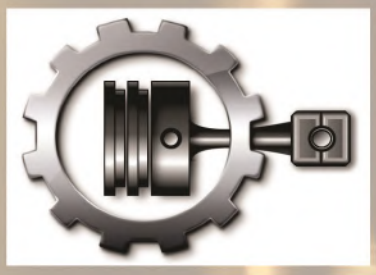
DEPARTMENT OF MECHANICAL ENGINEERING



THE CRANK

E-MAGAZINE | ANNUAL ISSUE - #3, AUGUST 2019

INSIDE THIS ISSUE

ST JOSEPH ENGINEERING COLLEGE

MANGALURU- 575 028

VISION

To be a value based Department committed to excellence in teaching and research, nurturing technically competent and socially responsible engineering professionals.

MISSION

- ◊ Providing state-of-the-art technical knowledge in Mechanical Engineering.
- ◊ Promoting research, education, and training in frontier areas of Mechanical Engineering.
- ◊ Facilitating faculty development through quality improvement programmes.
- ◊ Initiating collaboration with industries, research organizations and institutes for internship, joint research and consultancy.
- ◊ Instilling social and ethical values in students, staff and faculty through personality development programmes.
- ◊ Developing innovation in engineering and technology in order to provide beneficial service to the local community.

PROGRAMME OUTCOMES

Graduates of the Mechanical Engineering program are able to:

1. Apply the basic knowledge of mathematics, science, thermal, design, and manufacturing engineering.
2. Identify, formulate and solve mechanical engineering problems.
3. Design a mechanical system that meets desired specifications and requirements.
4. Design and conduct experiments, analyze and interpret data, and report results.
5. Apply modern engineering software tools and equipment to analyze mechanical engineering problems.
6. Apply engineering solutions in global and societal context.
7. Understand the impact of engineering on society and demonstrate awareness of contemporary issues.
8. Understand the professional and ethical responsibilities.
9. Work in a team of core competence or multidisciplinary teams.
10. Communicate effectively in both verbal and written forms.
11. Apply financial and project management skills in their professional ventures.

PROGRAMME SPECIFIC OUTCOMES

Graduates of the Mechanical Engineering program are able to:

1. Gain competence to face various competitive examinations and succeed in seeking best opportunities in the corporate world and higher studies.
2. Take up research programs on contemporary areas of mechanical engineering.

Director's Message

It gives me great pleasure to write down a message for the third publication of THE CRANK – 2019, an e-magazine of the Mechanical Engineering Department.

Success is not merely a destination, it is a journey. The last academic year has been a very successful journey for the Department of Mechanical Engineering. From being re-accredited by NBA to the powerful performances shown by the students and faculty members at various competitions at National Levels, there have been many achievements that have added to the glory of the Department. As you flip through the pages of this magazine, I am sure that you will be able to relive this successful journey with a smile on your face.

I congratulate the HOD, the staff and students of the Department in their endeavours.

All the best and happy reading!

Rev. Fr Wilfred P. D'souza
Director—SJEC

Assistant Director's Message

It is indeed a great pleasure to write this message for the readers of The Crank. The previous editions of this eMagazine were much appreciated and successful in capturing the spirit of the Department of Mechanical Engineering.

We are in the midst of upheavals in the Engineering Education sector. The cry for employable engineering graduates has reached the Parliament, with MP, Dr Shashi Tharoor urging the Government to bring in systemic changes to meet the Industry demands. The focus has to be on skills and adaptability. Engineering Programs will no longer be able to stick to mere fundamentals. They should impart modern skills for students to be employable. The capability to engage in self-learning, and the mindset to engage in life-long learning will be crucial as we go ahead. While processes, gadgets, and systems in our lives have become inescapably multidisciplinary, the educational system still appears to be cocooned in its own well. The demarcations between Departments and programs should blur and lead to a more synergistic environment of learning.

SJEC, as an institution, is working hard to increase its Industry connect and I am sure that the Department of Mechanical Engineering will take this mission forward. Not just incremental steps, but on a war footing.

I congratulate the Department for all their achievements this year and wish them success and productivity in the years to come.

Rev. Fr Rohith D'Costa
Assistant Director – SJEC

Principal's Message

Showcasing efforts and achievements are important in our journey towards excellence. We derive inspiration for our past victories and learn from challenges that were surmounted. The Department magazine is one such repertoire of experiences that will guide us as we march on. I am quite sure that this edition of the magazine will be successful in engaging the readers through thoughtful articles and also showcase the wonderful work carried out in the Department of Mechanical Engineering.

In this message, I also want to draw the attention of the readers on sustainable development and its relevance in today's context. It is important for students to be equipped with knowledge and skills to develop sustainable technology. The world needs innovations in Green technology that will decrease carbon emissions and reduce the impact of climate change for future generations. While sustainability goals at the macro levels are indeed influenced by the politics of the world and deviousness of policymakers; our actions at an individual level will go a long way in contributing to a better world. Our choices of green technology and our commitment towards a sustainable lifestyle will bring in a big difference. Do your bit!

I congratulate the editorial team of The Crank for yet another successful issue and also wish the Department well in all its activities.

Dr Rio D'Souza
Principal—SJEC

Hearty Welcome to Rev. Fr Alwyn Richard D'Souza

The Department of Mechanical Engineering welcomes Rev. Fr Alwyn Richard D'Souza to SJEC. Fr Alwyn took charge as the Assistant Director of SJEC on 22 May 2019.

Hailing from Shirthady, Fr Alwyn did his schooling from Naravi Church School and PU studies from Rosario PU College – Mangaluru. He furthered his studies at Sri Mahaveera College – Moodabidri. In 2009, he joined St Joseph Seminary - Jeppu and completed priestly formation and was ordained priest on 20 April 2017.

Fr Alwyn was then appointed as Assistant Parish Priest in Sacred Heart Church – Madanthyar, where he served for two years before joining SJEC.

The Department of Mechanical Engineering wishes Fr Alwyn D'Souza the very best in all his endeavours and looks forward to his leadership and support in the days to come.

HOD's Message

The future of Mechanical Engineering is spread across various emerging streams that hold many promises to make the future a better place to live in. Some of the promising streams that are the quintessential applications of the future of Mechanical Engineering are: nano-technology, biomechanics, automobiles and aviation, buildings of future and urban designing, robotics and automation. With the technological advancement and broadening of scope, the prospectus of Mechanical Engineering is expanding beyond the geographical boundaries. With the growing shift in paradigm, the new job avenues have been opened for the Mechanical Engineers, but with the new challenges.

The Department of Mechanical Engineering at SJEC has taken every step to empower the students with necessary knowledge, skill and the attitude demanded by the job providers. The associations, clubs and study groups have promoted the interest and engagement of students as well as teachers. These have also provided 'hands-on' team work experience, resulting in a very effective learning process that involves the so-called soft skills. Experiential learning through virtual labs, e-learning tools and technical training has encouraged the students for the deeper learning of engineering concepts. Students have shown noticeable achievements in academics, co-curricular activities and extra-curricular activities.

The faculties have been updating their knowledge base by attending seminars/workshops/conferences. Teaching staffs have been very active in research and have published research papers in reputed International / national journals / conferences. A good number of faculties are involved in research in engineering education and the Department is well-equipped to meet all the challenges and the requirements in the methodology of teaching. The issues of importance such as professional ethics, social responsibility, lifelong learning and support to incubation are also addressed in the Department. We are sure that our future generations of Mechanical Engineers will practice well in national settings and in global corporations.

The CRANK 2019, Department E-magazine highlights the activities and achievements of the Department in the last academic year 2018-19. I am sure that readers will be delighted to know the achievements of the Department. Congratulating the editorial team for their sincere efforts, I wish all readers a "Happy reading".

Department of Mechanical Engineering wholeheartedly extends gratitude to the Principal and the Management of SJEC for their excellent support to the Department at all spheres.

Dr Sudheer M
HOD & Head of Research—ME

Farewell to Dr Joseph Gonsalvis
Former Principal & Chief—R&D

One of the most distinguished academician and researcher in the Department of Mechanical Engineering, Dr Joseph Gonsalvis has bid farewell to the Institution in the month of May 2019. Dr Gonsalvis has served the Institution as Principal from 2007 to 2018. During his tenure at SJEC, Dr Gonsalvis was also a Professor in the Department of Mechanical Engineering. Post his retirement in 2018, Dr Gonsalvis was awarded the Professor Emeritus post and also took charge as Chief – Research and Development at SJEC.

A beloved Professor for all students in the Department, Dr Gonsalvis is a brilliant researcher and often spent considerable time with students, guiding their projects and encouraging them to pursue excellence. The Department of Mechanical Engineering is grateful to Dr Gonsalvis for his wonderful leadership and guidance.

The Department wishes Dr Joseph Gonsalvis all the very best in his future endeavours.

DEPARTMENT ACTIVITIES

QUICK STATS

STRENGTH—561

FACULTY—36

DOCTORATES—08

FEMALE STAFF—02

508 STUDENTS

FEMALE STUDENTS—16

PLACEMENTS—28 (Ongoing)

TECHNICAL STAFF—14

MOU'S—5

ORIENTATION PROGRAMME
SAEINDIA SJEC COLLEGIATE CLUB

July 09-13, 2018

The Department of Mechanical Engineering SAEINDIA SJEC Collegiate Club in association with Centre of Excellence in Aerospace and Defense (COEAD), Bengaluru organized a 5-day orientation programme for students of third and final year engineering disciplines.

Mr Ramesh, Advisor and Chief Trainer—COEAD, Mr Gautham, an expert in the field of 3D experience platform of Dassault Systems, Mr Prasanna Venkatesh, Technical expert in the field of Aerospace simulation, Mr Movin Furtado, Mr Taranisen, and Mr Debashish from COEAD, were the resource persons.

A total of 28 students from third and final year Mechanical and Electrical Engineering participated in the Workshop.

TALK—INDUSTY 4.0

July 27 2018

Prof. Iqbal Ahmed, Deputy Director, Training – Introduction and Collaboration, Acharya Institution, Bengaluru delivered a talk on INDUSTRY 4.0 on 27th July 2018.

Introducing Industry 4.0 to the audience, Prof. Iqbal spoke of Smart Factories where, using Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real-time both internally and across organizational services.

In his talk he also mentioned about four design principles in Industry 4.0. These principles support companies in identifying and implementing Industry 4.0 scenarios.

E-TIME 2018 - INTERNATIONAL CONFERENCE

August 10-11, 2018

The Department organized its First International Conference under the banner of eTIME-2018 Emerging Trends in Mechanical Engineering, on 10—11 August 2018. The conference was organized in association with AIP Conference Proceedings as Publishing Partner.

Four keynote addresses were presented by speakers from India and abroad. Details are mentioned below.

1. **A novel framework for Total Quality Management in Arab Manufacturing Firms**
   Dr S. Arunachalam from University of East London – UK.

2. **Why use Manual Assembly?**
   Dr John Miller, University of Hertfordshire – UK

3. **Passive Compression Device for Green Energy Applications**
   Dr Srisha Rao M V , Indian Institute of Science—Bengaluru, Karnataka.

