and time consuming. To overcome this difficulty, through our project we intend to design a Torsion Bar fitted coaxially with the Hinge of the door. When the Bar is given a Pre-twist, opening of the door becomes easy by just withdrawing the twist and thereby using stored energy to open the door. This Unique Resilience Property of the Torsional Bar can be used as a spring where the spatial problem exists.

TITLE	P-15: Pedal Powered Washing Machine	
SL.NO	USN NO.	NAME
1	1MS13ME137	Rashmay Shankar
2	1MS13ME140	Rituraj
3	1MS13ME061	Himanshu Singh
4	1MS13ME128	Praveen Kumar
Mentor Name	Internal Mentor: Mr K LOKESHA	
ABSTRACT		

The pedal operated washing machine is the project which is best option for rural area where there is a problem of electricity or there is a shortage of electric supply. To run the washing machine there is a need of electric power and most of the villages of India are suffering from this problem and so to overcome and resolve this problem we selected washing machine which is operated manually. This does not require any electric supply or diesel supply. This project is low weight and portable thereby easily transported. We use the simple cycling mechanism to run the machine shaft. Pedal power is the transfer of energy from a human source through the use of a foot pedal and slider crank mechanism. Less commonly pedal power is used to power agricultural and hand tools and even to generate electricity. Some applications include pedal powered laptops, pedal powered grinders and pedal powered water wells. Some third world development projects currently transform used bicycles into pedal powered tools for sustainable development. This project concentrates on pedal powered machine. The objective is to bring down the initial cost and operating cost of washing machine and to promote exercising as well.

TITLE	P-16: Development of Cost Effective Self-Balancing Two-Wheeler	
SL.NO	USN NO.	NAME
1	1MS13ME015	Ajinkya Harsha
2	1MS13ME019	Akshay Kamath
3	1MS13ME046	Chandan Mr
4	1MS13ME081	Krishna Pk Giri
Mentor Name	Internal Mentor: Mr. Vishwanath Koti	
ABSTRACT		

The demand for personal transportation has picked up in the last decade on account of depreciating fossil fuel reserves and the ever-increasing effects of pollution. Since Personal Transporter (PT) are electrically powered, there is no carbon footprint, making power transmission even more efficient. However, the cost of the product is not financially accessible in developing countries, like India. The project aims to drastically reduce fabrication costs of the PT, making it more accessible to the general public. Self- Balancing is achieved by using accelerometers coupled with an Arduino circuit board. A motor controller is used to coordinate the operation of two electric scooter motors for movement in the desired direction. A timer belt enables optimum power transmission to the wheels.. The sideward movements are controlled using switches mounted on a handle provided on the platform for support. Based on design calculation PT has a payload of 100kg and runs upto speeds of 10-15km/hr. The prospect of low-cost transporters opens up a plethora of opportunities for use in Mobile Rescue, Logistics, Sport and Security.

TITLE	P-17: AUTOMATED MANUAL TRANSMISSION FOR 2 WHEELERS	
SL.NO	USN NO.	NAME
1	1MS13ME007	Adheesh Gupta
2	1MS13ME042	Ayush Kumar Sinha
3	1MS13ME088	Malpani Chetan Manak
4	1MS13ME094	Milan Raj
Mentor Name	Internal Mentor: Dr. PRAKRATHI S	
ABSTRACT		
<p>Automated Manual Transmission (AMT) is an electro-hydraulic mechanism for automating the manual transmission systems present in the vehicles. Currently, most of the vehicles on road have manual transmission systems, in which the controlling of the vehicle, in every way is done by the driver. In technical terms, the driver of the vehicle must manually press the clutch pedal, in order to change the gear and ultimately change the speed of the vehicle. And this is a very tiresome process in heavy traffics and of course causes great discomfort. The relevance of AMT is that the clutch controls and gear shifting mechanisms are fully automated. AMT is already implemented in some cars like that of Ferrari and Maruti, but not yet in two wheelers due to the bulky size of parts of the system. In our proposed system, we try to develop an AMT system for two wheelers through an electronic control unit, which intakes the values from different units like rpm sensing, speed sensing, clutch control, gear sensing units etc. and control the gear shifting process.</p>		

TITLE	P-18: Vibrational analysis of ball bearing	
SL.NO	USN NO.	NAME
1	1MS13ME068	K Shreyas
2	1MS13ME050	Deepak Nair
3	11MS13ME043	B N Chaithra Reeta
4	11ME14ME434	Vinutha.s
Mentor Name	Internal Mentor: Dr. N D Prasanna	
ABSTRACT		
<p>Over the past few years there have been advances in the improvement of bearings, in various engineering applications. In this project an attempt will be made to test the performance of ball bearings. Bearing sector is one of the examples without which not single rotating machinery works. The failure of any single rotary machine component in the process can result in loss of money and quality of the product and delay in production. To ensure the proper working condition of the machines, it is necessary to monitor the health of bearing during its operation. Vibration signature divulges important information about the development of defects within the system. Hence, the measurement of vibrations of bearings and its analysis plays a significant role in investigation of defect in the machine. Vibrational analysis is extensively used for ball bearing condition monitoring. In the present project work vibrational analysis of ball bearing will be carried out using the FFT (Fast Fourier Transform) analyser. The data generated will be analysed in the frequency domain for both healthy and defective bearings operating under different loads and different speeds. After the analysis, the vibration spectrum will provide some valuable information about defects developed in the bearing.</p>		

TITLE	P-19: FABRICATION OF WINDOW ACTUATION SYSTEM USING COMPRESSED AIR PRODUCED FROM VEHICLE SUSPENSION	
SL.NO	USN NO.	NAME
1	1MS13ME090	Manjunath R V
2	1MS13ME114	Nitish C
3	1MS13ME148	Sachin S Shetty
4	1MS13ME165	Shreyas S
Mentor Name	Internal Mentor: Dr. PRAKRATHI S	

ABSTRACT

We know that automobiles are inefficient, wasting over 74% of energy. Only few % of the available fuel energy is used to drive the vehicle. One important loss is the dissipation of vibrational energy by shock absorbers in the suspension under the excitation of road irregularity, vehicle acceleration, or deceleration, braking. In this project, the primary objective is to build a regenerative suspension system. These systems work by absorbing the kinetic energy of suspension vibration between the wheel and a sprung mass, and then converting that energy into useful form. When the vehicle runs on the irregular roads then the wheel goes to up and down motion. The cylinder arrangement is attached on the wheel axle. This motion is used to suck the air from the atmosphere. Thus, the piston inside the air cylinder creates the internal pressure which results in storage of air in the tank at certain pressure. This pressurized air is saved inside the tank. The non-return valve is used to avoid the reversing of air flow to the atmosphere. Then this developed source of power is utilized for the actuation of an automobile window using manually lever operated double acting pneumatic cylinder. This project is focused on energy saving mechanisms by using vehicle suspension system.

TITLE	P-20: Conceptualization and design of shock resistant safety chamber	
SL.NO	USN NO.	NAME
1	1MS14ME405	Bhimanna
2	1MS14ME420	Naga Keshava.S
3	1MS14ME427	S.V Anilkumar
4	1MS14ME429	Santhoshakumar M
Mentor Name	Internal Mentor: Mr.Bhardwaj gururaj Anil kumar.	

ABSTRACT

The modern day buildings are designed by taking into consideration the various natural adverse effects. However, majority of the population live in buildings which have been built decades ago and these structures do not ensure safety to the lives of people and their property in the event of natural disasters like earthquakes. Though these losses cannot be completely eliminated, the impact to the loss of lives can be reduced by providing a means for the people to secure themselves from the tons of loads that may fall on them. The objective of this project is to conceptualize, design and develop a protective chamber which can be regularly used as a bed or as a desk. The chamber upon activation would envelope a person and safeguards him/her from the impacts of heavy loads of a collapsing rooftop or a collapsing building. The chamber would also be designed to incorporate basic essentials of air, water and food for a person to survive in it until help arrives.

TITLE	P-21: Sterilization of Surgical Instruments Using Solar Powered Autoclaves	
SL.NO	USN NO.	NAME
1	1MS13ME023	Ammaar Athar
2	1MS13ME058	Gautami Vijay Patil
3	1MS13ME078	Kavya Maria Kurian
4	1MS13ME131	Rachana Chandrashekar
Mentor Name	Internal Mentor: Dr. D RAMESH RAO	

ABSTRACT

The sterilization of instruments in rural health clinics in less developed countries is an increasing problem as they lack access to continuous electricity. Autoclaves are vital in poorer countries due to the greater amount of equipment that is re-used. Providing solar powered autoclaves to rural medical centers will reduce the risk of Health Care-Associated Infection. An autoclave is a pressure chamber commonly used to carry out sterilization of equipment and supplies by subjecting them to high-pressure saturated steam at 121 °C (394K) for around 45 minutes at 15 psi (0.103 MPa). With the aim of making a design to be sustainable and economical, a solar powered system was proved to be most feasible. The system has four main components: pressure vessel, solar concentrating system – Fresnel lens, steam generation unit – evacuated tube, temperature & pressure sensors. The Fresnel lens will harness the solar energy to facilitate transformation of water into pressurized steam which will be administered into the pressure vessel. The sensors fitted on the vessel will monitor the pressure and temperature of the steam. The proposed design has a promising scope in the neutralization of potentially infectious microorganisms on surgical instruments utilizing the limited energy resources available in rural health clinics.

TITLE	P-22: Investigation of abrasive wear behaviour of heat treated TiB2 reinforced Al-MMC on mechanical characterization.	
SL.NO	USN NO.	NAME
1	1MS13ME072	Karan Patira
2	1MS13ME071	Kamal Kumar
3	1MS13ME107	Nikhil Maheshwari
4	1MS13ME060	Harshvardhan Maru
Mentor Name	Internal Mentor: Mr. Balasubramanya H. S	

ABSTRACT

Al-MMC finds its applications in most industries such as automobile and aircraft. Abrasive wear is a kind of wear which involves ploughing action, markedly different from sliding wear. In present work, an attempt has to be made in evaluating the mechanical properties of the composite along with the tribological properties of the composite. An attempt has also been made in modelling the abrasive wear and to determine the optimum parameters affecting the wear behaviour.

TITLE	P-23: MECHANICAL BEHAVIOUR OF E-GLASS, EPOXY REINFORCED WITH E-WASTE (FILLER MATERIAL) COMPOSITE	
SL.NO	USN NO.	NAME
1	1MS13ME161	Shah Emad Uddin Ahmad
2	1MS13ME151	Saksham Bajpai
3	1MS13ME153	Sandeep Pillai
4	1MS13ME150	Sahil Alam Modi
Mentor Name	Internal Mentor: Dr. Veeranna B.N.	

ABSTRACT

Now-a-days, the natural fibres from renewable natural resources offer the potential to act as a reinforcing material for polymer composites alternative to the use of glass, carbon and other man-made fibres. For a composite material, its mechanical behaviour depends on many factors such as fibre content, orientation, types, length etc. Attempts have been made in this research work to study the effect of fibre loading and percentage on the physical and mechanical behaviour of e-glass fibre reinforced epoxy based composites. A hybrid composite is a combination of two or more different type of fibre in which one type of fibre balance the deficiency of another fibre.

Composites of various compositions with three different filler material orientation as 0, 5, 10, 15, percentage are fabricated using simple hand lay-up technique. Composites are revolutionizing the manufacturing market, with e-waste as one of the ingredients we recycle and come up with strong composites.

TITLE	P-24: FABRICATION OF JAGGERY MAKING STIRRER	
SL.NO	USN NO.	NAME
1	1MS14ME413	Lokesh.D
2	1MS14ME415	Manju.K
3	1MS14ME417	Manjunatha
4	1MS14ME431	Sathish.K
Mentor Name	Internal Mentor: Dr .Anil Kumar	

ABSTRACT

In a jaggery making industries, there are many steps included from initial stage to final stage in getting final jaggery. The steps are like sugar cane cutting stage, sugar cane supplying stage, sugar cane squeezing stage, sugar cane juice stirring stage with boiling, waste carrying stage and so on. Among these stages are carried or equipped with machines or mechanized. To avoid this owner will appoint two members instead of one member for work in shift wise .By this cost of production will raised. To avoid all these problems, we are mechanizing the sugar cane juice stirrer by adopting kinematic mechanisms. We are using oscillating lever mechanism in kinematic mechanism .The set of mechanism consist of boiling basin, stirrer, chain drive , single phase AC motor and bevel gears. Single phase AC motor drives oscillating lever mechanism which in turn drives stirrer and boiling basin. Installation of the technique is of at low cost. We are hoping that this fabrication will help small scale industries in villages to get better and fast production.

TITLE	P-25: PROVIDING UNIFORM JET LUBRICATION TO THE BALL BEARINGS IN GAS TURBINE ENGINE	
SL.NO	USN NO.	NAME
1	1MS13ME062	Inzamamul Haq
2	1MS13ME083	L Manjunath Goud
3	1MS13ME101	N Roopchand Chowdary
4	1MS13ME117	P Jayanth Kumar Reddy
Mentor Name	External Mentor: Dr. VIMALA NARAYANAN Internal Mentor: Dr. Dr. P B NAGARAJ	
ABSTRACT		
The objective of the work is to overcome the brooming (sweeping) effect of lubricant in the gas turbine bearing system. Due to ineffective lubrication of ball bearings increases friction, increases operating temperatures that leads to partial welding when it revolves at high RPM's and also increases the rate of wear during the operation. Sweeping effect is caused because of high external turbulence in the two phase flow (Air and Lubricant) and pressure drop in the injector which affects the lubrication of the ball bearings. A model of the oil injector is manufactured. The design is then manufactured and tested for varying inlet pressures (3bar to 20bar) and outlet pressures (1bar to 18bar). The modified design leads to decrease in the pressure loss and achieve smooth flow rate.		