4. **Ceramic and Advanced Materials for Emerging Applications in Mechanical Engineering**
   Dr C. D. Madhusoodana, Additional General Manager Bharat Heavy Electricals Ltd. – Bengaluru. Karnataka.

5. **A Conceptual Model to deploy lean sigma in UK Manufacturing**
   Dr S. Arunachalam
   University of East London – UK

APPLICATIONS OF FINITE ELEMENT METHOD IN MECHANICAL & CIVIL

January 07-11, 2019

The Department organized a 5-Day FDP on Applications of Finite Element Method in Mechanical & Civil Engineering. The details of topics covered on each day is mentioned below.

Day 1: Dr Purushothama Chippar

Topics Covered: What is CFD? Need for CFD, CFD Solver, Models of flow, governing equations, Steps involved in solution, C language, Initial & Boundary Conditions, Design Modeller, Meshing, Ansys Fluent Solver, Solution methods, Relaxation, convergence criteria: mass balance, energy balance, momentum balance. Examples: Water heater, Discrete Phase Model, Two Phase flow in an open domain, Multi Species flow model. UDF programming for Ansys- Fluent.

Day 2: Dr Kumar Gowda

Topics Covered: Contact mechanics, need for contact, challenges in contacts, Frictional Contact, Physical parameters to be considered while contact formulation, contact surface and target surface, contact compatibility, concept of convergence, Non-linear problems with linearization and analysis by Ansys, Formulation methods, Solvers, Types of contact, Parameters like Mesh statistics, Skewness, Jacobian ratio, smoothness. Introduction to vibration analysis, Modal Analysis, Multiple components, low cycle fatigue, running speed harmonics, Campbell diagram. Examples: Airfoil, dual spool engine, Flange and pipe wedge, Disc and blade etc.

Day 3: Dr Kumar Gowda

Topics Covered: Practical aspects of welded joints, boundary layer theory, Standard welding codes, Rotational equipment, Static equipment, Elastoplastic analysis, Heat transfer analysis, Methods for calculating weld stresses, Detailed finite element model (DFEM), Importance of weld stress prediction, structural hot spot stress method, fatigue fracture, Examples: static structural analysis of a steel adapter, column buckling, bolt retention, bolt pretention, buckling.

Day 4: Mr. Muttanna Bandal

Topics covered: Design, Law of equilibrium, law of compatibility, Factor of safety, Fatigue, FOS for designing a hanger in a public transport and a car, Ductility transition temperature, cyclic test analysis, root cause analysis, von misses theory, Infinite life design, Safe life design, Fail safe design, Damage tolerant design, Typical loads, Resonance, Automotive design. Static Analysis. Examples: Modelling plate with a hole, Bracket, etc.

Day 5: Mr Ganesh Patel

Topics Covered: FEM and Analysis of Aircraft Structures, Classical Approach, Experimental analysis, Numerical solution, FEA tools, FEM steps, 1D element, 2D element, Modelling Methods, Displacement function, Analysing 3D models, Rigid element, fasteners, spring and mass. Aircraft Basics: Main components, Aerodynamic loads, Aircraft structure, Inertia relief method, landing gear, Aircraft materials, Validation of FEM, Analysis using Mechanical APDL.

MODEL BASED DESIGN- A TRAINING

March 25-28, 2019

The Department of Mechanical Engineering in association with Master of Computer Application department organized a four days training program on Model Based Design using MATLAB to the internal faculties of St Joseph Engineering College, Mangaluru. The training session was held from 25 of March to 28 of March 2019 by the Expert trainers from MATH WORKS.

Resource Persons:

1. Mr Rahul Choudhary, Training Engineer, MathWorks India Pvt. Ltd.

2. Dr Dhruv Chandel, Educational Technical Evangelist, MathWorks India Pvt. Ltd.

Objective:

To build a custom course with our existing training offering which will introduce MBD to engineering faculty (and students) from a project based learning perspective

Title: System Modeling for Control Systems and Image Processing (using MATLAB and Simulink)

Customized course for Indian academic audience based on trends in industry

Learning Outcome:

Model-Based Design workflow including physical modeling, code generation, rapid prototyping, in-loop verification

Cases:

Design of Control System for DC motor.

Object Surveillance System.

Tools covered:

MATLAB, Simulink, Simscape, Stateflow, Control Systems Toolbox, Image Processing Toolbox, Computer Vision Systems Toolbox, Embedded Coder

Key Highlights:

Workflow based training (not toolbox specific) to Solve multi domain problems from system modeling perspective and demonstrate hardware connectivity.

TECHNOVA 2019 - PROJECT EXHIBITION

May 20, 2019

The project exhibition TECHNOVA 2019 was held on the Monday, 20th of May, 2019. The final year students of Mechanical Engineering had submitted 46 projects in various streams for the exhibition. The judges invited were from academics and industrial fields.

The judges were welcomed to the exhibition with a brief Introduction by Dr Binu K G, In-charge HOD, Department of Mechanical Engineering. The lower semester students of all Departments witnessed the exhibition and appreciated the student's effort. The students were given useful feedback during the interaction.

Name and Details of External Judge	Name and Details of Internal Judge
1. Mr. R K Rao Deputy General Manager ONGC - MRPL Contact details : 9480821837 email id: rkrao@omplindia.com	1. Dr Binu K G Assoc Professor binuk@sjec.ac.in 9739866947
2. Mr. Ramaprasad H Adjunct Faculty SJEC Contact details : 9448026588 email id: ramapra-sadh@sjec.ac.in	2. Dr Shreeranga Bhat Professor shreerangab@sjec.ac.in 9480047532
3. Mr Ashwin Sequeira Assistant Professor Department of Mechanical Engineering SDIT- Kenjar Contact details : 9886585818 email id : ashwin.sequeira@gmail.com	3. Dr Purushothama Chippar Professor purushothama@sjec.ac.in 9448071061
4. Mr K V Suresh Professor Department of Mechanical Engineering AIET, Moodabidre. Contact details : 9880496920 email id : kvs_a@yahoo.com	4. Dr Raju K Professor rajuk@sjec.ac.in 8123798293

The prize winners are as follows

FIRST PRIZE

Performance Study of Diesel Engine at Different Injection Timing Using Preheated Biodiesel

From left: Rohith K, Adarsh M P, Adithya Aithal B, Vybhav U Shetty & R.K Rao

SECOND PRIZE

Design and Fabrication of Automated Prosthetic Arm.

From Left: Savil Seldon Pinto , Lester Cleophas Dsouza, Kenny Pritish Solomon Pereira, Mohammed Al Tamash Sheikh, Rev. Fr Rohith D'Costa.

Innovative Project: Portable Hand Operated Wall Putty Applying Machine

From Left:

Samhan Ahmed, Aqib Mahamood Badimoole, Abdullah Shakir Munaz, Thushar, Attavara, Dr Rio D'Souza

INTERNSHIP OPPORTUNITIES FROM DEPARTMENT / COLLEGE

May 6-7, 2019

Dr Sudheer M highlighted the university notice details on internship at industry for the 6th Semester students on 6th and 7th May 2019. Dr Sudheer gave information on the internship opportunities at four different organizations through the Department. The complete details of the companies, duration and fees (if applicable) were presented to the students. Dr Sudheer also gave a feedback on internship done by the previous year students (2018-19).

ALOHA - FAREWELL PROGRAMME FOR CLASS OF 2019

May 23, 2019

The Department organized the farewell function Aloha-2019 on Thursday, 23 May 2019 at 2:30 pm in Bishop Aloysius Paul hall. The function was organized with the help of 3rd year and 2nd year Mechanical engineering students.

Dr Raju K, Professor at SJEC was the Chief Guest, Dr Purushothama Chippar, Professor, Mechanical Engineering Department was the Guest of Honour.

Mr Poornesh, Assistant Professor, Mechanical Engineering Department was the convener of the farewell function.

The MC Vernon Lobo continued the informal function which consisted video presentation, singing, dance, attractive games and Baila.

DEMONSTRATION OF REAL ARC WELDING SIMULATOR

June 13, 2019

A Real Arc Welding Simulator was demonstrated by Mr Sanjay Hubli, Regional Manager and Mr Manjunath – Engineer from Mogora Cosmic Pvt. Ltd Pune, in the Mechanical Workshop on 13 June 2019. The demonstration was conducted for staffs and students of Mechanical Engineering. The practical and theoretical operation of Simulator was shown and explained during demonstration.

The simulator works on real arc simulation for all the three welding processes namely SMAW, GMAW and GTAW. Simulator is very simple and easy to operate and very useful for the students to train in the beginning and at later stages to acquire the necessary skill of welding in terms of arc length, welding speed, angle X & Y with respect to the job. This simulator reduces the fear of usage, training cost and the time of training Staff and the students have greatly benefitted from the demonstration.

NBA EXPERT TEAM VISIT FOR RE-ACCREDITATION

March 22, 2019

The BE Mechanical Engineering programme along with the bachelors programme of CS, E&E and ECE have been re-accredited by National Board of Accreditation (NBA), New Delhi. The four programs were first accredited by NBA, in November 2013.

The NBA Expert Team had visited the college on 22 March 2019 and rigorously assessed various aspects at the institute level and within various departments. The infrastructure, facilities, faculty qualification and contribution, students performances, etc. were the evaluation criteria amongst many that has been assessed.

The expert team have appreciated the Infrastructure, Management, Faculty, Student Contributions and Outcome-Based Education (OBE) practices adopted in the college.

FACULTY ACHIEVEMENTS

Dr Shreeranga Bhat has been certified as **International Qualified Six Sigma Master Black Belt** from the Indian Statistical Institute (ISI), Bengaluru on 5th May 2018.

Mr Sushanth H G Secured **Topper 1%** in **Outcome Based Pedagogic Principles for Effective Teaching, a NPTEL** certification course conducted by IIT Kharagpur during Aug-Oct 2018.

Mr Jinu Mathew, has published a paper titled "**White light emission by energy transfer from areca nut husk extract loaded with carbon dots synthesized from the same extract**" in Journal of Luminescence. (Impact Factor 2.732).

Dr Sudheer M, Secured **Topper 5%** in **Effective Engineering Teaching in practice, a NPTEL** certification course conducted by IIT Madras during Jan-Feb 2019.

FACULTY INTERACTIONS WITH OUTSIDE WORLD

Dr Shreeranga Bhat evaluated the UG technical paper presentation under banner Jnana Sangama – 2018, A National Level Student Conference held on 16 May 2018 at Vivekananda College of Engineering & Technology, Puttur.

Dr Purushothama Chippar has participated as distinguished resource person and delivered a technical session in Two days FDP on **"Basic of CFD and Hands on Training using Ansys Fluent"** held at Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal from 8 to 9 June 2018.

Dr Shreeranga Bhat delivered talk on **NBA Mock Inspection** on 25 June 2018 at Vivekananda College of Engineering & Technology, Puttur.

Dr Sudheer M was the Chief Guest for the **"Metallons"** Inaugural program and delivered a Technical talk on **Application of Finite Element Method in Mechanical Engineering** on 7 September 2018 at Yenapoya Institute of Technology, Moodbidri.

Dr Purushothama Chippar has participated as distinguished resource person and delivered a technical session in Two days FDP on **"Training Programme on computational fluid dynamics for post graduate mathematics students using Ansys Fluent"** held at Christ university, Bengaluru from 30 November to 1 December 2018.

Dr Purushothama Chippar has participated as distinguished resource person and delivered a technical session in on **"Patent search, procedure and requirement of patent "** held at Srinivasa University , Mukka on 6 May 2019.

Dr Purushothama Chippar has participated as distinguished resource person and delivered a technical session on **"New age teaching techniques for Teachers "** held at Saint Aloysius Gonzaga School workshop on 27 May 2019.

FDP'S, WORKSHOPS & CONFERENCES ATTENDED

- Dr Sudheer M has participated as Session Chair in 8th International Conference on Emerging Trends in Engineering held at NMAMIT, NITTE during 14 - 15 May 2018.
- Dr Raju K, Mr Rudolf C D'Souza, Mr Neil Vaz, Mr John Paul Vas have attended the workshop on "New Model curriculum for First year BE/ B.Tech.- CBCS Detailed Syllabus (2018-19) as per Outcome – Based Education (OBE) format including Course Outcomes (CO) and Bloom's Taxonomy" under TEQIP-1.3 for the course FIRST YEAR under Mechanical Engineering Board held on 19 May 2018 at Sahyadri College of Engg; Management Mangaluru organized by Visvesvaraya Technological University, Belagavi.
- Dr Sudheer M has attended the training held for Tinkering Labs at Shubhodaya Vidyalaya on 08 and 09 June 2018.
- Mr Naresh R , Mr Vijay V S have participated in Two days FDP on "Basic of CFD and Hands on Training using Ansys Fluent" held at Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal from 8 to 9 June 2018.
- Mr Vijay V S has attended three days FDP on "TURBOMACHINES" held at Vivekananda College of Engineering ; Technology, Puttur D.K from 26 to 28 July 2018.
- Mr Canute Sherwin & Mr Naresh R have participated in the Three Day Management Programme (MDP) on "Agile Leadership in the Changing Business Environment" held on 26 to 28 July 2018 at SJEC, Vamanjoor.
- Dr James Valder, Dr Shreeranga Bhat, Dr Binu K G, Mr Rolvin S D'Silva, Mr Vijay V S, Mr John Paul Vas have participated in Feel Teacher learning and development intervention, organised by St Joseph Engineering College, and conducted by College of Leadership and HRD, Mangaluru from 2 to 4 July 2018, at Kalam Auditorium, St. Joseph engineering College, Vamanjoor, Mangaluru Karnataka.
- Mr Rolvin S D'Silva, Mr Poornesh M, Mr Sushanth H G have participated in a workshop on Information Discovery – Tips, Tools and Technologies organised by Library Advisory Committee in collaboration with IEI – SJEC on 14 July 2018.
- Dr Sudheer M, Mr Pavana Kumara B, Mr Poornesh M, Mr Ravikantha Prabhu, Mr Joel D'Mello, Mr Sushanth H G, Mr Noel D Shiri, Mr Canute Sherwin have participated in "Integra- 2018" a three days FDP on Course design management organized by Internal Quality Assurance Cell (IQAC), at St. Joseph Engineering College during 16 to 18 July 2018.
- Mr Vijay V S has attended 3 days Faculty Development Programme on "Turbomachines" held at Vivekananda College of Engineering ; Technology, Puttur D.K from 26 to 28 July 2018.
- Dr Purushothama Chippar has participated in IEEE workshop on Drive Innovation with IPR and Research held on 17 September 2018, at VTU Belagavi.
- Mr Vinoothan Kaliveer and Mr Neil Vaz participated in "VAIVIDYATHE" held on 9 October 2018 at Infosys Mangalore.
- Mr Rolvin S D'Silva has participated as supporting judging the projects at Indian Science ; Engineering Fair, Regional Fair Mangalore held on 03 November 2018 conducted by Pilikula Regional Science centre, Mangalore in association with science society of India.
- Dr Shreeranga Bhat has participated 3 days' workshop on "Reliability Theory ; Survival Analysis" by College of Leadership ; HRD Mangaluru held from 28 to 30 November 2018 at SQC ; OR unit, Indian Statistical Institute, Bengaluru.
- Dr Sudheer M, Mr Pavana Kumara B and Mr Poornesh M have participated in a course on Dynamic Response of Advanced Composites held at NITK, Suratkal during 10 to 14 December 2018 sponsored by GIAN, MHRD, GOI.

FDP'S, WORKSHOPS & CONFERENCES ATTENDED

- Mr Sushanth H G has successfully completed Introduction to Thermodynamics: Transferring Energy from Here to There an online non-credit course authorized by University of Michigan and offered through Coursera.
- Mr Sushanth H G was judge for the event Robo War was held on Thursday 25 April 2019 at Shree Devi Sambhram – 19, A National Level Technical and Cultural Fest.
- Mr Joel D Mello and Mr Binu K G was the judge for the Project Exhibition - 19 held on 08 May 2019 at Shree Devi Institute of Technology, Kenjar.
- Dr Sudheer M has successfully completed NPTEL Online Certification Course on Effective Engineering Teaching and Practice during Jan – Feb 2019 securing a score of 82%. He has secured topper 5% in the result.
- Mr Poornesh M attended NPTEL – AICTE faculty development programme on Effective Engineering Teaching Practice during Jan – Feb 2019 through online Certification with a consolidated score of 75%.
- Mr Sharun Mendonca has completed the online course Introduction to Thermodynamics: Transferring Energy from here to there an online non – credit course authorized by University of Michigan and offered through Coursera for which scholarship was approved.
- Mr Sharun Mendonca attended NPTEL – AICTE faculty development programme on Effective Engineering Teaching Practice during Jan – Feb 2019 through online Certification with a consolidated score of 53%.
- Mr Pavana Kumar B has completed the online course Effective Engineering Teaching in Practice with a consolidated score of 79% from NPTEL online certification.
- Mr Rahul Kumar has completed the online course Introduction to Materials Science and Engineering with a consolidated score of 72% from NPTEL online certification.
- Mr Jinu Mathew has completed the online course Introduction to Materials Science and Engineering with a consolidated score of 67% from NPTEL online certification.
- Mr John Paul Vas had attended NPTEL – AICTE faculty development programme on Six Sigma during Jan – April 2019 through online Certification with a consolidated score of 74%.
- Ms Ramya M attended NPTEL – AICTE faculty development programme on Effective Engineering Teaching in Practice during Jan – Feb 2019 through online Certification with a consolidated score of 76%.
- Mr Ramya M has completed the online course Effective Engineering Teaching in Practice with a consolidated score of 76% from NPTEL online certification.
- Mr Akshay N H has completed the online course Product Design and Development with a consolidated score of 79% from NPTEL online certification.
- Mr Canute Sherwin has completed the online course Manufacturing Guidelines for Product Design with a consolidated score of 80% from NPTEL online certification.
- Mr Vijay V S has attended AICTE sponsored 3 days Faculty Development for Student Induction held from 14th – 16th May 2019 at Mangalore Institute of Technology and Engineering Moodabidri
- Mr Swaraj Lewis has completed the requirements of Customized Course at MathWorks Training Services from 25th March 2019 to 28th March 2019.

FDP'S, WORKSHOPS & CONFERENCES ATTENDED

- Mr Swaraj Lewis has completed the online course Inspection and Quality Control in Manufacturing with a consolidated score of 72% from NPTEL online certification.
- Dr Purushotham Chippar has successfully conducted New Age Teaching Techniques for teachers on 27/05/2019 at St Aloysius Gonzaga School, Kodialbail, Mangalore.
- Mr Ravikantha Prabhu has completed the online course Introduction to Research with a consolidated score of 75% from NPTEL online certification.
- Dr Shreeranga Bhat was the judge for Janna Sangama – 2019, A National Level Student Conference on 11th May 2019 organised by Vivekananda College of Engineering and Technology, Puttur.
- Dr Shreeranga Bhat has successfully conducted New Age Teaching Techniques for teachers on 27/05/2019 at St Aloysius Gonzaga School, Kodialbail, Mangalore.
- Dr Binu K G has successfully completed IUCEE International Engineering Educator Certification Program with Certificate of Distinction from July 2018 – January 2019.
- Dr Binu K G has successfully completed the programme Orientation to HRD and Leadership, 12 through 15 Jan 2019 and Facilitator Certification in HRD, 16 through 21 Jan 2019 with Profile Grade of Excellent by CHLRD FEEL Participant's Profile Certificate of Cumulative Assessment of Competencies.
- Mr Vijay V S attended the AICTE sponsored "7 Days FDP on Student Induction Program" from 18th to 24th June 2019 at Sahyadri College of Engineering & Management Mangaluru.
- Mr Nithesh D Nayak & Mr Santhosh H attended One Week Residential Faculty Development Program, SEAT for Rural India held from 29th June to 6th July 2019 at the Sri. Yogi Narayana Mutt. Kaiwara. Chintamani Taluk, Chikkaballapur District, Karnataka.
- Mr Neil Vaz conducted three days program on Learning and Development Intervention on Leadership held on 15th to 17th of July 2019 at Youth Tech. Mysuru.
- Mr Sushanth Gowda & Mr Joel D'Mello attended three days workshop on Industrial Automation and Applications of IOT held from July 25th to 27th, 2019 at Srinivas Institute of Technology, Mangaluru.
- Dr Shreeranga Bhat, Dr Binu K G, Mr Ravikantha Prabhu have participated the Six International Conference on Transformations is Engineering Education (ICTIEE - 2019) as a Delegate on 7 and 8 January 2019 at Malla Reddy Engineering College, Hyderabad, Telangana, India.
- Mr Poornesh M has participated in Feel Teacher learning and development intervention, organised by St Joseph Engineering College, and conducted by college for leadership and HRD, Mangaluru from 22 to 24 January 2019, at Kalam Auditorium, St. Joseph engineering College, Vamanjoor, Mangaluru Karnataka.