TITLE	P-30: :ELECTRIC UNICYCLE WITH SOLAR PANEL AND DYNAMO	
SL.NO	USN NO.	NAME
1	1MS13ME216	Akshay K R
2	1MS13ME218	Rakshith Rao Ksheersagar
3	1MS12ME212	Dheeraj C N
4	1MS13ME196	Veeresh S H
Mentor Name	Internal Mentor: Mr. Jaya Christiyan K G	
ABSTRACT		
In the current scenario of the world, the population is continuously increasing at a rapid rate. As there is an increase in population, there is an increase in the usage of vehicles which are run by fossil fuels. Hence there is an increased consumption of fossil fuels at a very high rate.An electric unicycle works on the basic principle that, it will move forward when the rider leans his body forward and moves backwards when the rider leans back. The project majorly includes the way to achieve the stability with the help of the latest electronic sensor technology called gyroscope and accelerometer. This paper also deals with installation of solar panels and the usage of a dynamo in an electric unicycle in order to enhance the duration for which the unicycle should run without the need for periodic charging of the device. Here the gyroscope is used to read any change of angle of inclination while the accelerometer is used to detect any change of acceleration the unicycle exerts.		

TITLE	P-26: SYNTHESIS OF MAGNESIUM COMPOSITE BY FRICTION STIR PROCESS- ING THEREBY CHARACTERIZING ITS MECHANICAL AND MICROSTRUCTURAL PROPERTIES	
SL.NO	USN NO.	NAME
1	1MS13ME047	Churchill Khwairakpam
2	1MS13ME056	Gaurav Khanna
3	1MS13ME066	Joel Royce Mathias
4	1MS13ME197	Venkatesh V Baliga
Mentor Name	External Mentor: Prof. Satish Vasu Kailas, Internal Mentor: Mr. Vinayak T.	
ABSTRACT		
Friction Stir Processing (FSP) is a novel surface modifying technique that provides microstructural modification and control in the near-surface layer of metal components thereby improving their mechanical properties. In this study, cast Magnesium is subjected to Friction Stir Processing with copper oxide as the reinforcement to prepare a metal- matrix composite of Mg-Cu in order to enhance its mechanical properties. al.The appropriate etchant was determined after extensive research in order to analyze the microstructure of the components. The components were etched after being subjected to cloth polishing. The optical microscopic images showed finer grains and homogenous distribution of alloy constituents. This research, therefore, aims to introduce FSPed magnesium composite as a substitute for Aluminum in variety of applications such as aerospace, automotive, and bio-medical fields.		

TITLE	P-27: SURVEILLANCE & FIRING VEHICLE	
SL.NO	USN NO.	NAME
1	1MS13ME200	Vishal Patange
2	1MS13ME017	Akhilkumar Kollur
3	1MS13ME195	Varun N
4	1MS14ME425	Ramanathraddy Haranal
Mentor Name	Internal Mentor: Dr.C SIDDARAJU	
ABSTRACT		
<p>Imagine the face of warfare with autonomous robotics. Instead of our soldiers returning home in flag-draped caskets to heartbroken families, autonomous robots—mobile machines that can make decisions, such as to fire upon a target, without human intervention—can replace the human soldier in an increasing range of dangerous missionsKeeping in view the area of responsibility given to Defense and availability of man power, sometimes it is not at all possible to guard some vulnerable point round the clock, at that time it becomes imperative to develop an electronic system through which the weapon can be operated remotely or automatically. To overcome this problem, we have designed a unique system i.e., remote controlled / auto firing device which can be sited at such places and is capable to fire automatically and also remotely whenever any unwanted person enters an unattended point / place.In modern days, still we are using the riffle for manual firing. There is no automatic firing rifle available in Defense and state police.</p>		

TITLE	P-28: MECHANISED ONION SHOOT/ROOT TRIMMER AND GRADER	
SL.NO	USN NO.	NAME
1	1MS13ME104	Nihal Ganapathy
2	1MS13ME126	Pranav Koushik
3	1MS13ME133	Rahuull Anbu
4	1MS13ME138	Rathan Sudheer
Mentor Name	Internal Mentor: Mr. Sridhar B. S.	
ABSTRACT		
<p>This invention aims to design and fabricate a working prototype of a completely mechanised Onion shoot and root trimmer. It aims at providing a cost effective solution for the Agro Industry in completely automating the process of de-shooting and de-rooting the harvested onions which is otherwise done manually. Further an attempt is made to make automatic grading of the onions into their respective sizes. Onion is an early Karif Rabi Commercial crop in Karnataka and an essential crop for India. With rising cost of onions in the market, it is necessary to increase the rate of production in order to meet the demand. An acre of harvested onions takes about a week to ten days to trim, grade and pack. A lot of labourers are involved in manually working for long hours every day irrespective of the variation in the price of onions. The following mechanisms are being planned for the fabrication of this prototype: A grader mechanism to segregate the onions based on their sizes. A trimming mechanism to trim the stem and roots on the onion. The machine is to be semi automated with an expected output of 100 tons per day. It would require a maximum of two skilled labourers to operate the machine.</p>		

TITLE	P-29: Studies on drilling of Composite Laminates	
SL.NO	USN NO.	NAME
1	1MS13ME172	Siddharth.T.Sistla
2	1MS13ME174	Sourin Bid
3	1MS13ME176	Sudhanva Kulkarni
4	1MS13ME171	Siddharth Kumar.R
Mentor Name	Internal Mentor: Dr SUNITH BABU L	
ABSTRACT		
<p>A composite is a judicial mixture of two or more dis-similar materials having varying physical and elastic properties in such a way that the resultant material properties are superior to its constituents. Composites offer plenty of benefits, which includes high strength to weight ratio and high modulus to density ratio when compared to conventional materials. Besides, composites have excellent anti-corrosion and anti-chemical properties backed up by good resistance to extreme climatic conditions. Conventional machining has gained precedence to meet the requisite dimensional accuracy and surface quality. Among these machining processes, drilling is frequently used in industries owing to the need for component assembly. Drilling is also used to install fasteners for assembly of laminates. Therefore, machining of composites becomes evident. It is observed that drilling constitutes about 30% of all the manufacturing processes.</p>		

TITLE	P-31: FABRICATION OF HYDRAULIC SPRING STIFFNESS TESTING MACHINE	
SL.NO	USN NO.	NAME
1	1MS14ME419	Murali L
2	1MS14ME424	Raju Jadhav
3	1MS14ME414	Lokesh L
4	1MS14ME403	Anil A
Mentor Name	Internal Mentor: Dr. P. L. Srinivasa Murthy	
ABSTRACT		
<p>The Spring has very frequent application in our day to day life right from Watches,Locks,Spring-mattresses,automobiles(Shock absorbers, valves actuating mechanism).The Stiffness of the Spring is one of the main parameter that decides the performance characteristics of the spring and hence the measurement of the spring stiffness is vital.Spring stiffness can be calculated by considering two parameters load and deflection.Using this two parameters we have planned to develop a simplified spring stiffness testing machine by using hydraulic principle which reduces the testing cost and saves time.</p>		

TITLE	P-32: STUDIES ON MACHINING OF COMPOSITE LAMINATES	
SL.NO	USN NO.	NAME
1	1MS13ME185	Thanuskaran R. k.
2	1MS13ME189	Ummer Farooque Arihole
3	1MS13ME188	Umar Alam
4	1MS11ME076	Karan J. Philips
Mentor Name	Internal Mentor: Mr Bharath M. R.	
ABSTRACT		
<p>Machining of composite material is difficult to carry out due to the anisotropic and non-homogeneous structure of composites and to the high abrasiveness of their reinforcing constituents. This typically results in damage being introduced into the work piece and in very rapid wear development in the cutting tool. Conventional machining processes such as turning, drilling or milling can be applied to composite materials, provided proper tool design and operating conditions are adopted.</p> <p>We would be investigating the effects of machining conditions (feed, speed, and tool diameter and tool geometry) on the machinability parameters (thrust force, torque) in drilling CFRP composite.</p> <p>Drilling operations on composite laminates is essential for fastening with other materials to have useful outcomes. Machining process is dependent on the material characteristics and the cutting parameters. An attempt is made in this work to investigate the influencing cutting parameters affecting drilling of composite laminates. The drilling operations would be performed with different plate thicknesses, feed rates, cutting speed and constant tool diameter as parameters for experimentations during machining to get the optimum thrust force and torque as outcome with reduced de-lamination.</p>		

TITLE	P-33: Effect of different heat treatment cycles on mechanical properties and microstructure of martensitic stainless steel.	
SL.NO	USN NO.	NAME
1	1MS13ME213	Anunay Sharma
2	1MS13ME085	Lokesh
3	1MS13ME087	Mahipat Singh
4	1MS13ME111	Nishant Shandilya
Mentor Name	External Mentor: Mr. Diwakar Rao Internal Mentor: Mr. Rajendra P	
ABSTRACT		
<p>In this paper, study of alloy steels has been reviewed. Alloy steels are extensively used in every industry ranging from household utensils to aerospace industry. The main focus of this project is to understand the effect of heat treatment processes on martensitic stainless steels undergoing different heat treatment cycles. The scope of this project is limited to heat treatment processes like tempering, quenching and hardening for martensitic steel. The aforementioned processes are discussed in detail. The composite microstructure is subsequently discussed with respect to each heat treatment cycle for each material. Varying heat treatment cycles can be achieved by varying time and temperature for heating, cooling, quenching etc. Steel properties can vary to a great extent with even a minute change in its chemical composition and temperature, hence the changes in mechanical properties are observed.</p>		

TITLE	P-34: STUDIES ON SUITABILITY OF BIODEGRADABLE OIL BASED LUBRICANT WITH CARBON NANO PARTICLE ADDITIVES”	
SL.NO	USN NO.	NAME
1	1MS13ME102	Nagaraj
2	1MS13ME116	Omprakash Wali
3	1MS13ME123	Praful P Sangawade
4	1MS13ME127	Prashant Chalawadi
Mentor Name	Internal Mentor: Dr.P.DINESH	
ABSTRACT		
<p>The environmental and toxicity issues of conventional lubricants as well as their rising cost lead to renewed interest in the development of environmental friendly oils as lubricants, vegetable oils are finding their way into lubricants for industrial and transportation applications. The vegetable oil offers significant environmental benefits because of its inherent qualities like renewability, bio degradability. Also, from India’s point of view, India has a great potential of producing vegetable oil based lubricants. The suitability of vegetable oils as lubricant is mainly influenced of its composition and stabilization towards oxidation.</p> <p>A review of the fundamental research works carried out on tribotesters to investigate the effectiveness of vegetable oil with carbon Nano particle in suppressing wear and frictional force. Results obtained in these studies are useful to explain the mechanism by which the vegetable oils reduce friction and tool wear in machining.</p>		

TITLE	P-35: Unmanned ground rover for Agricultural surveillance and data acquisition	
SL.NO	USN NO.	NAME
1	1MS13ME049	Deborshi Goswami
2	1MS13ME052	Gandhar A. Kunte
3	1MS13ME054	Gaurav Chhikara
4	1MS13ME115	Nivas Gangadhar
Mentor Name	External Mentor: (if any) - Jaisimha Rao, Founder, TartanSense Internal Mentor: Mr Pradeep Kumar K.V.	
ABSTRACT		
The project is being carried out in association with Tartan Sense, an Indian startup involved in aerial imagery and data processing solutions for the agricultural sector. The rover project was commissioned to evaluate and demonstrate the feasibility of the use of a fully autonomous rover for the purpose of yield estimation and crop health monitoring via electro-optical imagery. The rover is projected to be an electrically driven vehicle that is easy to transport and setup on field with minimal tooling required to start operation. The rover is designed keeping in mind the key development parameters and constraints for a completely autonomous ground vehicle. Drive system parameters and endurance are determined and verified through testing. Using repeated iterations of design and verification a final product capable of image acquisition and autonomous navigation is developed.		

TITLE	P-36 : Dye Penetration Test Analysis On Shrink Fit Components of a Choke Valve	
SL.NO	USN NO.	NAME
1	1MS13ME175	Sowrabh L
2	1MS13ME069	Kv Akhilesh Reddy
3	1MS13ME181	Surya Vs
4	1MS13ME206	Y Sahit Kumar Reddy
Mentor Name	External Mentor: Mr. Balachandra Hegde Mr. Prashanth Suresh Internal Mentor: Mr. Pradeep S	
ABSTRACT		
Flow control valves are used extensively in all verticals of the oil and gas industry, from upstream exploration and production to midstream transmission and downstream refining. Their primary objective is to manage flow and maximize efficiency to maintain top production levels in the most hazardous and demanding environments. They generally operate under extreme pressure and temperature in severe services that demand high integrity and zero-leakage performance. An invisible indication becomes visible under ultraviolet or white light, depending on the type of dye used. DPT carried out at the Kennametal Industries on the plug has resulted in the consistent indication of a gap at the interface of the steel body and carbide insert. This situation has lead to significant increase in production levels to meet supply standards leading to financial setback.The broad objective of this project is to analyze the above condition and attempt to refine the manufacturing technique so as to achieve components with zero gap at a consistent rate which in turn would help in reducing production levels and increasing financial efficiency.		

TITLE	P-37: Numerical Analysis of Flow Past Plunging Wing At Low Reynolds Numbers	
SL.NO	USN NO.	NAME
1	1MS13ME001	Aashish Kumar Gupta
2	1MS13ME034	Ankith BV
3	1MS13ME057	Gautam Hegde
4	1MS13ME075	Kartik V
Mentor Name	Internal Mentor: Mr. Jaya Christiyen K G	

ABSTRACT

There is a difference in the mechanism of lift generation in a Micro Aerial Vehicle (MAV) and that in a commercial airliner. The MAVs operate in the low Reynolds number regime (originally envisioned to be 104–105), which, compared with large, manned flight vehicles, have a low lift-to-drag ratio and other unfavourable aerodynamic characteristics. In the course of 350 million years, birds, bats and insects have found some clever and efficient ways of interacting with fluids at low Reynolds number. Perhaps we can see the world of unsteady fluid dynamics through an insect or a bird and exploit it for our MAVs. Insects and bird wings, during their flapping flight produce greater lift compared to the lift produced during steady flight at same angles of attack and velocities. Several studies have been performed on insect wings to study this high lift mechanism. By the mechanism of flow separation and shear layer roll up, a cogent low pressure structure can be encouraged to be formed on the suction surface of a wing. These structures are called leading edge vortices. In this project, we have carried out a numerical investigation of the flow past a rectangular NACA 0012 cross section wing of aspect ratio 2, undergoing harmonic plunging oscillations of small amplitudes; The effect of varying the plunging amplitude and angle of attack are analysed.

TITLE	P-38: Integrated Reverse Braking System With Steering Controlled Headlight Mechanism	
SL.NO	USN NO.	NAME
1	1MS13ME055	Gaurav Ganeshan
2	1MS13ME082	Kumar Gaurav
3	1MS13ME089	Manish Kumar
Mentor Name	Internal Mentor: Ms Bijayalakshmi Das	
ABSTRACT		

Nowadays safety is an important feature in the automotive industry. The intelligent braking system and steering controlled head light mechanism is the next step to automation. Presently cars have the alarm system where when the car gets too close to an object an alarm is triggered which warns the driver about an object close by. But this feature has produced lot of problems and are prone to human error. At the nighttime highest fatal traffic accidents rate occurs on curved roads. In most cases, the late recognition of objects in the traffic zone plays a key role. These facts point to the importance of the role of automobile forward-lighting system. IR transmitter and receiver circuit, control unit, pneumatic breaking system is used in intelligent reverse braking system. The IR sensor is used to detect the obstacle, if there is any obstacle in the path then IR sensor will sense the obstacle and will give the control signal to the breaking system. Designing of a steering control headlight is done by adapting a conventional static headlamp.

TITLE	P-39: RECYCLING OF PLASTIC WITH PARTIAL MELTING FOR OPTIMUM UTILISATION AND GENERAL APPLICATIONS	
SL.NO	USN NO.	NAME
1	1MS13ME029	Ananth S V
2	1MS13ME180	Supreeth H S
3	1MS13ME186	Theertha Kumar H S
4	1MS13ME201	Vishnu Prasad Rao K
Mentor Name	Internal Mentor: Mr. B P HARICHANDRA	
ABSTRACT		

One of the major man made materials which is non-biodegradable are plastics. These plastics thrown into the environment cause drastic change and harm to the environment. Since the plastics are non biodegradable there is a need to recycle them. One of the most popular processes of recycling is carried out by melting the plastics. The recycling process of the plastic is based on melting which leads to hazardous fumes. The current project is an attempt to overcome this problem by recycling plastic into briquette forms by partial melting which can find application in making products which have longer life. The aim of this project is to recycle the plastics without melting or with partial melting and make it useful for low load non critical applications and also to obtain briquettes or products of considerable thickness which can take good compressive loads. These briquettes on further forming, using simple pressing operations can be converted into useful products. Further an attempt is made to reinforce the plastic with metal scrap which could increase the strength of the resulting briquettes. Additives may be added if required and compressed to increase the strength.

TITLE	P-40: FABRICATION OF AIR POWERED VEHICLE	
SL.NO	USN NO.	NAME
1	1MS13ME002	Abhinav
2	1MS13ME005	Abhishek Kaushal
3	1MS13ME014	Ajeet Kumar
4	1MS13ME036	Anshuman Prakash Jha
Mentor Name	Internal Mentor: Mr. D VENKATESH	
ABSTRACT		

The latest trend in the automotive industries is to develop light weight vehicle as it helps in the better handling and better efficiency. The present vehicle produces a large amount of harmful gases such as CO, SO₂, CO₂ etc. This increases the temperature of the environment and also affects the human health. Researches are going on to build a vehicle which wouldn't pollute the environment, since air is environmental friendly.

In this vehicle we are using a compressor, tank, 2 double acting pneumatic cylinders, 2 solenoid valves, pedal and chain drive. The double acting pneumatic cylinder is fixed in the frame of the vehicle and the cylinder's piston rod is connected to the pedal. The pedal is coupled with front derailleur. The front derailleur and rear derailleur are coupled with a chain drive and the rear derailleur is coupled with the rear wheels. The compressor compresses the air and stores it in a tank provided. By varying the amount of air to be entered into the cylinder the speed of the vehicle can be varied. It is simpler in structure and is economic.

TITLE	P-41: Study of heat transfer characteristics of ZnO nanofluid in parabolic trough solar collector.	
SL.NO	USN NO.	NAME
1	1MS13ME108	Nikhil Singh Pundir
2	1MS13ME120	Pavan Kumar A.
3	1MS13ME121	Pavan P.
4	1MS13ME122	Pavan Prasad H.G.
Mentor Name	Internal Mentor: Dr Veeranna B. Nasi	
ABSTRACT		
<p>Content of the Abstract: A solar collector is a device that transforms solar radiation from the Sun into heat, which is then transferred to working fluid. The use of these solar collectors provides an alternative for traditional domestic water heating using a water heater, potentially reducing energy costs over time. As well as in domestic settings, a large number of these collectors can be combined in an array and used to generate electricity in solar thermal power plants. Nanofluids have novel properties that make them potentially useful in many applications in heat transfer, including microelectronics, fuel cells, pharmaceutical processes, and hybrid-powered engines, engine cooling/vehicle thermal management, domestic refrigerator, chiller, heat exchanger, in grinding, machining and in boiler flue gas temperature reduction. Knowledge of the rheological behavior of Nano fluids is found to be very critical in deciding their suitability for convective heat transfer applications</p>		

TITLE	P-42: HUMP POWER GENERATOR	
SL.NO	USN NO.	NAME
1	1MS12ME010	Abhishek Verma
2	1MS11ME044	Avineesh Singh
3	1MS12ME134	Rupesh Kumar Roy
4	1MS12ME165	Sitanshu Iyengar
Mentor Name	Internal Mentor: Mr. P.N. Girish Babu	
ABSTRACT		
<p>In the present scenario power becomes major need for human life. Due to day-to-day increase in population and lessen of the conventional sources, it becomes necessary that we must depend on non-conventional sources for power generation. While moving, the vehicles posses some kinetic energy and it is being wasted. This kinetic energy can be utilized to produce power by using a special arrangement called “POWER HUMP”.The Kinetic energy of moving vehicles can be converted into mechanical energy of the shaft through rack and pinion mechanism. This shaft is connected to the electric dynamo and it produces electrical energy proportional to traffic density. This generated power can be regulated by using zenor diode for continuous supply All this mechanism can be housed under the dome like speed breaker, which is called hump.. The maintenance cost of hump is almost nullified. By adopting this arrangement, we can satisfy the future demands to some extent.</p>		

TITLE	P-43: A STUDY ON IMPROVED PERFORMANCE OF LUBRICANTS USED IN AN- TENNA SYSTEM FOR SATELLITE TRACKING APPLICATION	
SL.NO	USN NO.	NAME
1	1MS13ME109	Nikhil A G
2	1MS13ME110	Nischal S Kanth
3	1MS13ME118	Pavan
4	1MS13ME164	Shreyas J Reddy
Mentor Name	External Mentor: Dr.Narahari Dutta Internal Mentor: K.L.Vishnu Kumar	
ABSTRACT		
<p>In antennas gearbox, the lubricant that is currently been used in ISTRAC is OMEGA 690. This lubricant has to be imported and is very costly too. Also maintenance break has to be given for the refilling of these oils. So the data that is to be received at this particular time has to be outsourced to other ISRO stations and then has to be taken back to home station for further usage. And many other undesirable factors also interrupt the proper working of the antenna. This project is a study of improved performance of lubricants used in antenna system for satellite tracking application. The lubricant shows similar properties when compared with other lubricants (example: SAE50) mixed with some additives. Previously found results ae compared with these results, the mixture that can be substituted for the present lubricant is, sterilization is done and thus implemented on the gearbox.</p>		

TITLE	P-44: Non-Conventional Energy operated Agro Sprayer	
SL.NO	USN NO.	NAME
1	1MS13ME040	Ashwin Chandrashekar
2	1MS13ME070	K Prajwal Poonacha
3	1MS13ME073	Karthik K S
4	1MS13ME080	Kishan M Nayak
Mentor Name	Internal Mentor: Dr. Siddaraju C	
ABSTRACT		
<p>“Energy- demand” is one the major threats for our country. Finding solutions, to meet the “Energy-demand” is the great challenge for Engineers, Entrepreneurs and Industrialists of our Country. According to them, applications of Non-conventional energy is the only alternate solution for conventional energy demand. Now-a-days the Concept and Technology of employing this Non-conventional energy becomes very popular for all kinds of development activities. One of the major area, which finds number applications are in Agriculture Sectors .Solar energy plays an important role in drying agriculture products, for irrigation purpose, for pumping the well water in remote villages without electricity. This Technology on solar energy can be extended for spraying pesticides, Fungicides and Fertilizers etc., using Solar Sprayers.</p>		

TITLE	P-45: FABRICATION OF FOUR WAY HACKSAW MACHINE	
SL.NO	USN NO.	NAME
1	1MS13ME169	Siddaling
2	1MS13ME198	Vinay S Tungal
3	1MS13ME051	Gadag Abhishek
4	1MS13ME145	Sachidananthan K N
Mentor Name	Internal Mentor: Mr VISHWAS D K	

ABSTRACT

It is required to machine the round or square rod on different machines to make different machine components like shaft, bolts and screws etc. for a mass production there is need to cut the raw material into number of pieces and this is conventionally performed on a power hack saw or simple hack saw machine which consume more time. To achieve this process within a less time the four-way hack saw is developed. This project proposes the model of four-way hacksaw machine which is able to cut four pieces (may be of same or different material) simultaneously with a very less time consumption. The model uses DC motor for its operation to convert rotary motion of DC motor into reciprocating motion with the help of eccentric cam. This model can perform a cutting operation on four different components of different material simultaneously. It becomes very useful in industry due to its efficiency, reliability and compatibility.

TITLE	P-46: FABRICATION OF ROTATABLE PNEUMATIC TRAILER	
SL.NO	USN NO.	NAME
1	1MS13ME130	Punith Kumar K
2	1MS13ME147	Sachin B T
3	1MS13ME157	Sanketh K G
3	1MS13ME158	Santhosh R
Mentor Name	Internal Mentor: Dr. S Krishna	

ABSTRACT

Tractor-Trailer system is widely used for material transportation in construction projects. Due to its load carrying capacity and material handling facilities, trailers are being used as popular load carriers. In most cases where road width is not sufficient, trailers face the problems while unloading the material. It takes a lot of time to unload a single trolley as all material cannot be unloaded at same place. Hence additional time is required for turning of vehicle in highly congested area. Also in case of large trolleys, if all the material is unloaded at one place additional manpower is required to arrange the material properly which finally increases material handling cost. At the same time, the trailers unload the material backside i.e. in one axis only. By providing a rotational motion to the trailer, material unloading becomes easier and quicker. The Rotating Hydraulic Trailer incorporates a Hydraulic cylinder which is used to lift the load. The main purpose of this project is to unload the material in any directions instead of conventional trailer system in which the unloading is done in one direction. The rotation of the trailer is achieved by providing Gear Trains driven by a DC motor. The trailer has been redesigned to provide a rotating motion. The prototype fabricated can carry a load up to 12kg with ease. The driver is provided with a controller (which is connected to the gear mechanism) using which he/she can turn the trailer and also unload. To avoid unnecessary motion of the trailer, a lock is provided. This design is hence useful in material unloading in agricultural work and constructional sites having low turning space.

TITLE	P-47: Design and Fabrication of a Morphing Wing System for use in Unmanned Aerial Vehicles(UAVs)	
SL.NO	USN NO.	NAME
1	1MS13ME135	Rajath Pai K
2	1MS13ME149	Sagar Shenoy M
3	1MS13ME163	Shantanu Gupta
4	1MS13ME168	Shubham Pujari
Mentor Name	Internal Mentor: Dr. Putta Bore Gowda	
ABSTRACT		
<p>Aircraft wings are currently designed as a compromise geometry that allows the aircraft to fly at a range of flight conditions, but the performance at each condition is often sub-optimal. Moreover, conventional hinged mechanisms used in ailerons and flaps as part of the aircraft’s control surfaces are effective in controlling the airflow, but they are not efficient, as the hinges and other junctions usually create discontinuities in the surface, resulting in increased drag. To overcome these limitations, this project develops an innovative morphing wing system for use in unmanned aerial vehicles. To achieve improved flight performance with limited add-on weight penalty, the project explores camber-adjustable morphing wing strategy. This is realized by using a novel flexible-rib mechanism to actuate the morphing surfaces in the wing of an aircraft, which eliminates the control surface gaps and reduces the associated drag forces. The structure was designed on modeling software and analyzed using Finite element Methods (FEM) software. After computer based simulations were assessed using Aircraft analysis tools, a working prototype of the Morphing Wing System was fabricated and validated using actual load tests.</p>		

TITLE	P-48: DEVELOPMENT OF SOLAR-OPERATED GROUNDNUT HARVESTING MACHINE	
SL.NO	USN NO.	NAME
1	1MS13ME219	Ashish Bhardwaj
2	1MS14ME430	Santoshkumar Borkar
3	1MS12ME211	Mohamed Saud Furqan
4	1MS14ME421	Naveenkumar
Mentor Name	Internal Mentor: Mr. ASHOK KUMAR K	
ABSTRACT		
<p>Among the many fast growing cash crops, groundnut is always sought after by small farmers. The crop can be grown even during dry seasons and can be harvested in 120 -150 days depending on the region and variety and sold easily either as pods or whole. But the major hardship in growing this crop is harvesting. It is a laborious and time consuming process. This machine uses a conveyer belt mechanism to pluck the plant from the soil, a DC motor operated cutter to separate groundnut from plant, a slider crank mechanism for winnowing and a chain-drive mechanism for moving the machine.The design was modelled using CAD and manual calculations(wherever required) to determine suitable cross-sections for the links and geometry of the machine. It saves 60 per cent of labor which ultimately reduces the cost of cultivation. Though there are several models of groundnut pod stripper available in various research institutes, this particular machine is compact (weighs 35kg), and can be transported easily.</p>		

TITLE	P-49: DETERMINATION OF GROWTH RATE OF LEAF USING DISCRETIZED APPROACH	
SL.NO	USN NO.	NAME
1	1MS13ME077	Praneeth K V
2	1MS13ME021	Akshay S A
3	1MS13ME074	Karthik Kumar B
4	1MS13ME041	Avinash Kumar Mandal
Mentor Name	External Mentor: Dr. P. B. Nagaraj Internal Mentor: Dr. G. K. Ananthasuresh, Department of Mech. engineering, IISc B'lore.	