FACULTY BLOGS

COMPTER AIDED ENGINERING DRAWING

By Christopher Cutinha
Log on to ...
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THERMAL ENGINEERING

By Sushanth, Rolvin, Ramya and Sharun
Log on to ...
http://sushanthhgnotes.blogspot.in or
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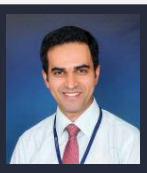
FDP'S, WORKSHOPS & CONFERENCES ATTENDED

- Dr James Valder, Dr Sudheer M, Mr Canute Sherwin, Mr Swaraj D Lewis, Mr Joel D'Mello have participated in FDP on "Application of Finite Elements Method in Mechanical and Civil Engineering" in collaboration with Kshipra Simulating Pvt Ltd held on 7 to 11 January 2019.
- Dr Shreeranga Bhat, Dr Binu K G, Mr Joel D'Mello, Mr Rudolf D'Souza, Mr Alister D'Souza, Mr Neil Vaz, Mr Sharun Mendonca, Mr Ravikantha Prabhu, Mr John Paul Vas, Mr Rolvin D'Silva have participated in the four-day learning and development intervention, Orientation to Human Resource Development and Leadership from 12 through 15 January 2019 which is a Foundation Course for postgraduate programme, Master Facilitator in Leadership and HRD. And also participated in the contact programme of six days for the Facilitator Certification in HRD, which is also the first semester of Master Facilitator in Leadership and HRD (Primer) from 16 through 21 January 2019.
- Mr Rudolf D'Souza participated in the 5- Day Enhancement Program for mentors, teachers and counselors on "Helping our students get through college" between 21 and 25 of January 2019 conducted at Global Academy of technology in association with Visvesvaraya Technological University, Belagavi and NIMHANS, Bengaluru.
- Mr Rolvin D'Silva has participated in AICTE stakeholder workshop on "Approval Process 2019-20" held at Anna University, Chennai on 31 January 2019.
- Mr Canute Sherwin from the Department of Mechanical Engineering has participated in the Faculty Development Refresher Programme on "New Age Skill for Excellence in teaching" conducted by Mr Praveen Kamath, General Manager ; head HR-Technology Practice Units, Wipro Ltd. Held on 16 February 2019 at SJEC, Vamanjoor.
- Dr Shreeranga Bhat and Mr Ravikantha Prabhu have attended the Orientation Programme for aspiring Autonomous Colleges 19 February 2019 at Krishnappa Memorial Hall, National Law School of India University, Bangalore organised by UGC – SWRO, Bangalore.
- Dr James Valder, Mr Sharun Mendonca, Mr Rolvin D'Silva and Mr Ravikantha Prabhu, Mr Chiranth B P have participated in "Two-day National Workshop on Intellectual Property Rights (IPR)" held a t SJEC, Mangaluru on 21 and 22 February 2019. This workshop is organised by SJEC, in association with Karnataka State Council for Science and Technology, Indian Institute of Science Campus, Bengaluru Cell for IPR Promotion and Management (CIPAM) ; Department of Industrial Policy ; Promotion, Ministry of Commerce ; Industry, Govt. of India.
- Mr Chiranth, Mr Sushanth, Mr Ravikanth Prabhu, Mr Vinoothan Kaliveer, Mr Yathish K and Mr Pavan Kumar have attended IUCEE International Engineering Educator Certification Program (IIEECP) Note to Phase I Workshop held at SJEC on April 8 to 10 2019.

INTERNATIONAL ENGINEERING EDUCATORS CERTIFICATION—IIEECP




In the changing landscape of Engineering Education, mandating the teachers' certification is gaining popular voice. With AICTE also lending voice to the idea, engineering institutions are looking at options to get their teachers certified. At SJEC, its visionary leadership has given the Institution an early start to the certification process through its association with IUCEE (Indo Universal Collaboration for Engineering Education). Inspired by the Effective Teaching workshops offered by Dr Richard Felder and Dr Rebecca Brent of the USA as well as the Teacher Certification Course of IGIP (International Society for Engineering Pedagogy) Austria, IUCEE has designed a certification program. This IUCEE International Engineering Educators Certification Program (IIEECP) is offered in a blended format, including face-to-face sessions, as well as asynchronous on- line modules coupled with regular synchronous on-line sessions. It has been piloted with partial support from Microsoft in 2015-16 and is now offered for a fee to cover expenses. It addresses the need for teaching skills and the certification of teaching skills. CII (Confederation of Indian Industries) has also endorsed this program as part of the CII Higher Education Mentorship Program.

From the Mechanical Engineering Department, four faculty have completed their IIEECP certification. Six more faculty from the Department have completed the Phase-1 and are set to commence their Phase-2. The certification process is one of the many initiatives towards transforming the teaching learning practices of the Institution from the traditional system to a student-centric inductive learning environment.

FACULTY PUBLICATIONS

INTERNATIONAL JOURNAL PUBLICATIONS

- Sudheer Mudradi, "Dry Sliding Wear Behavior of Cast Iron Powder Filled Epoxy Composites", AIP Conference Proceedings 2080, 020020 (2019); https://doi.org/10.1063/1.5092903. Published Online: 08 March 2019.
- Joel D'Mello, Alister G. D'Souza, Sushanth H. Gowda, and Denis Pinto. "Experimental investigation of compression, flexural strength and damping behaviour of granite particulate epoxy matrix composite". AIP Conference Proceedings 2080, 020012 (2019); https://doi.org/10.1063/1.5092895 Published Online: 08 March 2019.
- Pavana Kumara B, Shreeranga Bhat, and Karthik Madhyastha. "A study on wear properties of SWCNT reinforced polymer nanocomposite**".** AIP Conference Proceedings 2080, 020013 (2019); https://doi.org/10.1063/1.5092896 Published Online: 08 March 2019.
- Poornesh M, Chaithra S. V, Akash, Akash Ulvekar, Abhiram, Joy Sanjay, and Advaith. "Study of tribological properties of Al 7079 alloy reinforced with Agro waste particles". AIP Conference Proceedings 2080, 020015 (2019); https://doi.org/10.1063/1.5092898 Published Online: 08 March 2019.
- Ravikantha Prabhu, Sharun Mendonca, Rudolf D'Souza, John Paul Vas, and Thirumaleshwara Bhat. Application of Taguchi techniques to study the effect of alkaline treatment and fiber length on mechanical properties of short bamboo fiber reinforced epoxy composites. AIP Conference Proceedings 2080, 020019 (2019); https://doi.org/10.1063/1.5092902. Published Online: 08 March 2019.
- Rolvin D'Silva, Naveen Fernandes, Melroy Menezes, Princstan D'Souza, Vellan Pinto, Vinoothan Kaliveer, Binu K. Gopalakrishna, and Thirumaleshwara Bhat. "Effect of TiO2 nanoparticle concentration in Pongamia Pinnata methyl ester on performance and emission characteristics of CI engine". AIP Conference Proceedings 2080, 030006 (2019); https://doi.org/10.1063/1.5092909 Published Online: 08 March 2019.
- Vinoothan Kaliveer, Prajwal Basrithaya, Nithesh, Princeston D'Almeida, Pavan Kumar, and Rolvin D'Silva. "Effect of magnetite Nanoadditive in waste cooking oil methyl ester on the performance and emission characteristics of CI engine". AIP Conference Proceedings 2080, 030009 (2019); https://doi.org/10.1063/1.5092912 Published Online: 08 March 2019.
- Sushanth H. Gowda, Joel Dmello, Pavana Kumara B., and K. Raju. "Optimization of oil extraction from vateria indica seeds by solvent extraction process using response surface method". AIP Conference Proceedings 2080, 030011 (2019); https://doi.org/10.1063/1.5092914 Published Online: 08 March 2019.
- John Paul Vas, Rudolf Charles D'Souza, Ravikantha Prabhu, and Sharun Mendonca. "Adsorption based solar refrigeration system". AIP Conference Proceedings 2080, 030014 (2019); https://doi.org/10.1063/1.5092917 Published Online: 08 March 2019.
- Yathish Kumar, Arbaz Khader, Allen Clinton, Sheethal S. Kuchoor, Roland L. Tauro, Ashwin Shetty, Vinoothan Kaliveer, Neil Vaz, and Binu K. Gopalakrishna. "Design and fabrication of a hovering multipurpose agro carrier". AIP Conference Proceedings 2080, 040009 (2019); https://doi.org/10.1063/1.5092927 Published Online: 08 March 2019.
- Duane Clive Gonsalves, Ashley Glen D'Souza, Gavin Mark Vas, Karthik Madhyastha, Ramya M, and Alister Gleason D'Souza. "Design and analysis of an open circuit subsonic wind tunnel". AIP Conference Proceedings 2080, 040005 (2019); https://doi.org/10.1063/1.5092923 Published Online: 08 March 2019.
- Yathish Kumar, Royston S. Louis, Danish D'Souza, Shelton Floyd, Emil B. Varghese, and Binu K. Gopalakrishna. "Design and fabrication of automatic arecanut processing unit". AIP Conference Proceedings 2080, 040010 (2019); https://doi.org/10.1063/1.5092928 Published Online: 08 March 2019.

- ◊ Noel Deepak Shiri, Myriam Shankar Krafft, and Wolfram Thurm. "Plastic lumber product development using commingled waste plastics". AIP Conference Proceedings 2080, 050007 (2019); https://doi.org/10.1063/1.5092935 Published Online: 08 March 2019.
- ◊ Ajay Noronha**,** Shreeranga Bhat, and Suma Bhat. "Lean-TRIZ - A new philosophy in service sector organization and the readiness factors influencing its implementation**".** AIP Conference Proceedings 2080, 060006 (2019); https://doi.org/10.1063/1.5092941 Published Online: 08 March 2019.

- ◊ Ananth Krishna Bhat, Neil Vaz, Yathish Kumar, Rolvin D'Silva, Pavan Kumar, and Binu K. G. "Comparative study of journal bearing performance with ferrofluid and MR fluid as lubricant". AIP Conference Proceedings 2080, 040008 (2019); https://doi.org/10.1063/1.5092926 Published Online: 08 March 2019.

- ◊ Dr. Purushothama Chippar & Mr. Swaraj D lewis "Numerical investigation of hydrogen absorption in a stackable metal hydride reactor utilizing compartmentalization", International Journal of Hydrogen Energy, 43(16), 2018, pp.8007-8017.

- ◊ Swaraj D. Lewis and Purushothama Chippar, "Simulation Study and Design Optimization of Helical Coil Heat Exchanger in Metal Hydride Reactor – Part I. Hydrogen Absorption" Springer Proceedings in Mathematics and Statistics ISSN: 2194-1009.

- ◊ Swaraj D. Lewis and Purushothama Chippar," Simulation Study and Design Optimization of Helical Coil Heat Exchanger in Metal Hydride Reactor – Part II. Hydrogen desorption" Springer Proceedings in Mathematics and Statistics. ISSN: 2194-1009.

- ◊ K. Raju, K.C. Sanjay, Madhusudhan. K, K. V. Suresha, Peter Fernandes, Joseph Gonsalvis, "Investigation on the performance and emission analysis of Al2O3 nanoparticles as an additive to a B20 blend of Lard oil methyl ester on a CI engine" International Symposium, IES-2019, Kumamoto University, Japan.

- ◊ Harish. K, Shikar V Jain, K. Raju, "Tribological characteristics of spray formed Al-Si quaternary alloys", International Symposium, IES-2019, Kumamoto University, Japan.

- ◊ K. V. Suresha, Amogh D. M, Peter Fernandes, Raju. K," Investigation on the performance and emission characteristics of a variable compression ratio engine operated with Cardanol rice bran blends with diesel" IES-2019, International Symposium, Kumamoto University, Japan.