ABSTRACT

Growth has fascinated biologists and engineers alike, owing to its importance in understanding the evolution of various life forms and its role in modelling for biomedical applications. Among them, controlling the shape organs is a challenging task, which is directly related to the growth of the cells. Our project involves the determination of said growth rate. For simplicity, we focus our study on leaves as they are simpler when compared to animal tissues.

Leaf spotting/markings is done and 2D images are taken at regular intervals. These images are processed using MatLab. This project involves studying the inverse growth problem in a leaf i.e. determining the growth rate of a leaf by studying its initial shape and the target shape. Using mechanical principles of FEM and MATLAB programs are written for the forward growth problem and later modified for the inverse growth problem. A finite element mesh is constructed for the leaf with the location of markers, the nodal coordinates of these markers in the current image are to be obtained. Successive images are compared and the differences in positions of the markers are computed. These displacements are then specified as the target displacements to the inverse growth problem from which the growth-rates of regions of leaves between successive images are to be estimated.

TITLE	P-50: MULTI UTILITY LEG OPERATED THREE WHEELER	
SL.NO	USN NO.	NAME
1	1MS13ME212	Nesara V Jagannatha
2	1MS13ME217	Mithun R
3	1MS11ME240	Deepak M Das
4	1MS13ME222	KM Ganesh Kumar
Mentor Name	Internal Mentor: Dr K R Phaneesh	

ABSTRACT

In today's world transportation has become one of the primary requirements of people. Mobility has thus become an essential part of our lives with many developments and improvements happening in this field. While it is easier for normal people to commute, it is difficult for physically challenged people. Transportation is a lot tougher for armless people. In this project, a feasible design solution in the form of a user friendly three wheeler vehicle which can be used by armless people to commute, has been proposed. The aim is to design and develop a control system based intelligent electronically controlled automotive for people without hands to run the vehicle through leg steering control. Outcome of this project is the solution of transport for physically challenged community using which they can commute and lead an independent and normal life. This project can be fruitful to the objectives of the challenged people who strive to achieve their goal irrespective of their physical hindrance. This project just provides the support needed for these self-confident personalities with our best of abilities through this project.

TITLE	P-51: Fabrication and Characterization of Nano based Super Capacitor	
SL.NO	USN NO.	NAME
1	1MS13ME013	Ajay Rijal
2	1MS13ME045	Bhargava K.V.
3	1MS13ME134	Raj Jung Mahat
4	1MS13ME159	Santosh Yadav
Mentor Name	Internal Mentor: Dr. Raji George	
ABSTRACT		
<p>Researchers worldwide are in quest for developing newer energy storing devices as well as looking for improving existing devices in their performance. Demerit of capacitor is the low energy density and that for a battery is the low power density, these two difficulties are overcome by super capacitor which is the latest addition to energy storing devices. Nano based super capacitors and batteries are the latest addition to the energy storage devices. These systems have enormous power, adequate energy density with longer cycle life. These systems have found tremendous application in the field of electronics, hybrid electric vehicles and domestic electronics consumer items. Although extensive research has been carried out in the field of Nano based energy storage devices, still there are many unanswered questions and scope for optimization. Nano based energy storage devices has numerous components which individually and synergistically contribute to its performance ergo optimization of each its component is essential. The performance of the systems is also dealt in detail with respect to energy density, power density, specific capacitance, self -discharge and cycle life through experimentations in our laboratory.</p>		

TITLE	P-52: Portable Vertical Axis Wind Turbine For Power Bank	
SL.NO	USN NO.	NAME
1	1MS13ME187	Tushar Uchil
2	1MS13ME167	Shriram Someshwar
3	1MS13ME177	Sudip Kumar Ghosh
4	1MS13ME211	Anubhav Raghubaid
Mentor Name	Internal Mentor: Dr Mohandas K N	
ABSTRACT		
<p>All wind turbines essentially work with the same principle, with minor modification depending on the size of the turbine and the configuration. The wind turns the blades to turn a shaft. This shaft is connected to the generator and electricity is produced. In the basic form, the rotors harness the kinetic energy of the wind and convert it into electricity. Hence to compensate the shortage that occurs while working, this design is needed. Vertical Axis Turbines are preferred over Horizontal Axis Turbine because of the fact that there are less technical issues, when compared to its counterpart. An efficient design will negate the short torque developed because of the vertical axis of the turbine. The towers will be lightweight and accept winds from any angle. The process is virtually a silent one, with the main advantage of it being that it produces a 230V output.</p>		

TITLE	P-52: Portable Vertical Axis Wind Turbine For Power Bank	
SL.NO	USN NO.	NAME
1	1MS13ME187	Tushar Uchil
2	1MS13ME167	Shriram Someshwar
3	1MS13ME177	Sudip Kumar Ghosh
4	1MS13ME211	Anubhav Raghubaid
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ABSTRACT		
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TITLE	P-53: VEHICLE SAFETY USING POWER WINDOW MECHANISM AND INSTANT CALL/SMS ALERTING SYSTEM	
SL.NO	USN NO.	NAME
1	1MS13ME084	Laxmappa S Myageri
2	1MS14ME402	Akshaykumar S Adake
3	1MS14ME407	Darshan M S
4	1MS13ME199	Vinodakumar
Mentor Name	Internal Mentor: Mr. RAJESH S	
ABSTRACT		
<p>We have seen how severe is bus disasters on fire accident etc, to avoid casualties and human lives here we are proposing power window mechanism. On sensing any danger in the form of fire and smoke the window automatically will slide down making way for passenger way out from the vehicle A number of serious lethal fire accidents including buses have occurred worldwide the latest years. Fully 10% of all buses encounter fire incidents every year. These agents spread widely and instant action needs to be taken as soon as such an event occurs. This system detects fires and smoke as soon as they start and alerts the passengers for wake up by a buzzer alert for exit, as well the intended authorities by a call/SMS automatically so that it can be stopped from spreading. This system consists of temperature and smoke sensor to detect fire and smoke spread as soon as it is encountered.The temperature and smoke sensors instantly send signals to the controller unit on fire and smoke detection, which processes the input and then sends a signal to the GSM module to send a call/SMS alert to the intended authorities so that they may take appropriate action.</p>		

TITLE	P-54: Design and Development of Plastic Recycling Machine	
SL.NO	USN NO.	NAME
1	1MS13ME414	Manjunatha J
2	1MS13ME403	Anis N Mulla
3	1MS13ME418	Nithin N
4	1MS14ME400	Abdul M Kareem
Mentor Name	Internal Mentor: Ms Jyothilakshmi R	
ABSTRACT		

The project deals about the waste plastic recycling machine. The main principle is to compress the plastic material in a barrel and the compressing motion is developed by pneumatic system arrangement. The plastic material is heated by the heater surrounding the barrel. Then it is converted into molten state. The molten plastic is injected through the nozzle in barrel to the die by the compressing force. After completing this process, we will get the product from the die. Commercial products like bushes, couplings, switches etc., can be produced waste plastic recycling machine is shown in the process consists of feeding the compounded waste plastics material as granules, pellets or powder through the hopper at definite time intervals into the hot horizontal cylinder where it gets softened. Pressure is applied through a pneumatic driven piston to push the molten material through a cylinder into a mould fitted at the end of the cylinder. While moving through the hot zone of the cylinder, a device called torpedo helps spread the plastic material uniformly around the inside wall of the hot cylinder and thus ensures uniform heat distribution.

TITLE	P-55: Kinetic Energy Recovery System (KERS)	
SL.NO	USN NO.	NAME
1	1MS13ME103	Neeraj Alva
2	1MS13ME203	Vishruth D
3	1MS13ME221	Suraj S
4	1MS12ME031	Arun Babu
Mentor Name	Internal Mentor: Mr G VKulkarni	
ABSTRACT		

Kinetic Energy Recovery System, commonly abbreviated KERS, is a system to recover the Kinetic energy of a moving vehicle under braking. This system stores the kinetic energy in the form of potential energy and converts it back to kinetic energy when needed. When riding a bicycle it becomes too tiresome to start the bicycle again after braking. If the bicycle is provided with a kinetic energy recovery system then the rider will have two power sources that he can use at his will. When brakes are applied kinetic energy is wasted because the kinetic energy converts into heat energy due to friction at the contact surface and the heat energy dissipates into the atmosphere due to thermal radiation. Vehicles equipped with KERS devices are able to take some of its kinetic energy out slowing down the vehicle. Mechanical KERS system there are of two types, one is a clutch based and another is a CVT based K.E. recovery system. In this project a hybrid of the above two type of KERS systems is designed. Instead of CVT a variable sprocket ratio is used to make the power transmission smoother. Finally the complete manufacturing process of this KERS system is explained elaborately so that any researcher can follow those steps and design a KERS system for his/her bicycle.

TITLE	P-56: STRESS ANALYSIS OF TURBINE CASING OF A TURBOSHAFT ENGINE	
SL.NO	USN NO.	NAME
1	1MS12ME090	Muhammed Faiz
2	1MS13ME183	Syed Areeb Ashfaq
3	1MS13ME193	Varun Shetty
4	1MS13ME194	Varun Suresh
Mentor Name	External Mentor: Mr Vilas Vasantrao Balekar Internal Mentor: Asst. Prof. Mahantesh Matur	
ABSTRACT		

A turbo shaft engine is a form of a gas turbine engine which is designed to produce shaft power rather than jet thrust. In concept these engines are similar to turbo jets with additional turbine expansion to extract heat energy from the exhaust and convert it into the output shaft power. Among the other parts of the turbine engine, the turbine casing is critical as it is being subjected to different pressure and temperature gradients during its working cycle. Hence there is a need of thorough analysis of the turbine casing using static loading approach. In the present study, Artouste III B helicopter engine's turbine casing was selected for the stress analysis. With this objective, analysis was carried out with different combinations such as material types namely Mild steel, High Carbon Steel and 4 types of cylindrical thicknesses. For the present study thicknesses selected are 0.8, 1.0, 1.25 and 1.5 mm studied under two pressure units such as 5 and 7.5 bar. To bring clarity in the analysis, cylinder with and without bosses around the circumference were studied independently using Ansys software.

TITLE	P-57: Optimum Design and Positioning of Cutouts in a Pressure Bulkhead under Different Loading Conditions	
SL.NO	USN NO.	NAME
1	1MS13ME008	Adithya Mayya K
2	1MS13ME009	Aditya Dinker Hosangadi
3	1MS13ME039	Ashutosh Yadav
4	1MS13ME059	Harsha Vardhan Reddy PV
Mentor Name	External Mentor: Mahadesh Kumar A, Internal Mentor: Vijay Kumar S.L.	
ABSTRACT		

The research project described in this abstract will be carried out under the Airframe Directorate, Aeronautical Development Agency, under the Ministry of Defence. The primary objective of this research oriented project is to apply knowledge of finite element methods and computational techniques to formulate, define and solve problems associated with the structural design of an aircraft. Aircrafts generally contain two or more pressure bulkheads in order to maintain pressure and prevent the aircraft from bursting due to high internal pressure. It is required to carry several hydraulic or electrical pipes through cutouts made in these bulkheads. The research will be conducted for different geometries and different number of cutouts in order to obtain specific trends for various parameters involved in the analysis of the bulkhead. Therefore, this project will provide a set of general guidelines to be followed while positioning cutouts in structural components. These guidelines and trends have been applied to the analysis of a sample bulkhead in order to obtain an understanding of their practical application.

TITLE	P-58: Design and Analysis of Solar collectors with Nano-Fluids	
SL.NO	USN NO.	NAME
1	1MS13ME097	Moheez Ahmed
2	1MS13ME105	Nihal M Maka
3	1MS13ME136	Ranjith Radhakrishnan
4	1MS13ME144	Saarthak Narsipur
Mentor Name	Internal Mentor: Dr Veeranna B Nasi	

ABSTRACT

Nanofluid-based direct solar collectors are solar thermal collectors where nanoparticles in a liquid medium can scatter and absorb solar radiation. They have recently received interest to efficiently distribute solar energy. Nanofluid-based solar collector have the potential to harness solar radiant energy more efficiently compared to conventional solar collectors. Nanoparticle materials including aluminum, copper, carbon nanotubes and carbon-nanohorns have been added to different base fluids and characterized in terms of their performance for improving heat transfer efficiency. We know that thermal conductivity of solids is greater than liquids. Commonly used fluids in heat transfer applications such as water, ethylene glycol and engine oil have low thermal conductivity when compared to thermal conductivity of solids, especially metals. So, addition of solid particles in a fluid can increase the conductivity of liquids. But we cannot add large solid particles due to main problems: Mixtures are unstable and hence, sedimentation occurs. Presence of large solid particles also require large pumping power and hence increased cost. Solid particles may also erode the channel walls.

TITLE	P-63: Project Title- Hybrid agro machine	
SL.NO	USN NO.	NAME
1	1MS13ME209	Amit Kumar
2	1MS13ME170	Siddharth Kishore
3	1MS13ME178	Suman Yadav
Mentor Name	Internal Mentor: Mr D.VENKATESH	

ABSTRACT

Solar powered agro-machine is a technology that finds suitable application in the farming community of India. Rapidly growing high technical tools and equipments makes our jobs much simpler and less time consuming. The project aims at fabricating an Agro-machine which uses solar powered rotor blades and pump that is used for cutting grass and spraying pesticides respectively. Due to the continuous increment in the cost of fossil fuels and their negative impact on environment makes it necessary for us to think of an alternate source of energy that can lead to sustainable development. In this project we make use of solar energy which is abundant and a clean source of power, to run the Agro-machine.

A solar powered multi operation equipment was designed and developed, based on the general principle of mowing and sprayer. This project deals with design of solar powered agro-machine which comprises of grass cutter and pesticide sprayer mechanism. The solar powered agro-machine is operated by the switch on the board which closes the circuit and allows the flow of current to the motor which in turn drive the blade used for mowing or spray pesticide or both as per required. The battery recharges through the solar charging controller.

TITLE	P-60: FABRICATION OF OXYHYDROGEN DRY CELL FUEL SYSTEM FOR S I ENGINE	
SL.NO	USN NO.	NAME
1	1MS12ME402	Ashwin S Jamadgni
2	1MS14ME409	Dileep R
3	1MS14ME432	Soundarya V
4	1MS14ME435	Vishal V K
Mentor Name	Internal Mentor: Dr P L Srinivasa Murthy	
ABSTRACT		

In the history of internal combustion engine development, hydrogen has been considered at several phases as a substitute to hydrocarbon-based fuels. Starting from the 70's, there have been several attempts to convert engines for hydrogen operation. Together with the development in gas injector technology, it has become possible to control precisely the injection of hydrogen for safe operation. Otto, in the early 1870s, considered a variety of fuels for his internal combustion engine, including hydrogen. He rejected gasoline as being too dangerous. Later developments in combustion technology made gasoline safer. Since the fuel cell needs certain improvements before it is widely used in vehicles, the conventional internal combustion engine is to play an important role in the transition. Slight modifications are made for hydrogen feeding which do not change the basic characteristics of the original engine. A hydrogen vehicle is an alternative fuel vehicle that uses hydrogen as it's on board fuel for motive power. The term may refer to a personal transportation vehicle, such as an automobile, or any other vehicle that uses hydrogen in a similar fashion, such as an aircraft. The power plants of such vehicles convert the chemical energy of hydrogen to mechanical energy either by burning hydrogen in an internal combustion engine, or by reacting hydrogen with oxygen in a fuel cell to run electric motors. The widespread use of hydrogen for fuelling transportation is a key element of a proposed economy.

TITLE	P-61: MECHANICAL CHARACTERIZATION OF GFRP LAMINATES WITH GRAPHENE	
SL.NO	USN NO.	NAME
1	1MS13ME011	Aditya Patil
2	1MS13ME035	Anmol Shetty
3	1MS13ME079	Kingshuk Banerjee
Mentor Name	Internal Mentor: Ms JYOTHI LAKSHMI R	
ABSTRACT		

Glass fiber reinforced polymer is widely used in various applications for their improved properties. In order to further enhance the properties of GFRP laminates they can be combined with other material through the introduction of filler materials to get better properties. Development of advanced composites with improved properties is of utmost important, especially composite which are light in weight but with better tensile and flexural properties is the need of the hour. When the lamina plies are stacked at various angles, the lay-up is called a laminate. Continuous-fiber composites are normally laminated materials in which the individual layers, plies, or laminae are oriented in directions that will enhance the strength in the primary load direction. In our dissertation work we are adding graphene in various percentages to the GFRP composite laminate so as to increase its strength and mechanical properties. These properties will then be tested by carrying out tensile and flexural tests on the GFRP laminate according to the ASTM standards. For tensile test and flexural test ASTM values are found using D3039 and D7264 respectively. The effect of addition of graphene is studied by these tensile and flexural properties. This will help us to find out the ability of graphene powder to improve the mechanical properties of GFRP laminates.

TITLE	P-62: Modeling and Analysis of Wing Shear Fitting of a Fighter Aircraft	
SL.NO	USN NO.	NAME
1	1MS13ME132	Rahul R
2	1MS13ME411	Kiran N
3	1MS12ME101	Parth Sharma
4	1MS14ME436	Vithal Reddy
Mentor Name	External Mentor: Kiran Internal Mentor: Dr. Nagesh S N	
ABSTRACT		
<p>Any aircraft structurally has 5 major assemblies viz. Fuselage, Wing, Undercarriage, Empennage and Tail fin. The fuselage is divided into 3 parts viz front fuselage, centre fuselage and rear fuselage. The wings are an important lift producing part of an aircraft. The wing is attached to the fuselage at a few different points to transfer the bending & shear loads caused by aircraft lift. Some of these attachments are designed to bear the bending & shear loads and others only to transfer the shear loads. The Wing Shear fitting attaches the front end of the wing to the bulk head part of the fuselage. The Project work covers CAD modeling of wing shear fitting and the structural analysis for the design loads on the shear fitting is carried out. The modeling is done using CATIA and the structural analysis is carried out using MSC Patran & NSC Nastran software. Later, the stress model has been used to estimate the load handling capacity of the shear fitting. The project work of “Modeling and analysis of wing shear fitting of a fighter aircraft” was undertaken at Aircraft Research and Design Centre, Hindustan Aeronautics Limited, Bangalore.</p>		

DEPARTMENT OF **MEDICAL ELECTRONICS**



Project Abstracts

2016 - 2017

TITLE	Auditory psycho-physical response and analysis in human beings	
SL.NO	USN NO.	NAME
1	1MS13ML018	LAVANYA C P
2	1MS13ML029	PRAKYA S V
3	1MS13ML045	SANJANA P SABARAD
INTERNAL MENTOR	INTERNAL MENTOR: Mr. SANJAY H S	

ABSTRACT

The human ear perceives sounds in intricate ways. The technical aspect of this perception involves two major components; intensity and frequency. This paper focuses on the perception of ear based on frequency. The ear's sensitivity varies significantly with frequency. Different frequencies sound like they are being played at different volume levels even when they are played at the same volume. This is an attribute of the non-flat frequency response of the ear. Some tones are heard easier than the others and this is an effect of how the ear is and its response to vibrations at varying frequencies. The human ear is most sensitive to frequencies in the range of 2,000-5,000 Hz. Our hearing has its peak sensitivity around 3,500-4,000 Hz. This frequency is associated with the resonance of the ear canal. The purpose of this paper is to analyse human hearing in terms of perception based on the frequency response of the ear. Different control groups (N=44) from various environments were chosen to be a part of the study. The results show a distinct deterioration of frequency response in subjects exposed to occupational hazards such as noise and aromatic chemicals.

TITLE	Raaga Therapy	
SL.NO	USN NO.	NAME
1	1MS13ML008	BASAVARAJ B S
2	1MS13ML410	RAMESH NAIK L
3	1MS14ML411	PRAMOD P G
INTERNAL MENTOR	INTERNAL MENTORS :Mr. SANJAY H S	

ABSTRACT

The purpose of this study was to investigate the efficacy of music therapy in reducing the amount of fluctuation in the blood pressures of individuals subjected to varying levels of stress. Use of Indian and western music have been considered to detect the variation of the two on the physiological system. Subjects (N = 44) between the ages of 18 and 22 were chosen. The control group received blood pressure measurement before and after they were subjected to 12 minutes of music. The group was subjected to Indian music on day 1 and Western music on day 2 to analyze the variations in the systolic pressure, diastolic pressure and pulse rate of each individual before and after music therapy.

Statistical tests revealed a significant difference between the effects of Indian raagas and Western classical music. The results were positively increasing for both the conditions (Low BP-High BP and High BP-Low BP). However, a greater change was observed in the case of Indian classical raagas as compared to the western counterparts.

TITLE	Design of Functional Electrical stimulation system	
SL.NO	USN NO.	NAME
1	1MS13ML034	PUNEETH KUMAR MYPADI U R
2	1MS13ML058	VARUNA UPADHAYA YA M L
3	1MS13ML061	VINEET BHOJWANI
INTERNAL MENTOR	INTERNAL MENTOR :Mr. S.J.MAHENDRA	
ABSTRACT		

Functional electric stimulator (FES) is a device which is used to apply electric pulses to a muscle to trigger the movement. FES is most effective in treating conditions like foot drop, Spinal cord injury and rehabilitation. FES helps to restore mobility by applying electrical pulses to the paralyzed muscles so as to enhance that person's ability to function and live independently. Existing FES is of high cost thus not affordable by most of the people in India. FES thus designed is cost effective and is focused on rehabilitation. It has both current and voltage regulated stimulation system. It has dual microcontrollers. Arduino due is used as the master controller. It takes various parameters from the slave devices and triggers the device accordingly. It also controls the device by mapping input on to the output. Arduinouno is used solely for the generation of the stimulation signal. Serial peripheral interface (SPI) and I2C protocols are used to communicate between master and slaves. Due to its cost effectiveness it will be of great use for middle class community.

TITLE	Iris diagnosis- A quantitative non-invasive tool for diabetes detection	
SL.NO	USN NO.	NAME
1	1MS13ML022	MITHUN B S
2	1MS13ML037	R SNEHA
3	1MS13ML059	VINAY RAJ K
INTERNAL MENTOR	INTERNAL MENTOR: Mr. BASAVARAJ V HIREMATH	
	EXTERNAL MENTOR: Dr. RAGHAVENDRA SWAMY, S-VYASA	
ABSTRACT		

Iris diagnosis is a branch of medical science that deals with the observation and diagnosis of iris. Iris image analysis for clinical diagnosis is one of the most efficient non-invasive diagnosing method for determining health condition of internal organs. Correct and timely diagnosis is critical, yet absolute requirement of medical science. From the literature survey, it is found that modern technology fails in lot of cases to diagnose the disease correctly. The attempt is being made to explore the area of diagnosis from different aspects. Initially the images of eye are captured using iridoscope; database is created with their clinical history. Various algorithms are developed for image quality assessment, segmentation, normalization, feature extraction and classification of iris for clinical diagnosis. Feature extraction plays a vital role to help us identify whether the iris image is diseased or disease free. Classification method such as support vector machine is used for training and classification purpose since it is faster and user friendly.

TITLE	Detection of Efficient patterns for Detection of Lung Cancer	
SL.NO	USN NO.	NAME
1	1MS13ML010	C JAYVARDHAN CHETTY
2	1MS13ML015	K GUNA SHEKAR
3	1MS13ML026	PANCHAM BOPPANNA D
INTERNAL MENTOR	INTERNAL MENTOR :Mr. BASAVARAJ V HIREMATH	

ABSTRACT

Lung cancer is one of the most occurring cancer among both men and women. Detection of cancer at the early stage is the only method to improve the survival rate. CT images of lung are helpful in the diagnosis of lung cancer. Doctor analyses the CT image and predicts the presence of cancer nodule. This manual detection can also result in false detection. So in order to overcome this problem a computerized method for cancer detection is needed. Image processing technique can be used for this purpose. By using the following image processing techniques lung cancer detection can be developed further. Lung cancer detection system has three steps to detect the presence of cancer nodule in lung. Pre-processing stage, segmentation and feature extraction stage. Pre-processing step includes image enhancement using Gaussian filter and image segmentation. Enhanced CT image of lung is then fed to segmentation phase. From the segmented output, features are extracted to predict the presence of abnormality of lung. By using these extracted features classify the lung as normal lung or cancerous lung.

TITLE	Real Time Cardiac Monitoring using AD8232 and Analysis of Heart Diseases	
SL.NO	USN NO.	NAME
1	1MS13ML028	PRAKRUTHI S G
2	1MS13ML031	PREETHI GANAPU MUKRI
3	1MS14ML404	BHAGYA A R
4	1MS14ML408	MADHUSHREE K
INTERNAL MENTOR	INTERNAL MENTOR: Mrs. UMA ARUN	

ABSTRACT

The electrocardiogram is a diagnostic tool that measures and record the electrical activity of the heart over a period of time using electrodes placed on skin. The electrodes detect the tiny electrical change on the skin that arise from heart muscles. Once ECG signals is acquired the remaining noise should be minimized as much as possible by using digital processors. In context with the above block diagram we understand that electrodes are used to acquire the ECG signal from the human body. In this method we used surface electrodes as it is cheap and easily available. We use 3 different electrodes in which red colour wire connected to right arm, blue colour wire is connected to right leg. These electrodes are connected to sensor AD8232 which is a single lead heart rate monitor and cost effective board used to measure the electrical activity of heart. It acts as an amplifier, helps to obtain a clean signal and operates at very low voltage power at 3.3 V. The sensor works with the help of the ATmega 328 microcontroller of 28 pins and operates at a voltage of 5V. This microcontroller is programmed based on arduino uno techniques. The signal acquired is stored in the SD card using the card module. SD card module is a simple solution for transferring data to and for a standard SD card. The output acquired by the setup is displayed on the computer and the data stored in SD card will be analyzed using MATLAB.