- ◊ K. V. Suresha, Vidhish Shetty, Peter Fernandes, Raju. K," Effect of injection pressure on performance and emission characteristics of CI engine fuelled with blends of honge, rice bran hybrid bio fuel with diesel" International Symposium , IES-2019, Kumamoto University, Japan.

- ◊ K. V. Suresha,Vijaylaxmi P. S, Peter Fernandes, Raju. K," Investigation on the performance and emission characteristics of CI engine fuelled with blends of Cardanol, honge biodiesel with diesel" International Symposium , IES-2019, Kumamoto University, Japan.

- ◊ K. V. Suresha, Thangjam S. D, Srinivas C. S, Peter Fernandes, Raju. K," Effect of compression ratio on the performance and emission characteristics of CI engine fueled with honge, hybrid biofuel with diesel", International Symposium , IES-2019, Kumamoto University, Japan.

- ◊ K. Raju, N. Gopi Krishna, L. S. Rao, S. N. Ojha," Microstructural features and wear characteristics of semi solid processed A356 Aluminum alloy" Journal of Material Science and Technology Research, 2018, 5, 11-15.

- ◊ Prashant Kumar, Nagaraj R Banapurmath, Peter Fernandes, Raju. K," Influence of injection strategy on B20MOME fueled CRDI engine with toroid shaped piston cavity", European journal of sustainable Development Research, 2019, 3(3). ISSN:2542-4742.

- ◊ T. Ram Prabhu . M. Murugan , B. P. Chiranth, R. K. Mishra . N. Rajini, P. Marimuthu . P. Dinesh Babu , G. Suganya," Effects of Dual-Phase Reinforcement Particles (Fly Ash + Al2O3) on the Wear and Tensile Properties of the AA 7075 Al Alloy Based Composites" Journal of The Institution of Engineers (India): Series D, 2019, 100 (1) pp 29–35.

- ◊ Jinu Mathew, Josny Joy, Ajeesh Kumar S, Jacob Philip." White light emission by energy transfer from areca nut husk extract loaded with carbon dots synthesized from the same extract". Journal of Luminescence, 208, 2019, pp 356-362.

STAFF RESPONSIBILITIES - ACADEMIC YEAR 2018-19

SL.NO	Staff Names	Designation	Major Responsibilities at Department Level
1	Dr Sudheer M	Prof. & HOD	Dean Student Welfare, Head of Department, Research Coordinator, Organizing Chair - eTIME-2019, PAC & DAB member
2	Dr Raju K.	Professor	Advisor - etime2019, Class Advisor VII M2 & VIII M3, IE dept Coordinator, PAC & DAB member, Research Head
3	Dr Shreeranga Bhat	Professor	IQAC Coordinator, Class Advisor VIII-M1 & V M3, Workshop Convener - eTIME-2019, PAC & DAB member
4	Dr Purushothama Chippar	Professor	Innovation Club Coordinator, Class Advisor VI-M2& V M1, etime-2019 Organizing Secretary, NAIN Coordinator, PAC & DAB member
5	Dr James Valder	Assoc. Professor	Class Advisor IV-M2 & VIII-M3, NACC coordinator, Seminar coordinator, Project evaluation panel head, PAC & DAB member
6	Dr Binu K.G.	Assoc. Professor	Coordinator—Development Projects, Organizing Secretary eTIME-2018, ARC-SJEC Main Coordinator, Class Advisor VI-M2 & III M3, PAC & DAB member
7	Mr Sampath Kumar	Asst. Professor	Department Library In-charge, Class Advisor V-M2 & IV-M3
8	Mr Prashanth Kumar	Asst. Professor	Project Coordinator (II Shift), Class Advisor VII M2
9	Mr Rolvin S. D'Silva	Asst. Professor	E Governance Coordinator, Program Coordinator
10	Mr Prathviraj H.	Asst. Professor	Class Committee Coordinator, Class Advisor IV-M1, MMM & FM lab in charge
11	Mr Rudolf C. D'Souza	Asst. Professor	Workshop Super intendent, Placement & Practical Exam Coordinator
12	Mr Vijay V S	Asst. Professor	Senior Faculty Advisor (SAE India- SJEC), Accreditation Program Coordinator, Class Advisor V-M4 & VI M3
13	Mr Noel Deepak Shiri	Asst. Professor	Department Library coordinator
14	Mr Ravikantha Prabhu	Asst. Professor	Time table and Internal exam coordinator, CAMD lab Incharge
15	Mr Sushanth H. G.	Asst. Professor	EC and HMT Lab In-charge, Class Advisor IV-M4, coordinator - Project , EMS, Plagiarism Check , MAT Lab , KSCST, Class Advisor IV M4
16	Mr Chiranth B. P.	Asst. Professor	IIEDC Coordinator, F&F and Machine Shop In-charge, Hostel students Mentor
17	Mr Neil Vaz	Asst. Professor	Cultural Coordinator, Internship Coordinator.
18	Mr John Paul Vas	Asst. Professor	NACC coordinator, EGD lab incharge, imperial society coordinator, Anti ragging coordinator
19	Mr Sharun Mendonca	Asst. Professor	Timetable, open elective, AICTE CII survey, Atal ranking MDRF– India today survey, AISHE, Swatch Bharat Survey, SELCO, Internal test Admission help desk member, Admission help desk member.
20	Mr Pavana Kumara B.	Asst. Professor	Student Welfare Coordinator
21	Mr Swaraj D. Lewis	Asst. Professor	NACC coordinator, AICUF coordinator
22	Mr Orville Sutari	Asst. Professor	NBA Co-Coordinator, Internship Coordinator
23	Mr Yathish Kumar K.	Asst. Professor	Faculty Advisor (ISIE, SAE India- SJEC)
24	Ms Ramya M.	Asst. Professor	Internals Squad coordinator

Sl. No.	Staff Names	Designation	Major Responsibilities at Department Level
25	Mr Vinoothan Kaliveer	Asst. Professor	Alumni Coordinator, Torque Coordinator
26	Mr Ashwin Shetty	Asst. Professor	Antiragging Committee in charge, Eco club Coordinator
27	Mr Poornesh M	Asst. Professor	First Year Accreditation Program Coordinator, TORQUE – Coordinator, TIARA Department Coordinator
28	Mr Rahul Kumar	Asst. Professor	ARC-SJEC Coordinator, Placement Coordinator
29	Mr Joel Antony D'mello	Asst. Professor	Project Coordinator, Tinkering & Exploration In charge, IUCEE Student leadership coordinator , Class Advisor VII M4
30	Mr Alister Gleason D'Souza	Asst. Professor	Sports advisory, EMS coordinator, Admission coordinator.
31	Mr Nitheesh D Nayak	Asst. Professor	Dept Coordinator I point
32	Mr Santhosh H	Asst. Professor	IIEDC coordinator, ARC Club coordinator
33	Mr Canute Sherwin	Asst. Professor	Aptitude Training Coordinator, Tiara Dept coordinator , FDP coordinator,
34	Mr Akshay N H	Asst. Professor	Placement coordinator , Tiara Dept coordinator
35	Mr Jinu Mathew	Asst. Professor	Tiara Tech Talk coordinator
36	Mr Ramaprasad H	Asst. Professor	Adjunct Faculty

TECHNICAL STAFF - ACADEMIC YEAR 2018-19

SL.NO	STAFF NAMES	DESIGNATION
1	Mr Rudolf D'souza	Workshop Superintendent
2	Mr James Manoj Mascarenhas	Foreman
3	Mr. Christopher Cutinha	Lab Instructor
4	Mr. Janardhan Acharya	Lab Instructor
5	Mr. Harshith	Lab Instructor
6	Ms. Jayashri	Lab Instructor
7	Mr Rajesh	Lab Instructor
8	Mr. Rajesha A	Lab Instructor
9	Mr. Gunakara	Lab Instructor
10	Mr Immanuel J Amanna	Lab Assistant
11	Mr Vathan Kumar	Lab Assistant
12	Mr. Preethesh	Technician
13	Mr. Pranoy X. D'Cunha	Technician
14	Mr. Praveen G. D'Souza	Technician
15	Mr. Bhaskar	Jr. Technician
16	Mr Minin D'Souza	Plumber cum welder

ADMINISTRATIVE STAFF - ACADEMIC YEAR 2018-19

SL.NO	STAFF NAMES	DESIGNATION
1	Ms Nishma Mascarenhas	Jr. Asst. Clerk
2	Mr Franklin D'Souza	Attender

SL.NO	STAFF NAMES	DESIGNATION
3	Mr Charles Fernandes	Attender

STUDENT ACHIEVEMENTS

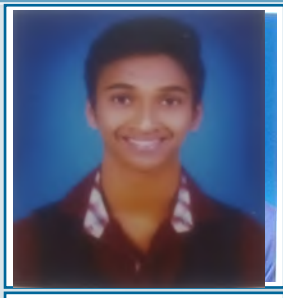
Successfully designed and fabricated third series of ATV, TURTLE 3.0 by Team SJEC Racing.

- 3rd place in overall ranking (State)
- 12th place in overall ranking (National)
- 16th place in Endurance

Successfully designed and fabricated Electric Solar vehicle by the Team Achillius

- 1st place in Solar car championship
- 2nd place in future solar car design

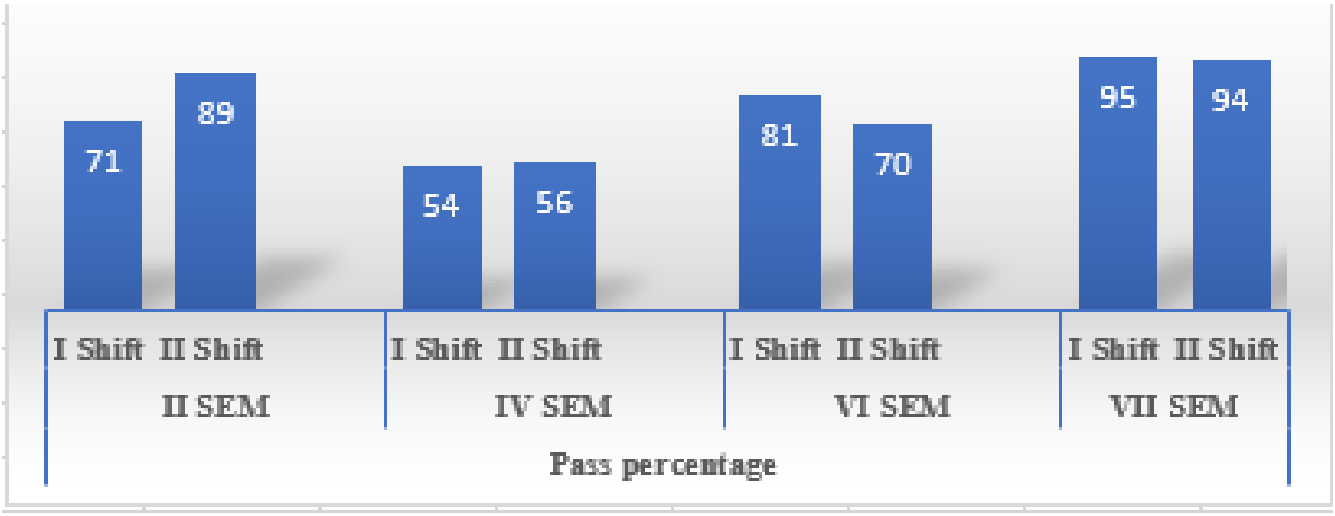
CLASS TOPPERS - ACADEMIC YEAR 2017-18

BE - 4th Year				
	NAVEEN FERNANDES	NAOMON KHAN	NILEEMA PEREIRA	Congratulations
BE - 3rd Year				
	ALTHAMASH SHEIKH	JOSWIN RODRIGUES	VYBHAV U SHETTY	RAJATH R
BE - 2nd Year				
	NISHAL S	SANJAY MOHUNTA	SWAROOP SHETTY	DHEERAJ
BE - 1st Year (1st Sem Physics cycle)				
	JAISON DCUNHA	MAHAMMAD SINAN	K VARUN SHENOY	SHASHANKA
BE - 1st Year (2nd Sem Chemistry cycle)				
	SHASHANKA	MAHAMMAD SINAN	PREM SAGAR	JAISON DCUNHA

EVEN & ODD SEMESTER EXAMINATION RESULTS - ACADEMIC YEAR 2017-18 & 2018-19

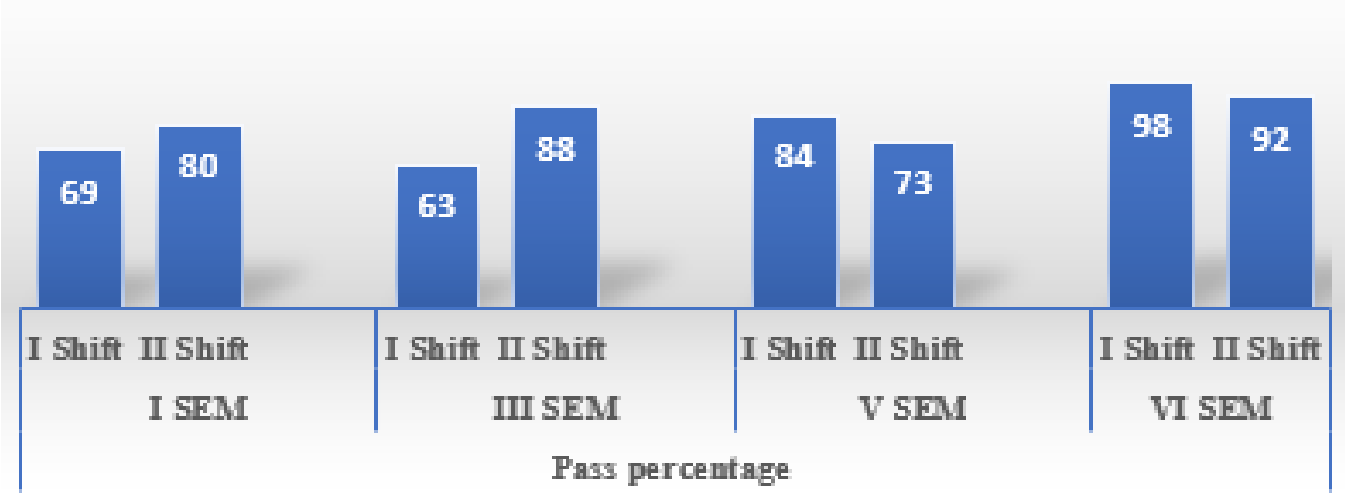
JUNE-JULY 2017-18

Semester	Regular Shift		Second Shift		Total	
	Appeared in exam	Passed the exam	Appeared in exam	Passed the exam	Appeared in exam	Passed the exam
II	119	85	39	35	158	120
IV	133	72	44	25	177	97
VI	130	106	54	38	184	144
VIII	124	119	53	50	177	169



DECEMBER -JANUARY 2018-19

Semester	Regular Shift		Second Shift		Total	
	Appeared in exam	Passed the exam	Appeared in exam	Passed the exam	Appeared in exam	Passed the exam
I	89	62	45	36	134	98
III	141	90	42	37	183	127
V	128	108	45	33	173	141
VII	125	123	52	48	177	171



CO-CURRICULAR & EXTRA-CURRICULAR ACHIEVEMENTS 2018-19

- The Department of Mechanical Engineering students participated in VTU Mangaluru Zone Shuttle Badminton Tournament and entered the quarter finals held on 28 August 2018 at NMAMIT, Nitte.
- The Department of Mechanical Engineering student Mr Daryl Elroy, Mr Mohd. Nawaf, have secured I Place in ROBOWAR during Ineridea' 19 held from 13 to 16 February 2019 at NNMAM Institute of Technology, Nitte.
- The Department of Mechanical Engineering student Ms Shraddha has secured I Place in ROBOSOCCER during Ineridea' 19 held from 13 to 16 February 2019 at NMAM Institute of Technology, Nitte
- The Department of Mechanical Engineering student Ms Shraddha has participated in ROBORACE during Ineridea' 19 held on 13 February 2019 at NMAM Institute of Technology, Nitte
- The Department of Mechanical Engineering student Mr Mohammed Nawaf has participated in ROBORACE during Ineridea' 19 held on 15 February 2019 at NMAM Institute of Technology, Nitte.
- The Department of Mechanical Engineering Students participated and secured I & II Place in the event "CONTRAPTION" at VerTechX8.0, the intercollegiate National Level Technical Fest conducted by MVJ college of Engineering on 2 & 3 of April 2018.
- The Department of Mechanical Engineering Students participated and secured Ist Place in "ROBOKOMBAT" and 2nd Place in "MYSTIQUE LOCOMOTOR" event of ENIGMA – 2018 held from 13 to 15 of April 2018 at Malnad College of Engineering, Hassan.
- The Department of Mechanical Engineering students participated and secured 4 Place in VTU Inter Zone Men Hockey Tournament held at VVCE, Mysuru on 30 April and 1 May.
- The Department of Mechanical Engineering students "TEAM SJEC RACING" have successfully cleared the Virtual Round of SAEINDIA BAJA 2019 competition held on 12 & 13 July 2018 at Chitkara University, Punjab and the team got 3 place in the state and 67 place in all India ranking.
- The Department of Mechanical Engineering student's Aero team "Aviator" got 8 place all over India and 4 place in the state in SAEINDIA Aero Design Challenge – Micro Class Aircraft competition held from 11 to 13 July 2018 at Anna University, Chennai. Total 47 teams took part in that competition.
- The Department of Mechanical Engineering students have participated and secured 3 Place in VTU Mangaluru Zone Men Table Tennis Tournament held at SDIT, Mangaluru from 3 to 4 September 2018.
- The Department of Mechanical Engineering students have participated and secured 4 Place in VTU Mangaluru Zone Basketball Tournament held at NMAMIT, Nitte from 15 to 16 September 2018.
- The Department of Mechanical Engineering students have participated and secured 4 Place in VTU Single Zone Men Power Lifting Championship held at SCEM, Adyar from 28 to 29 September 2018.
- The Department of Mechanical Engineering student Mr A G Pratheek has participated in the events BOT HOCKEY and secured 1 Place, PERFECT MACHINE and secured 1 Place and CONTRAPTION secured 2 Place at NITK, Surathkal during the annual Technical Festival Engineer' 18.

- The Department of Mechanical Engineering students have participated and secured Overall Championship in VTU Single Zone Men Wrestling Championship held at SCE, Bengaluru from 15 to 17 October 2018.
- The Department of Mechanical Engineering Student Mr A G Pratheek participated and secured I Place in "ROBOWAR" held from 17 to 19 of November 2018 at Drishti, CET Trivandrum.

MOST NOTABLE STUDENT ACHIEVEMENTS - 2018-19

- The Department of Mechanical Engineering student Mr Rohan S has participated 17 Karnataka State WUSHU Championship – 2018 in that Senior group as a player official in the Championship held at Shimogga Indoor Stadium from 6 to 10 September 2018 and secured 1 place in Sanshou in 60 – 65 Event/ KG.
- The Department of Mechanical Engineering student Mr Sonal Raj (IV yr ME) participated and secured 3 Place (Below 93kg) Power lifting in VTU Single Zone Power Lifting Championship held at SCEM, Adyar on 28 & 29 September 2018 (Squat 165kg, Bench Press 90kg, Dead lift 185kg, Total 440kg)
- The Department of Mechanical Engineering students have participated and secured Mr Sreehari (IV yr ME) 1 Place (Below 79kg), Mr Anand Krishnan (IV yr ME) 1 Place (Below 66kg), Mr Adarsh Dandin (III yr ME) 2 Place (Below 75kg) and Mr Ahammed Nihad (III yr ME) secured 3 Place (Below 125kg) in VTU Single Zone Wrestling Championship held at SCE, Bengaluru on 15 & 17 October 2018
- The Department of Mechanical Engineering student Mr K Karthik Shenoy(IV yr ME) has participated and secured 1 Place in (Below 65kg) BEST PHYSIQUE and he awarded Mr VTU Most Muscular 2018-19 in VTU Single Zone Best Physique Championship held at Global Academy of Technology, Bengaluru from 30 to 31 October 2018.
- The Department of Mechanical Engineering student Mr Varun Kumar (II yr ME) secured 1st Place (below 92kg) in VTU Single Zone Wrestling Championship held at SCE, Bengaluru from 15 to 17 October 2018 and also participated in the All India Wrestling Championship held at Chaudhary Bansi Lal University Bhiwani (Haryana) from 14th to 18th November 2018.
- The Department of Mechanical Engineering student Mr Upendra Barke(IV yr ME) for securing 1 Place & 2 New Meet records (Below 74kg) in VTU Single Zone Power lifting Championship held at SCEM, Adyar on 28 & 29 September 2018 (Squat 185kg – NMR, Bench Press 100kg, Dead lift- 210kg, Total 495kg- NMR) and also secured 1st Place (Below 74kg) DK & Udupi District Power lifting Championship held at NGO Hall, Mangaluru on 8–9 December 2018 (Squat 180kg, Bench Press 100kg, Dead lift 212.5kg Total 492.5kg).