TITLE	Studies on relating to monitoring blood glucose levels using non-invasive optical methods	
SL.NO	USN NO.	NAME
1	1MS13ML001	AISHWARYA LAKSHMI K
2	1MS13ML035	R RASHMI
3	1MS13ML055	SWETHA SADANAND
INTERNAL MENTOR	INTERNAL MENTOR: Dr. C K NARAYANAPPA	
ABSTRACT		

The number of patients who are affected by diabetes worldwide is increasing with an expansion in population and their unhealthy lifestyle which leads to obesity and physical inactivity. According to International Diabetes Federation (IDF), India has the largest number of diabetic patients of about 50.8 million, which can be expected to 89 million by 2030 and is among the top three countries which has diabetic patients. These statistics show the importance of measuring and monitoring the blood glucose levels of the people. The current method which is widely used for measuring blood glucose levels involves needles for pricking which is painful and can cause discomfort to the patient. Thus, our project is about designing and studying a glucometer which non-invasively measures blood glucose level using optical methods with acceptable error. The method chosen after analysis and testing was Near Infrared type of measurement using 940nm wavelength in reflectance mode. Arduino UNO was used for programming to quantify the glucose levels according to certain conditions.

TITLE	Reduce the effect of Baseline Shift in ECG using DSP	
SL.NO	USN NO.	NAME
1	1MS13ML048	SHIVA KUMAR GOWDA P
2	1MS14ML407	GOWTHAM P
3	1MS14ML410	PRADEEP M
4	1MS12ML053	SWETHA NAYAK D
INTERNAL MENTOR	INTERNAL MENTOR :Dr. C K NARAYANAPPA	
ABSTRACT		

Electrocardiogram (ECG) is a widely used routine and important cardiac diagnostic tool where in electrical signals are measured and recorded to know the functional status of heart. Signal is generally corrupted by various artifacts like baseline wander, power line interference (50/60 Hz) and electromyography noise and these must be removed before diagnosis. These artifacts corrupt the original ECG signal and reduces it quality. Therefore, there is a need to remove such artifacts from the original signal and improve its quality for better interpretation. ECG signals are very low frequency signals of about 0.5Hz-100Hz and digital filters are used as efficient means for noise removal of such low frequency signals. In this project presents the comparative analysis of FIR and IIR filters and their performances to remove Baseline noises from the ECG signal for proper understanding and display of the ECG signal. The FIR filters are Digital filters with various windowing methods such as Rectangular, Blackman, Hamming, and Kaiser.

TITLE	A novel wearable fetal ECG monitoring system for measuring fetal-mother wellbeing	
SL.NO	USN NO.	NAME
1	1MS13ML039	RAJANI R
2	1MS13ML053	SUMANTH R TELLAKULLA
INTERNAL MENTOR	INTERNAL MENTOR: Dr. N. SRIRAAM	
	EXTERNAL MENTOR: Dr.P.S.PANDIAN	
ABSTRACT		

Fetal Monitoring during pregnancy is quite a challenging task in the gynaecological community due to the incidence of fetal loss, perinatal morbidity and maternal distress. There is a huge demand for continuous monitoring of fetal ECG and maternal ECG during 30-36 gestation weeks. This project proposes a novel wearable fetal ECG monitoring system for continuous recording of ECG from the foetus and mother. A novel textile bases 4 channel electrode with a wearable belt was proposed for this study. A lab based prototype was developed for the pilot study. The recorded ECG signals (normal) were annotated for clinical suitability and the obtained results were quite promising.

In order to extract the fetal ECG from the mother's ECG, adaptive filtering procedure was introduced. A suitable features and pattern classifier was proposed to recognize normal ECG from those which had a typical arrhythmia. The proposed work needs to be validated in a clinical environment. It can be concluded that the design suits well for a clinical and home setup which can be extended for a resource constrained set up ensuring low cost better healthcare delivery.

TITLE	Automated cry detection algorithm's for pre-term neonates in NICU	
SL.NO	USN NO.	NAME
1	1MS13ML027	PRAFULLA V
2	1MS13ML041	S G RAKSHA
3	1MS13ML050	SHRADDHA G S
INTERNAL MENTOR	INTERNAL MENTOR: Dr. N. SRIRAAM	
	EXTERNAL MENTOR: Mrs. TEJASWINI S	
ABSTRACT		

Infant cry is considered as the dominant biological marker establishing closer connectivity between the newborn and the mother. Analysis of the cry signal tells about physiological and pathological conditions of the neonates. In order to differentiate the cry types, selection of features plays an important role. Thus a database was created by collecting cry samples from the neonates (premature) under the age group of 1-4 months. Hunger, pain and discomfort type of cry signals were considered. 319 samples were collected from the neonates in the NICU followed by silence removal using a suitable algorithm. Manual classifications of the cry signals were done based on Dunstan cry talk. This research study suggests the extraction of frequency domain features- power spectral density, Mel frequency cepstral coefficients, bark frequency cepstral coefficients from the newborn cry signal. Three PSD methods namely Periodogram, Burg and covariance were applied and different segmentation techniques (0%, 25%, 50% and 75%) were used. The results were statistically evaluated using ANOVA and BOX plot analysis and ranksum test (P and H value). The verified features were given as inputs to the MLP classifier and the accuracy was determined.

TITLE	Development of handy nomad physiological monitor	
SL.NO	USN NO.	NAME
1	1MS13ML005	ARPANA N
2	1MS13ML062	SOWMYA N
3	1MS14ML403	ANUSHA M R
4	1MS12ML014	ARYA SURESH
INTERNAL MENTOR	INTERNAL MENTORS : Dr. N. SRIRAAM	
	EXTERNAL MENTOR: Mrs. PRABHU RAVIKALA VITTAL	
ABSTRACT		
<p>Wearable physiological monitoring system has occupied a dominant place in the healthcare domain recently. This is due to the fact of connecting patient with clinician through home centric physiological monitoring facilities. This specific project proposes a development of handy nomad physiological monitor(HANOPHM). The system comprises of wearable clothes which can record ECG,PPG and accelerometer signals. All the signals were synchronized to evaluate the performance of the HANOPHM. Three index, HRV, pulse rate and heart rate were measured. The lab based pilot level prototype found to be very promising and has to be validated with large test group before considering this monitor for clinical routine.</p>		

TITLE	Study and Development of Computer Aided Diagnostic tool for Breast Thermogram	
SL.NO	USN NO.	NAME
1	1MS13ML007	AKHIL B G
2	1MS13ML013	DRUPADA A
3	1MS13ML046	SAURABH V RAUT
4	1MS13ML051	SHRUTHI K JAISANKAR
INTERNAL MENTOR	INTERNAL MENTORS: Dr. N. SRIRAAM	
	EXTERNAL MENTOR : Mrs.PRABHA RAVI	
ABSTRACT		
<p>Breast cancer is one of the leading causes of death in women. Traditional imaging modalities such as mammography and ultrasonography have been used for screening and detection of breast cancer. Although mammography image is considered as gold standard approach, due to its cumbersome procedure (with x-ray exposures on compressed breasts) and its inability to detect cancerous cells of the order less than 166cm,medical thermography imaging procedure gained much attention due to non-invasive functional imaging procedure. The proposed project aims in developing computer aided screening tool for breast thermograms. Two open source database along with a set of data collected from screening camp which was held in southern part of Tamilnadu were considered for the proposed work. Automated segmentation was introduced followed by three feature selection procedure such as statistical, textural and morphological were introduced. Then breast thermograms were classified using SVM and KNN classifier to recognize whether the given image is normal or benign. A GUI was developed using MATLAB software tool for automated screening of the breast thermograms</p>		

TITLE	Survival prediction of Kidney failures in patients	
SL.NO	USN NO.	NAME
1	1MS13ML042	SAFA SUBAIR
2	1MS13ML044	SANJANA M SHETTY
3	1MS14ML409	MONISHA JOHN
INTERNAL MENTOR	INTERNAL MENTOR:Dr. N. SRIRAAM	
ABSTRACT		

The cost of providing healthcare for patients on hemodialysis due to end stage kidney disease is high. Finding ways to improve patient outcomes and reduce cost of dialysis is important. Dialysis can be intricate and multiple factors may influence patient survival. Around 36 parameters are monitored on regular basis in providing kidney dialysis treatments such as dry weight, pre-dx weight ,weight gain, pre-dialysis BP (supine and standing) ,post-dialysis BP (supine and standing) , number of reuse(dialyzer), UF target (average weekly ultra filtration) , BFR , BP (presence of intra-dialytic hypertension) and so on. Based on the parameters derived categorization was done as nominal, numeric and categorical. Analysis of variance (ANOVA) tests the hypothesis that the means of two or more populations are equal. ANOVAs assess the importance of one or more factors by comparing the response variable means at the different factor levels. The null hypothesis states that all population means (factor level means) are equal while the alternative hypothesis states that at least one is different. We combine the CKD and NCKD parameters respectively and input the values in the excel sheet to the ibm spss software to obtain the results of the statistics, mean, variance, standard deviation, anova

TITLE	Development of computational algorithm using multi-features and neural network for epileptic seizure detection in long term multi-channel EEG	
SL.NO	USN NO.	NAME
1	1MS13ML016	KADEEJA TAMANNA
2	1MS13ML019	LEENA N
3	1MS13ML021	MEHRAJ KHANUM
INTERNAL MENTOR	INTERNAL MENTOR:Dr. N. SRIRAAM	
ABSTRACT		

Detection of epileptic seizure activities from recorded multi-channel electroencephalogram (EEG) segments is crucial for the localization and classification. Visual identification of epileptic seizure in long-term EEG is cumbersome and tedious for neurologists, which might also lead to human error. Therefore, an automated tool for accurate detection of seizures in a long-term multi-channel EEG is essential for the clinical diagnosis.

This project proposes the development of automated computer aided algorithm for detection of epileptic seizures from multichannel EEGs. After appropriate approval, recordings of 20 patients were collected from Institute of Neurosciences, Ramaiah Memorial Hospital, Bengaluru.

The raw EEGs were filtered to remove artifacts and eye blinks/ muscular signals. For stationarity condition to be preserved, a 1second windowing was used. Three features, power spectral density, Teager energy and entropies were used. Totally, seven features were extracted, namely, power spectral density using Welch, Thomson, Burg, and Yule-Walker, Shannon and Renyi entropy, and Teager energy. The statistical and descriptive analysis ensures the suitability of the proposed features for pattern classification. Multi-features were fed to multilayer perceptron neural network (MLPNN) classifier to evaluate the performance of the study. The simulation results showed a sensitivity of, specificity of and classification accuracy of 96% which indicates the proposed study is suitable for real-time seizure recognition from multi-channel EEG recording

TITLE	Design of Wireless Physiological Communication Unit for remote application	
SL.NO	USN NO.	NAME
1	1MS13ML004	APURVA S VASAN
2	1MS13ML047	SHANMUGA PRIYA G
3	1MS13ML052	SHRUTHI R
4	1MS13ML057	USHA K S
INTERNAL MENTOR	INTERNAL MENTORS: Prof. P.G. KUMARAVELU , Mrs. PRABHU RAVIKALA VITTAL	
ABSTRACT		

This project deals with the wireless communication of physiological parameters like pulse rate, heart sound, blood pressure and temperature. In villages people lack specialized treatments and hence to provide better diagnosis, we are developing a physiological transmission unit which can send to the urban specialists within minutes. This system would enable the transmission of the data collected from remote areas to the physician at healthcare organizations located in urban area. This data will be sent to raspberry pi from which the data is transmitted to the cloud. The transmission of data from Raspberry Pi to cloud is based on two protocols namely, HTTP (Hyper Text Transfer Protocol) and FTP(File Transfer Protocol).

This project also has an alerting system for blood pressure. As soon as the BP raises above the normal level, an alert in the form of email is sent to the doctor indicating that the BP is high and the patient needs immediate attention.

The physician can access the data from the cloud. The physician will also be able to monitor the data received from the sensor. Thus this system will be able to transmit data from remote locations to a specialist or doctor , thereby helping in diagnosis and treatment of patients

TITLE	Development of automated computer aided tool for Meibomian gland dysfunction	
SL.NO	USN NO.	NAME
1	1MS13ML020	LINA AFREEN FATHIMA
INTERNAL MENTOR	Internal Mentor: Dr. N. SRIRAAM	
	External Mentor: Mr. KUMAR T RAJAMANI , ROBERT BOSCH	
ABSTRACT		

Meibography is used to study the morphological changes in the meibomian glands.

Meibomian oil, secreted from the Meibomian glands, forms the lipid layer at the surface of the tear film which prevents excessive evaporation. Meibomian gland dysfunction (MGD) is a chronic abnormality of the meibomian glands commonly characterized by terminal duct obstruction and/or qualitative/quantitative changes in glandular secretion.

Conventional Meibography is difficult to apply to the upper eye lids. The Present methodology for accessing the meibomian glands include manually visualizing the gland areas by the doctor to check for irregularities. This is prone to a lot of human errors.

The main objective of this project is to create a noncontact system, patient-friendly, computer aided infrared meibography tool that is fast and helps physicians detect any abnormalities in the meibomian glands. This is a non-invasive technique causing no discomfort to the patients. A study on evaluation of meibomian gland dysfunction in cataract patients is conducted.

An evaluation of different qualitative validation approaches of meibomian gland imaging is done to evaluate the performance of two meibography devices namely, Bosch Infrared Imager and Oculus keratograph.

The algorithm is developed for meibomian gland segmentation using various image processing morphological operations to distinguish a healthy meibomian gland tissue from a diseased gland.