FACULTY BLOGS

MATERIAL SCIENCE

By Chiranth
Log on to ...
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KINEMATICS OF MACHINES

By Pavana Kumara B
Log on to ...
http://pkbkom.blogspot.in or Scan Code ▶

LIST OF STUDENT PROJECTS - ACADEMIC YEAR 2018-19

Thermal Stream	
Sl. No.	**Project Title**
1	Effect of injection pressure on performance and emission characteristics of ci engine for B30 blend of Pongamia methyl ester containing TiO_2 nano additives
2	Effect of injection pressure on performance and emission characteristics of blends of magnetite in waste cooking oil methyl ester and diesel in ci engine
3	Performance, combustion and emission characteristics study on CRDi engine with hydrogen and B20 blend
4	Performance study of diesel engine at different injection timing using preheated biodiesel
5	Performance and emission characteristics of preheated fuel in ci engine
6	Performance and emission characteristics of bio diesel blends in CI Engine
7	Effect of injection pressure on performance and emission characteristics of blends of magnetite in waste cooking oil methyl ester and diesel in ci engine
8	Performance, combustion and emission characteristics study on CRDi Engine with hydrogen and B20 blend
9	Effect of injection pressure on performance and emission characteristics of CI Engine for B30 blend of pongamia methyl ester containing TiO_2 nano additives
10	A study on the effect of fuel injection pressure and timing on the performance and emission of diesel engine using preheated fuel
11	Study on thermal behaviour on influence of nanofluid in heat exchanger
12	Performance and emission characteristics of preheated fuel in CI Engine
13	Performance study of diesel engine at different injection timing using preheated biodiesel

Design Stream	
Sl. No.	**Project Title**
1	Design and fabrication of compact cereal puffing machine
2	Recycling and conversion of waste pet bottle into acrylic paint
3	Design & fabrication of automatic fish cleaning machine
4	Low cost energy generation of micro hydroelectric power plant using whirling action of water
5	Remotely operated lifeguard
6	Smog air purifier
7	Recycling and conversion of waste pet bottle into acrylic paint
8	Automatic arecanut bunch separator
9	Low cost energy generation of micro hydroelectric power plant using whirling action of water
10	A study on implementation of quality control methods in a cutting tool manufacturing plant
11	Designing the waste fume suction and filtration
12	Arecanut insecticide sprayer
13	Design and fabrication of water cleaning machine

LIST OF STUDENT PROJECTS - ACADEMIC YEAR 2018-19

Materials Stream	
Sl. No.	**Project Title**
1	Effect of temperature on the mg-al alloy processed through equal channel angular pressing
2	A study on Aluminium and its alloys processed under equal channel angular extrusion
3	Effect of extrusion temperature on mechanical properties of AA7085 alloy
4	Study on mechanical behaviour of banana fibre and matrix reinforced epoxy composite
5	A study on mechanical and tribological properties of sisal fibre reinforced epoxy composite

LIST OF KSCST FUNDED PROJECTS - ACADEMIC YEAR 2018-19

Sl No	Title of the Project	Faculty Supervisor	Student (Team Leader)	Sanctioned Amount (Rs)
1	DESIGN AND FABRICATION OF AUTOMATED PROSTHETIC ARM	Dr. BINU K.G.	Mr. MOHAMMED AL TAMASH SHEIKH	9000.00
2	AUTOMATIC TYRE INFLATION SYSTEM FOR HEAVY VEHICLES	Mr. YATHISH KUMAR K	Mr. ANAND CHENNABASAPPA MORABA	8000.00
3	RECYCLING AND CONVERSION OF WASTE PET BOTTLES INTO ACRYLIC PAINTS	Mr. VINOOTHAN KALIVEER	Mr. RAJATH R	7500.00
4	ARECANUT INSECTICIDE SPRAYER	Dr. BINU K G	Mr. RAKSHITH	8000.00

LIST OF VTU FUNDED PROJECTS - ACADEMIC YEAR 2018-19

Sl No	Title of the Project	Faculty Supervisor	Names of the students	Sanctioned Amount (Rs)
1	DESIGN AND FABRICATION OF COMPACT CEREAL PUFFING MACHINE	Mr. NEIL VAZ	Mr. JOSHUA NIHAL CUTINHA Mr. GALVIN GIAN FERNANDES Mr. ANAND KRISHNA Mr. ARAVIND C	5000.00
2	RECYCLING AND CONVERSION OF WASTE PET BOTTLE INTO ACRYLIC PAINT	Mr. VINOOTHAN KALIVEER	Mr. RAJATH R Mr. PRAJWAL Mr. PAVAN KUMAR Mr. MANISH S SHETTY	5000.00

CAMPUS PLACED STUDENTS - ACADEMIC YEAR 2018-19

Avin Shobith Pereira

Joswin Rodrigues

Vybhav U Shetty

Mohammed Salman

Shriram Nagesh Kamath

Prajwal Dsouza

Austin Franklin Mathias

Shriram Nagesh Kamath

Raviprasad

Abhishek U Bangera

Joshua Nihal Cutinha

Carlton Alec Saldanha

Mohammed Al Tamash

Aravind C

Akshay Kumar K

Ashwin V Bangera

Karthik V

Krishna Ganapathy P B

Krishnaraj K

Shetty Saiprasad

CAMPUS PLACED STUDENTS - ACADEMIC YEAR 2018-19


Shriram Nagesh Kamath

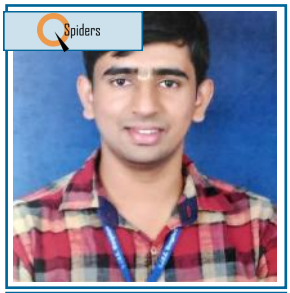

Adarsh M P


Rohith.K


Aditya Rajaram Naik


Abhishek U Bangera


Lester Menezes


M. Karthik Rao


Clayton Nischith Pais

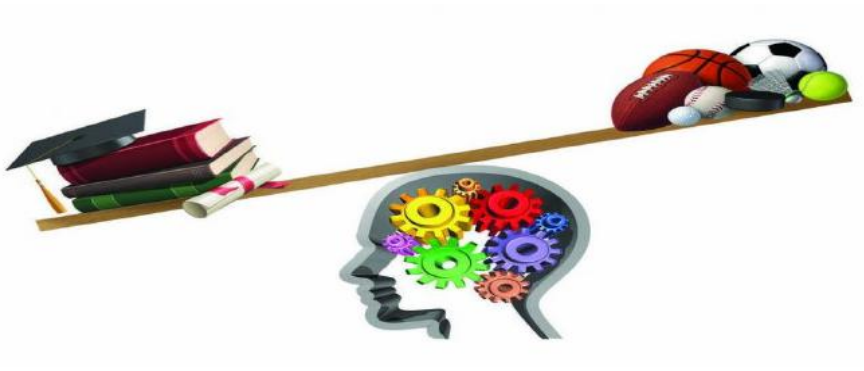
The Department of Mechanical Engineering congratulates all the placed students and wishes them a successful career ahead.

Skills for the Future!

The World Economic Forum has come up with a list of Growing Skills and Declining Skills in their Annual Meeting of the New Champions. The list presents Analytical Thinking and Innovation as the leading skill of the future. The list titled 2022 Skills Outlook has been widely viewed across the Globe.

From the teaching/learning perspective, Active Learning and Learning Strategies finds mention as the second important skill in the list. This prediction matches with the current focus within the Department to impart inductive learning strategies and hands-on approach in our teaching/learning practices.
Source: https://www.weforum.org/agenda/2018/09/future-of-jobs-2018-things-to-know/

SPORTS ACHIEVER



Q. First sports event at SJEC, how did it go?

Since I came to SJEC it was my greatest ambition to get in to the college wrestling and judo team. I contacted our Physical Education Director and spoke about my achievements during my higher secondary education. She was really interested in my achievement and guided me to get in to the college wrestling and judo team. Here starts my first sports career in SJEC. Due to the support and proper training provided from our PED I secured third place in VTU single zone wrestling and judo championship held Kormangala indoor stadium, Banglore.

Q. Which are the sports events taken part in SJEC?

Wrestling and Judo was my core sport event. Apart from that I participated in our college football team and also in college hand ball team during four years of my academics. I took the role of a Goal Keeper in both the games.

Q. Key achievements.

In my first year of BE(2015) I secured third place in VTU single zone wrestling and judo champion ship. In my third year of BE(2018) our college football team secured first place in VTU Manglore zone and fourth place in VTU inter zone championship held at SIT Tumkur. In my final year of BE(2019) I secured first place in VTU single zone judo championship, and our college football team secured first place in VTU manglore zone. Our college football team also secured second place in VTU inter zone championship held at SIT Tumkur. Our college Handball team reached semi finals of VTU manglore zone in all the four years.

Q. Why sports is important?

Sports are a crucial part of a student's growth and development. They help in the development of mental health and physical fitness of the body. Through participation in sports and games, a student gains various skills, experience and confidence that are helpful for developing their personality.

Q. What is your advice to young sportspersons at SJEC?

It was always my passion towards sports helped me to achieve such an honoured achievements in my life. It will always help us to come up from our depression, anger, sadness etc. Winning is always secondary. Come up with the courage to face your opponent. Without any doubt you can assure that the path of success will open the door for u.

Q. Most memorable sporting moment at SJEC ?

Winning the gold medal in Judo was my best memorable moment which I cannot be forgotten in my life. As in entered for my final match, the atmosphere created by my PED and teammates was the best thing ever a sportsman can achieve in his life. That support was the biggest key for my success and the proud moment ever I felt being a sports man at SJEC.

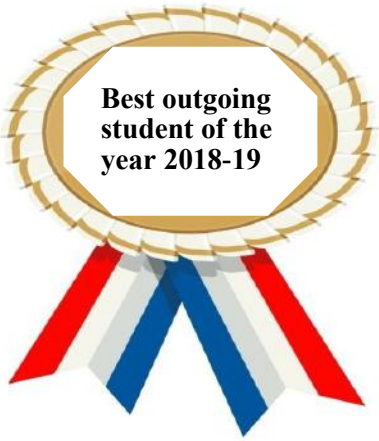
Q. At this juncture, what you have to say your teammates and PED's?

Apart from field all my team mates and PED's were like my family. They care and love us like one of them. The support they give on field and off field was much more than words to explain. It was my team mates support and love which pushed me to set new goals and achieve new milestones in my sports life.

Q. Going forward , will you be active in sports? Do you have any specific goals?

Apart from achievements sports help us to keep a proper routine in our daily life. Also it will help you to be a proper human being and to have a good character. Since sports helped me to be one of the kind as I said, I would surely be in this filed. Also to have a health maintenance being a sportsman will be the best option ever. Thank you.

ACADEMIC ACHIEVER



Vybhav Shetty
VIII SEM M4 SEC

Q. Vybhav, you have excelled in academics over the past four years. Please share your reasons for success.?

Well Sir, one of the best ways to prepare for a university exam is to start preparing for it from day 1. I used to go through the notes and textbooks of the lecturers every day. I always used to compare the theoretical knowledge of Text Books with the practical applications in everyday life. I used to and still do watch a lot of online videos regarding topics in Mechanical Engineering especially in the domain of Automobile and Aeronautical Engineering.

Q. What are your memorable achievements in SJEC?

For me the most memorable achievement would be working with students from different departments of the college on the Solar Vehicle Project and securing an All India Ranking of 17 in Electric Solar Vehicle Championship and 11 in Future Solar Design Championship. It was a mammoth task as we had little to no experience in it. But my team rose to the occasion and exceeded all expectations.

Q. What is your advice to the junior students?

My Sincere advice is to urge every single student right from the 1sT year to be a part of Associations that he/she is passionate about. There are numerous associations in the college. Being a part of a team and working with your team members automatically brings in Soft Skills every Organization looks for.