DEPARTMENT OF TELECOMMUNICATION ENGINEERING



Project
Abstracts

2016 - 2017

TITLE	IOT based patient position and ICU monitoring system	
SL.NO	USN NO.	NAME
1	1MS13TE042	RESHMA J NAYAK
2	1MS13TE051	SNEHA J R
3	1MS14TE408	SUSHMITHA B C
INTERNAL MENTOR	INTERNAL MENTOR :Dr. K Natarajan	
ABSTRACT		
<p>As the hospitals are overloaded beyond their limitations of resources,Aim of this project is to focus specifically on healthcare IoT. We will manage the Air quality, dustbin monitoring and patient position monitoring.</p> <ul style="list-style-type: none">Indoor air quality plays a crucial part in creating a safe and hygienic environment within healthcare facilities. Airborne bacteria and pollutants can have a major effect on health– this is exaggerated when people are especially vulnerable to illness and infection.A lot has been said over the years regarding the health and, but one thing that is over looked time and again is hospital-acquired infections. As such, one of the most important tools in hospital hygiene is hospital bins.Body Position Sensor monitors different patient positions. In many cases, it is necessary to monitor the body positions and movements made because of their relationships to particular diseases (i.e., restless legs syndrome). Analysing movements during sleep also helps in determining sleep quality and irregular sleeping patterns. <p>When the sensor data values exceed the threshold, message will be sent to the concerned persons and it will be uploaded to cloud. Then necessary action can be taken immediately.</p>		

TITLE	IOT enabled Power Quality Monitoring and Analytics	
SL.NO	USN NO.	NAME
1	1MS13TE024	MANISHA ANJAN
2	1MS13TE041	RAJEEV B A
INTERNAL MENTOR	INTERNAL MENTOR :Dr.Shobha K R	
ABSTRACT		
<p>The electrical power systems are exposed to different types of power quality disturbances problems. Assessment of power quality is necessary for maintaining accurate operation of sensitive equipments especially for laboratories and housing. It also ensures that unnecessary energy losses in a power system are kept at a minimum which lead to more profits. Thus, it would be useful to investigate and mitigate the power quality problems. Assessment of power quality requires the identification of any anomalous behavior on a power system, which adversely affects the normal operation of electrical or electronic equipment. Power quality assessment involves gathering data resources; analyzing the data (with reference to power quality standards). In this design an energy meter is deployed to monitor a power system. A raspberry pi is used to obtain, store and forward the data of various electrical parameters to cloud platform. Quality index, efficiency, loss of power , power cuts per day and many such factors can be analyzed. Then, if problems exist, recommendation of mitigation techniques must be considered.</p>		

TITLE		Optimized Riding using Wireless Sensor Networks and Voice Recognition	
SL.NO	USN NO.	NAME	
1	1MS13TE007	ALVIN JOE JACOB	
2	1MS13TE015	FLORINE FELICIA T	
3	1MS13TE021	LEKHA M	
4	1MS13TE027	MICHAEL JIGY ANTHONY	
INTERNAL MENTOR	INTERNAL MENTOR :Dr.B K Sujatha		
ABSTRACT			
<p>People remain ignorant to regulations set by the government failing to realize the importance of a helmet and the benefits involved in setting up such rules.Looking at our results, we have proposed a system with features which would attract people to use helmet as well as make their ride a better experience. This model consists of a smart helmet and a bike module which provides the following features:</p> <ul style="list-style-type: none">•The smart helmet controls the ignition of the bike making it a must for the rider to use the helmet.•Bike automation with respect to indicator, headlight and horn can be achieved by using a voice recognition module in the helmet eliminating manual switching.•Ultrasonic sensor is used to continuously monitor the road for humps and give a prior alert to the rider.•Bluetooth Speakers are used to synchronize with the rider’s mobile phone to ease the difficulty of using Google Maps while riding.•Accident alert by informing the nearest hospital by an SMS along with the location. Thus, helping us achieve our aim to improve the safety of riders.			

TITLE	Smart Home Automation Using CC3200	
SL.NO	USN NO.	NAME
1	1MS13TE034	PRATHEEK B ATHREYA
2	1MS13TE011	DIPENDER SINGH
3	1MS13TE008	APARIMITA H K
4	1MS13TE043	RISHABH JAIN
INTERNAL MENTOR	INTERNAL MENTOR :Dr.Shobha K R	
ABSTRACT		
<p>Home automation or smart home is the residential extension of building automation and involves the control and automation of lighting, heating, ventilation, air conditioning and security, as well as home appliances such as washer/dryers, ovens or refrigerators/freezers using Wi-Fi for remote monitoring. Modern systems generally consist of switches and sensors connected to a central hub sometimes called a “gateway” from which the system is controlled with a user interface that is interacted either with a wall-mounted terminal, mobile phone software, tablet computer or a web interface, often but not always via internet cloud services. Smart Home Automation is an efficient system which minimizes and saves energy, allowing people to remotely control cooling and heating, lighting, and other appliances. This project deals with home automation using the Texas Instrument CC3200 launch pad and uses the concept of Internet of Things (IOT). The aim of this project is to design and implement a home automation system that is a simple yet an efficient system. The electrical appliances of the house are controlled with an app called Blynk. The app interface has widgets such as buttons, timers, slide switches etc through which data can be sent to the microcontroller. Relays are used to turn on and off the lights of the smart home according to the app buttons. Also, a timer is used to keep some particular lights, such as corridor lights, on for a specific time. The regulator for fan speeds can be controlled through the slider widget of the app. Thus, all appliances in a smart home can be easily controlled by the user leading to a smart efficient lighting system.</p>		

TITLE	BCI(Brain Computer Interface) for Development and Control of a Prosthesis Environment	
SL.NO	USN NO.	NAME
1	1MS13TE035	PRATHIBAH R
2	1MS13TE057	SWETHA L
3	1MS13TE060	VAISHNAVI S
INTERNAL MENTOR	INTERNAL MENTOR :Dr.Shobha K R	

ABSTRACT

A brain-computer interface (BCI) or brain-machine interface (BMI), is a direct communication pathway between an enhanced or wired brain and an external device. People who suffer from motor neuron diseases face many problems, primarily to communicate with others in their daily life. The field of BCI research and development has thus focused primarily on neuro prosthetics applications. The major goal of this project is to develop a system that allows disabled people or ALS (Amyotrophic Lateral Sclerosis) to communicate with other people.

In our system we have implemented a BCI system using a non-invasive type of EEG sensor, known as Neurosky Mindwave Mobile. This is a single channel electrode which has a ThinkGear chip inside and uses a TGAM module (ThinkGear Application specific IC) that measures and analyses the EEG signals. It detects raw brainwaves and outputs processed EEG signals such as eSense parameters like Attention, Meditation, Blink Strength values along with Alpha, Beta, Gamma, Theta and Delta waves. These brain waves are further used to control and actuate a moving robotic gripper. These parameters are parsed using Bluetooth communication.

The initial stages of collecting and analysing the brain waves was done using the BCI platform known as OpenVibe. The processed data from this platform was further collected in Matlab to reduce the noise to a greater extent. The second stage of the system aims at controlling the above mentioned application. This is done by establishing a Telnet communication using the ThinkGear socket protocol. The eSense values are thus transmitted to the microcontroller. Thus the different movements of the moving robotic gripper are controlled which aims at picking and placing an object.

TITLE	Design and development of real time glucose drips monitoring and control system.	
SL.NO	USN NO.	NAME
1	1MS13TE012	DISHA K
2	1MS13TE022	MAHALAXMI KAVADIKERI
3	1MS13TE032	PRAJWAL R HEGDE
INTERNAL MENTOR	INTERNAL MENTOR :Dr. K NATRAJAN	

ABSTRACT

For good patient care in hospitals, assessment and management of patient's fluid and electrolyte need is the most fundamental thing required. All most in all hospitals, an assist/nurse is responsible for monitoring the IV fluid level continuously. But unfortunately during most of the time, the observer may forget to change the saline bottle at correct time due to their busy schedule. This may lead to several problems to the patients such as backflow of blood, blood loss etc. To overcome this critical situation, a low cost Wifi based automatic alerting, monitoring and controlling device is proposed where a load cell is used to monitor the weight of the IV fluid continuously and a certain threshold is set. Once the load value goes below this threshold an alert message is sent using GUI. A laser and LDR (light dependant resistor) setup is used to design a drip sensor. When the laser beam is broken due to a droplet, the intensity will vary and this intensity variation changes the output voltage level and this is used to detect the droplets. Two threshold values are set for the volume of the leftover IV fluid where in alert messages are sent to the nurse/assist. A stepper motor is used to automatically control the flow rate of the drips.

TITLE	Gait Analysis of Upper Limb for Creation of Music	
SL.NO	USN NO.	NAME
1	1MS13TE001	Abhilash .V .Varier
2	1MS13TE017	Harish Jayanth V
3	1MS13TE028	Nandita K Kumar
INTERNAL MENTOR	INTERNAL MENTOR :Dr.ViswanathTalasila	
ABSTRACT		
<p>The music industry is changing rapidly with an influx of new electronic instruments. The advancement in microcontroller technology and availability of inexpensive yet sufficiently accurate sensors have given way to innovation in all walks of life, even in music. In this context, we are combining Inertial Measurement Units (IMU) with Musical Instrument Digital Interface (MIDI) standard to make a glove that can capture hand gestures and translate them to sound through a MIDI instrument. This would enhance the overall audio-visual experience of a performance by making it more appealing to the audience.</p> <p>The main idea of this project is to observe gestures made with fingers and play sounds corresponding to them in a musical fashion. The IMUs are used as directional transducers to sense the movement of fingers. One accelerometer-gyroscope combination (MPU6050) is placed on each finger to measure the acceleration in the three axes and the rotation about the x-axis. The sensors are connected to the microcontroller through an I2C multiplexer. The microcontroller unit collects data periodically in a round robin fashion from the five sensor nodes and performs all motion related processing. The microcontroller then communicates through Wi-Fi with a program running on a computer, which plays sounds in real-time.</p> <p>The glove can be used to play music in the following modes:</p> <ul style="list-style-type: none">• Play Individual Notes• Play Chords		

TITLE	ZUPT Algorithm Using Complimentary Filter as a Correction Technique in Gait Analysis	
SL.NO	USN NO.	NAME
1	1MS13TE040	Rahul P Suresh
INTERNAL MENTOR	INTERNAL MENTOR :Dr.ViswanathTalasila	
ABSTRACT		
<p>Gait analysis is the measurement of human motions and it requires accurate measurements. This project describes how the ZUPT algorithm can be used as a correction technique to improve the accuracy of these measurements. The aim of this work is to develop a device that can sense the angle and the acceleration of a moving object and can give a clear indication when the body is stationary i.e. the body is back to its rest position. To measure the acceleration and other gaits we make use of an Inertial Measurement Unit (IMU) referred to as GY-80. The Dead Reckoning Approach to ZUPT is applied only when the IMU is stationary and the velocity at the intervals are kept are zero. This lead to growth of error in-between stop conditions. Another approach is the Kalman Approach which uses prediction and update modes to when the GNS S signal is available and in its absence. But in medical instrumentation we require accurate values. Hence the need of a new ZUPT algorithm arises. The ZUPT technique here uses an Inertial Navigation System (INS) which uses a computer to process navigation computations, an inertial measurement unit (IMU) containing accelerometers and gyroscopes orthogonally mounted on three axis. Accurate determination of angle and acceleration is required in many fields such as medical instrumentation.</p>		

TITLE	Implementation of RFID Technology for controlling city traffic and Identification of Vehicle Emission	
SL.NO	USN NO.	NAME
1	1MS13TE054	SUBRAHMANYA SHANBHAG
2	1MS13TE055	SUMANTA HEGDE
3	1MS13TE046	SACHIN J
4	1MS13TE014	ESHWAR R
INTERNAL MENTOR	Internal Mentor : Kusuma SM	
ABSTRACT		
<p>Traffic congestion and vehicle emission disorder in the cities is a common scenario in most of the traffic junction points that leads to disturbances, i.e., i) increased air pollution, ii) prioritized vehicle movements like ambulances, iii) delay in toll collections, etc. Here the challenge is to identify the traffic density, vehicle emission quantity and road clearance to the prioritized vehicle to move in the required direction using automated traffic signal control. Based on the above challenges the main objectives of the project is to design a framework for a dynamic and automatic traffic light control system for the clearance of critical vehicles (like ambulance, etc) using RFID technology and develop a prototype system using sensors and embedded computing devices. To develop a mobile application for the inspection and notification of the data received from the Radio frequency identification (RFID) based embedded system attached to the vehicle to collect and transmit emission information. This application is also extended to collect the toll charges automatically at a particular junction point. Prototype of the system is developed to demonstrate the working principles mentioned in the proposed model and verified for all the functionalities.</p>		

TITLE	IOT-RFID Based Traffic Control System	
SL.NO	USN NO.	NAME
1	1MS13TE002	AISHWARYA CHANDRU
2	1MS13TE013	DIVYA NAGREK
3	1MS13TE037	PRIYANKA R
4	1MS13TE044	ROSHAN PATEL
INTERNAL MENTOR	Internal Mentor : S J Krishna Prasad	
ABSTRACT		
<p>This work investigates development of traffic light control and management prototype for Internet of Things (IoT) application. A prototype of traffic light control has been proposed and developed to assist decision making of traffic police officers. The system developed is equipped with technique to capture the traffic congestion level of each road at a specific intersection based RFID and ARM microcontroller modules. Main objective is to tune the synchronization and timing of traffic lights based on traffic profile and to transmit this information to the cell phone of traffic monitoring authority. This information will also be shared among the neighbors concurrently so as to tune decision making at adjacent junctions as well. Additional features in the system are that, it has ability to monitor vehicle location on the highways and also to identify free lay-by area for parking purposes. The prototype has been developed/ tested successfully and is quite robust under all operating conditions.</p> <p>Index Terms—Internet of things, RFID, traffic light control, traffic management, IR sensors</p>		

TITLE	Hand Gesture Controlled Robotic Vehicle	
SL.NO	USN NO.	NAME
1	1MS14TE403	KARTHIK R
2	1MS14TE404	MANJULA K
3	1MS14TE411	VIJAY KUMAR G.M
INTERNAL MENTOR	Internal Mentor : Venu K.N	
ABSTRACT		
<p>A hardware and software based integrated system is developed for hand gesture based surveillance robot. The proposed system is a non-invasive technique and software part of the system uses gesture based image processing technique. The hardware part is developed based on AVR microcontroller platform. The captured image of hand is segmented and its contour is determined. The convexity defects are computed to detect the number of fingers used by the subject. The number of fingers directs the path to robot that is to be followed. The camera placed on the robot capture the images of its surrounding wherever it travels and send it back to the PC for monitoring. In this way, it can be used as a surveillance system. The system can be directly applied to defence grounds for detection of enemy, for spying purpose where human reach is avoided or not recommended. This unit can be used for overcoming physical handicaps by helping in development of gesture based wheel chairs, for control of home devices and appliances for persons with physical handicaps or elderly users with impaired mobility.</p>		

TITLE	Performance Improvement of QPSK Modulator in AWGN-Implemented in FPGA	
SL.NO	USN NO.	NAME
1	1MS13TE029	NARAYANAN S
INTERNAL MENTOR	Internal Mentor : Umeshraddy	
ABSTRACT		
<p>The project aims at presenting a method to design a QPSK system with performance improvement in an AWGN environment, and implement the same using a field programmable device (FPGA). To emulate the AWGN environment, we decided to use a method that largely resembles the Box-Muller method that generates two independent random variables with a normal distribution. Raised cosine filtering is used for the smoothening of signals. To illustrate the improvement in performance that FEC codes could provide, we use (2, 1, 7) convolutional encoding after pulse shaping, then introduce the noise, and Viterbi decoding is used to correct the errors. The entire system has been simulated using ModelSim PE Student Edition 10.4a and implemented using Xilinx XC6SLX45 Spartan 6 FPGA with the aid of ChipScope Pro software. QPSK modulator designed in FPGA is more preferable than when designed using custom ASIC technology, for FPGA designs are reprogrammable and reconfigurable, and the functionality can be easily changed or improved in the product development process. QPSK modulation scheme is commonly used in wireless communication systems because of its ability to transmit twice the data rate for a given bandwidth. A single chip QPSK modem is of great interest in Wireless Communications, High frequency Space Communications and Set top boxes. Hence the reason for selecting the project.</p>		

TITLE	Prototype of electronic hardware for autonomous vehicle	
SL.NO	USN NO.	NAME
1	1MS14TE401	Chetan Joshi
2	1MS14TE408	Usha
3	1MS14TE400	Chandan K
4	1MS14TE405	Punith Kumar
INTERNAL MENTOR	Internal Mentor : S G Shiva Prasad Yadav	

ABSTRACT

In this today's world the more and more accident are occurring due to human negligence. So to avoid these incidents we have built an automatic robot which is called SMART AUONOMOUS VEHICLE. This robot allows moving the vehicle fully automatically. This vehicle is divided into three types. One is Security purpose, second is accident prevention system and lastly accident reporting system. The heart of the system is LPC2148 ARM CONTROLLER. GPS and GSM is included to locate the position of vehicle and sending information about condition of vehicle RFID is used for security purpose, Ultrasonic and IR sensor is used to detect the any obstacle occurring in front or adjacent of the vehicle respectively. Alcoholic sensor is used to detect any alcoholic content in driver's mouth, if it detects, the message will be sent to owner or police ensuring that driver won't run way, the door will be locked and engine will get off . Other than that for basic purpose humidity, temperature, LDR is used for advancement of the vehicle. Mems sensor is used when accident occurs, it will detect and message will be sent to hospital or police or particular vehicle owners.

TITLE	IOT based Smart Energy Management and Monitoring System	
SL.NO	USN NO.	NAME
1	1MS13TE003	AISHWARYA SUDEEP
2	1MS13TE020	KEERTHANA C S
3	1MS13TE053	KSHITIJ S R
4	1MS13TE059	ULLASH SRIVASTAVA
INTERNAL MENTOR	Internal Mentor : HR Ramya	

ABSTRACT

- The world is facing the biggest problem of power because the production of power is less than the demand power of consumer side. Power is one which needs to be monitored and controlled. Power consumed by various appliances is monitored through an ARM based controller where the current , voltage and hence the power consumed by different devices is measured.
- The web server is designed using Hyper Text Transfer Protocol for communication between client and server. Sometimes we forget to switch off lights. So we are using sensors like gas and IR sensors .The designed system enables client to monitor and control the appliances at home from anywhere using the IOT thereby reducing the wastage of energy.
- Sometimes to manage the available power the power is cut for particular area i.e not even a single bulb can work. Instead we can use available power in such a way that only low power devices like lights, Fans, which are primary needs should be allowed and high power devices like heater, A.C. etc should be off for that particular period. To achieve this, system can be created which will differentiate between high power and low power devices at every node and allow only low power devices to be ON for a particular period.

TITLE	Epilepsy Detection in EEG Signals Using Discrete Wavelet Transforms and Neural Networks	
SL.NO	USN NO.	NAME
1	1MS13TE065	BHAVANA RADHAKRISHNAN
2	1MS13TE010	CHAITHRASHREE K
3	1MS13TE048	SANJANA GIRIDHAR
4	1MS13TE045	SHREYANK SHANKAR
INTERNAL MENTOR	Internal Mentor : Nisha S.L	
ABSTRACT		
<p>Electroencephalography (EEG) is a record of the electric signal generated by the action of brain cells, that is, the time course of extracellular field potentials generated by their synchronous action. EEG are widely used in medicine for diagnostic and analysis of several conditions. In this paper, we present a system based on neural networks and wavelet analysis, able to identify epilepsy seizures using EEG as inputs. This work is part of a research looking for novel models able to obtain classification rates better than the state-of-the-art, for the identification of normal and epileptic patients using EEG. Here we present results using a Discrete Wavelet Transform (DWT) for feature extraction and Feed-Forward Artificial Neural Networks (FF-ANN) for classification. By using the benchmark database high accuracy of 95% was obtained.</p>		

TITLE	Hand Gesture Recognition for Deaf and Dumb	
SL.NO	USN NO.	NAME
1	1MS13TE026	MEGHANA DEEPAK
2	1MS13TE030	NIKSHITHA R.K
3	1MS13TE036	PRERNA P
4	1MS13TE062	YASHGANGWAR
INTERNAL MENTOR	Internal Mentor : Shiv Prasad Yadav	
ABSTRACT		

There are around 70 million people who are deaf and dumb. A dumb person communicates with other people using their motion of the hand and expressions. This system will help him to express their thoughts as a more convenient way. Sign language as a kind of gestures which helps the dumb individual to communicate with normal people. In this research, flex sensor and accelerometer sensors based hand glove is designed to recognize the pre defined hand gestures. The glove is internally equipped with flex sensors and accelerometer. For each particular gesture, as the flex sensor bends some amount, its resistance gets varied and accelerometer measures the motion of hand. The flex sensor produces analog output values that are converted into digital values using an ADC converter. The processing of these hand gestures is done in Redbear Lab CC3200 Wifi micro. Microcontroller sends this digital signal to the serial monitor. The output of the system is presented with the help of the speaker. Hence the communication between a dumb and normal person is made easier.

TITLE	IOT Enabled Plantation Management System	
SL.NO	USN NO.	NAME
1	1MS13TE031	P ASHWINI
2	1MS13TE049	SAVITHA J
3	1MS13TE052	SOUMYA ANTARAGANGI
INTERNAL MENTOR	Internal Mentor : Arvind Kumar G,Nisha SL	
ABSTRACT		
<p>Part of the whole drawback of gardening is watching your botanical efforts slowly bloom. Apart from monitoring it also actuates water flow keeping the soil parameters and eco-space of plant optimal. Here along with this monitoring and actuation parameters there is also a provision provided to represent the feelings of plants through a smiley display providing added information to people who are unaware of technical parameters.</p> <ul style="list-style-type: none">• The system supports water management decision, used for monitoring the whole system with CC3200 module.• The system continuously monitors the all the parameters to develop plant for optimal condition and provide accurate amount of water required to the plant (crop).• The system checks the soil moisture, temperature, LDR and humidity of soil to retain the nutrient composition of the soil managed for proper growth of plant.• After checking all the parameters, the plant health status is displayed on 8*8 LED display.• The sensor readings are continually uploaded to AT&T cloud service and made available for access from any web browser using internet.• It is possible to view current sensor reading value both visually and numerically		

TITLE	Industrial Automation Using IOT	
SL.NO	USN NO.	NAME
1	1MS13TE056	SUTEJ KULKARNI
INTERNAL MENTOR	Internal Mentor : Mr Arvind Kumar G	
ABSTRACT		
<p>IOT or internet of things is a technology that deals with bringing control of physical devices over the internet. The Internet of things (IoT) is the internetworking of physical devices, vehicles, buildings, and other items- embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-to-machine communications and covers a variety of protocols, domains, and applications. Here we propose efficient industry automation system that allows user to efficiently control industry appliances/machines over the internet. For demonstration of this system we use 3 loads as industrial appliances or machines and a motor to demonstrate as an industrial motor. Our system uses an Avr family microcontroller for processing all user commands. A wifi modem is used to connect to the internet and receive user commands. On sending commands through the internet they are first received by our wifi modem. The modem decodes information and passes it to the microcontroller for further processing. The microcontroller then switches loads and operates the motors as per receivers commands. Also it displays the system state on an LCD display. Relays are used which are directly connected to the appliances and their state is controlled through the internet using our microcontroller which is in turn is connected to our wifi module. Thus, we automate entire industry using online GUI for easy industry automation.</p>		

TITLE	Combat Net Radio Link For PBX using P89V51RD2	
SL.NO	USN NO.	NAME
1	1MS12TE029	Rahul M K
INTERNAL MENTOR	Internal Mentor : Shivprasad Yadav	
ABSTRACT		
<p>The RADIO-LANDLINE connectivity Gateway is a voice communication gateway between the radio networks (VHF, UHF, HF, Encrypted and frequency hopped radio) and landline network (TDM) through which we can establish voice calls between the above network. Since the hand-held radios can communicate with one and other only at same frequencies, through this gateway radios at any frequency the radio can communicate with other networks and vice-versa.</p> <p>The project deals with the design and implementation of this gateway using P89V51RD2, A 8051 based microcontroller.</p> <p>The design of the gateway is done using OrCad, and its implementation and analysis is carried out in Keil, Flash Magic is used to dump the code into the processor and Printed Circuit Board (PCB).The code is written in Micro C language.</p> <p>Finally the conclusion is made based on these results</p>		

TITLE	Voice Controlled Robot	
SL.NO	USN NO.	NAME
1	1MS12TE051	SOURAV GORAI
2	1MS14TE410	VENKATESH PADKI
3	1MS13TE063	ABHISHEK
INTERNAL MENTOR	Internal Mentor : Prof. Arvind Kumar G.	
ABSTRACT		
<p>The main goal of this project is to introduce “hearing sensor” and also the speech synthesis to the Mobile robot such that it is capable to interact with human through spoken natural language. The context of speech recognition refers to system where a person can speak via a microphone to a computer. The computer translates the spoken words into either text or commands to execute functions in the computer. The intelligent speech recognition system enables the robot to understand spoken instructions. The speech recognition system is trained in such a way that it recognizes defined commands and the designed robot will navigate based on the instruction through the speech commands. The complete system consists of three subsystems: the speech recognition system, a central controller, and the robot. The results prove that the proposed robot is capable of understanding the meaning of speech commands. They will act autonomously in a natural environment and will communicate in a natural way with those people they are supposed to support.</p>		

TITLE	Head Mounted Input Device Employing MEMS Sensors	
SL.NO	USN NO.	NAME
1	1MS13TE004	AKARSH
2	1MS13TE018	HITHESH M.G
3	1MS13TE019	K V R SAKETH
4	1MS13TE039	RAHUL MARIO J
INTERNAL MENTOR	Internal Mentor : S J Krishnaprasad	
ABSTRACT		
<p>A person who is handicapped with limbs has limitations. If this person is located at home, he needs assistance to execute day to day and Personal Computers (PC) related activities. To equip them for handling PC related tasks easily, A cost effective system is proposed and designed with wireless mouse and keyboard based system which can assist PC related activities of handicapped person.. This proposed and developed a system combines MEMS and eye blink sensors with wireless technologies; Developed system employs MEMS accelerometer to detect the user’s head movement in order to direct mouse position on the monitor. Clicks of mouse are generated by eye blinking sensors as a selection mechanism. The system has been demonstrated to perform mouse movements and clicking events successfully.. Our proposed and developed model is quite robust .It has also successfully executed mouse and keyboard related functions</p>		

TITLE	Wireless Home Security System	
SL.NO	USN NO.	NAME
1	1MS13TE006	AKSHAY HAREESH DESHPANDE
2	1MS13TE016	GAURAV S CHIPRE
3	1MS13TE064	ANOOKYA HARISH
4	1MS11TE045	BAISHAKHI SAHA
INTERNAL MENTOR	Internal Mentor :H.R. Ramya	
ABSTRACT		
<p>This project deals with Wireless Home Security System using IoT which is an innovative application developed to control home appliances remotely over the cloud. Home automation is the process of controlling home appliances using various control system techniques. The electrical and electronic appliances at home such as fan, lights, fire alarm, kitchen timer, etc., can be controlled using various control techniques. Various sensors such as a gas leak sensor, a fire sensor and a camera used for face detection, transmit information from inside a home over the cloud. Using a Wi-Fi module and Android, the owner or other members of the house can get information immediately about any intruder or mishaps that are likely to occur by accessing their respective email accounts or the application which will be installed beforehand. The face detection system can also be placed on the safe of the house in order to safeguard valuables. Thus this system ensures complete protection of the house. All components in the system are interfaced using ARM7 LPC2148 microcontroller. The sensed data is given to the microcontroller, processing is done according to the logic in the microcontroller and which then sends the relevant information to the owner via a Wi-Fi module.</p>		