Q. Your opinion on the academic ambience at the Department.

The Mechanical Department has been continuously bringing Laurence to the college in academics as well as other activities. The Department is home to a number of skilled lecturers who will be ready to solve your doubts anytime, anywhere. Everyone is friendly and helpful here.

Q. Suggestions to the Department for enhancing students' academic performance.

The Department takes opinions from students on a regular basis and implements them. Our suggestions have already been heard and implemented upon.

Q. Share your thoughts on life at SJEC.

I am privileged to be a part of St Joseph, where academics and activities are given equal importance. To put it out in simple words, It's the best of both Worlds. The encouraging environment for students provided by the various Departments with greenery all around along with a clean campus makes it one of the best Colleges out there.

Q. How would you like to contribute to the Department in the future, as an alumnus?

Ones a Josephite, Always a Josephite. I would be an active member in the alumni association of the College. St Joseph provided me a platform to grow and I would make sure that the students of this college are also provided with the same so they could follow their passion and make their dreams come true.

GATE QUALIFIED ALUMINI STUDENTS

- Jithesh from the Mechanical Engineering Class of 2018 has qualified GATE 2019 with a score of 509 and his score valid till 2022.
- Mahin Saif Nowl from the Mechanical Engineering Class of 2018 has qualified GATE 2019 with a score of 330 and his score valid till 2022.
- Darshan C from the Mechanical Engineering Class of 2017 has qualified GATE 2018 with a score of 536 and his score valid till 2021.
- Kenneth Paul D'souza Mechanical Engineering Class of 2017 has qualified GATE 2018 with a score of 651 and his score valid till 2021.

FACULTY BLOGS

CAED - VIDEO TUTORIALS ON YOUTUBE

By Christopher Cutinha
Scan the QR Code to access the site ▶

If you want your articles featured in 'The Crank 2020"

Write Email to us hod.mech@sjec.ac.in

Q. You have enthralled SJEC with your music and with your voice. Share your thoughts on music and what it means to you.?

Music means the world to me. It's literally the drug that drives my entire life. For me music is a kind of release. It's the best way of expressing any emotion your feeling.

Music has been an important part of my life ever since I was a little kid. I still remember listening to cassette tapes of bands like Queen, Led Zeppelin, Deep Purple and singing along with them. I grew up listening to all sorts of artist and their influence is very much seen in the songs I write or perform. Music is the best and only thing that I can really rely on, especially when I'm feeling down or if I'm having a bad day. All I need to do is wear my headphones on and listen to some classic rock n roll.

Q. Being an active musician, you have also performed extremely well in your academics. How did you find the balance between both?

It's all about striking the right balance actually. I would usually listen to the lectures in class attentively and in the evening after college I practice or go perform for Music Gigs. It's also thanks to my lecturers and friends that I'm able to balance both. Whenever I miss a class, my lecturers are always there to help me out and teach me what I missed. My friends especially Joswin also help out by giving me their notes without which I don't think I could have managed.

Q. Do you have any musician you look up to and draw inspiration from?

Queen's front man Freddie Mercury is the person I look up to. Freddie was a force of nature. His stage presence was just fascinating and he was a showman that knew exactly how to connect with an audience.

Q. Which are your memorable moments at SJEC?

My most memorable moments in SJEC are during the College annual day and Tech night.
Especially my first performance during my first year in college with my friend Kenny Pereira and my last performance in Final year with my band GARDEN SQUARE.

Q. What is your advice to musical talents at SJEC?

My advice to the musical talents in SJEC is to always do what you love and love what you perform. Put your heart and soul into what you perform and no matter what song you perform, do it with passion. Also choose songs which are closest to your heart and a genre that you love the most. Doing that I'm sure you guys will rock the stage.

Q. Suggestions to SJEC for promoting talented students?

There a number of talented musicians in SJEC. My suggestion would be to encourage them by forming a music club where they can collaborate, encourage and share knowledge in music. Also I would suggest to hold more music events like a Musical evening or Battle of Bands where they can showcase their talent.

Q. Going forward how will you manage music and career? Will you take up music as a career?

Going forward I want to pursue both my music and my career. Although I love engineering, music is very important to me and something I can't live without. So I will have to learn to strike a proper balance between both. And yes I would definitely take up music as a career if given an opportunity to do it full time.

STUDENT ASSOCIATIONS

TEAM - TORQUE

SAEINDIA SJEC Collegiate Club

TEAM - ARC SJEC

TEAM - ACHILLIUS

TORQUE

Automation & Robotics Club, SJEC

SAEINDIA SJEC Collegiate Club

ISIE - Students Research Association

INAUGURATION OF TORQUE

October 04, 2018

Mechanical Department of St Joseph Engineering College inaugurated the students' association - TORQUE on Thursday, October 4th, 2018, at 10:45 AM in the College Kalam Auditorium, Academic Block 2. Dr S M Shivaprakash, Professor and Head, Fisheries Resources and Management, Yekkur, Mangaluru was the Chief Guest of the program.

Dr Rio D'Souza, Principal, SJEC presided over the function. Rev. Fr. Wilfred Prakash D'Souza, Director, SJEC, Dr Joseph Gonsalvis, Chief R & D and Rev. Fr. Rohith D'Costa, Assistant Director, SJEC was the guests of honour. Dr Sudheer M, HOD of the Mechanical Engineering Department, Mr. Vinoothan Kaliveer and Mr. Poornesh M, Faculty Coordinators of TORQUE, Mr. Upendra Barke, President & Mr. Megharaj B, Vice-President of TORQUE, were present on the dais. Firstly the brief presentation of the activities of Torque 2017-18 was presented.

Dr Sudheer M, HOD of the Mechanical Engineering Department, welcomed the gathering and introduced the Chief Guest. Rev. Fr. Wilfred Prakash D'Souza, Director, SJEC florally welcomed the Chief Guest. The student association was inaugurated by lighting of the lamp. Mr. Upendra Barke, President of TORQUE, welcomed the second-year students to the function & gave an insight on various events conducted by the Mechanical Department under Torque association and urged them to volunteer & participate in them. The oath was administered to the association members and students by faculty coordinator Mr. Vinoothan Kaliveer.

The chief guest for the day, Dr S M Shivaprakash, in his speech, congratulated students for being so lucky to be a part of good college which is having all necessary infrastructure and motivated students to make best use of it and study engineering with a different viewpoint. He said that to make one's life successful he need to have a goal. A life without a goal is like a ship without a compass. He said that no matter how you had been in the last term, but what matters most today is how well you will utilize your capabilities and the facilities provided in the school in this term. She also added that specific goals in life enable us to move forward with determination. And this determination persuades us to strive hard. He advised the students to take up responsibilities to create a better environment in our society.

Rev. Fr. Wilfred Prakash D'Souza addressed the gathering and advised students to take active participation in the association activities. He also said that as the name Torque means a force to keep moving, students should move forward in life to achieve greater heights. He urged the gathering & asked the students to take active participation in the association activities and understand the prime importance of studies & related activities which will help them to excel in their career. He also advised students to look into the problems existing in the society and suggest technical solutions to those which is the prime responsibility of a Engineer.

Dr. Rio D'Souza, president of the function delivered the Presidential address. He motivated the students to participate in various activities conducted in the college and urged them to take up initiative to shape their ideas into realities.

Mr. Megharaj B, Vice-President - Torque proposed the vote of thanks. This was followed by a Motivational talk by the Chief Guest on "Time management, Stress Management and Relationship Management".

TORQUE ASSOCIATION - OFFICE BEARERS

Mr Poornesh M
Faculty Coordinator

Mr Vinoothan Kalveer
Faculty Co-coordinator

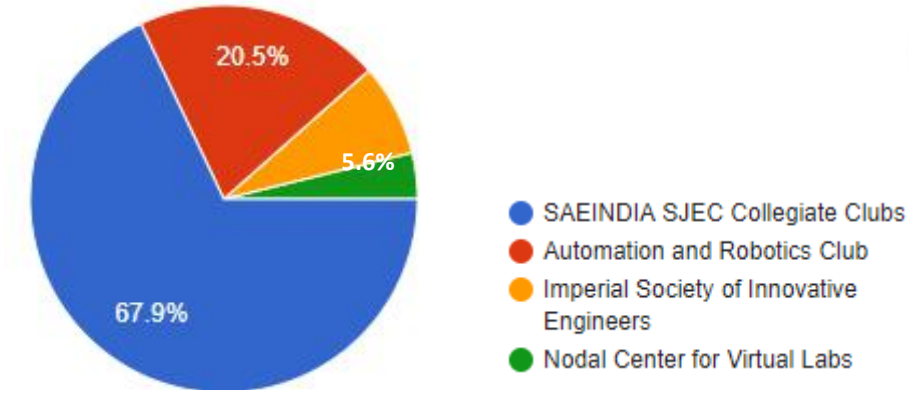
The Association started functioning for the academic year 2018-19 with a total student strength of 85 from third and final year Mechanical Engineering. A total of 33 students had registered from final year and 45 from third year. The following students were appointed to represent as the office bearers of the Association:

NAME	USN	DESIGNATION
Upendra Barke	4SO15ME113	President
Megharaj	4SO15ME068	Vice President

The students of Torque association are appointed towards volunteering for various activities conducted in the Department. This serves as a great opportunity to develop necessary skills such as team work, leadership, event management, scheduling and planning, etc.

OPINION POLL

Popular initiative in the Department -



* the above statistics are based on responses obtained from Josephites through an online survey.

Hearty Welcome to the Newly Joined Faculty

Dr Suma Bhat
Associate Professor

Dr Jayavardhan
Associate Professor

Mr Raghavendra Prasad
Assistant Professor

"ORIENTATION THROUGH GATE"

August 25, 2018

'TORQUE' Mechanical Engineering Students' Association along with Academy in Pursuit of Engineering Excellence (APEX) has organised a career guidance talk on the topic "Orientation through GATE" for final year students of Mechanical Engineering Department on 23 rd August 2018 from 11.10 to 1.00 PM for M2 and M3 sections in and on 24 th August 2018 at 11.10 to 1.00 PM for M1 and M4 sections in their respective classrooms in Academic Block III.

The talks were delivered by Mr Ananth Pai and Mr. Uday Shanker, Academy in Pursuit of Engineering Excellence (APEX). The speaker was introduced to the crowd by Mr Poornesh M, Coordinator of TORQUE.

The talk was mainly focused on the higher studies and examinations that can be answered by the students in their final year if at all they are focusing on pursuing higher studies such as MTech.

The talk was concluded by the questions and answer session, where the students were given an opportunity to clarify the doubts regarding their future. The entire session was concluded by a vote of thanks which was delivered by Mr Vijay V S.

"ENGINEER'S DAY"

September 20, 2018

The Mechanical Engineering Department and its Students Association Torque celebrated the Engineers' Day on Tuesday, 20th September, 2018, at 11:00 am.
The list of events conducted on the day is listed below.

1) **Sketch it**—was conducted to examine the talent of drawing & sketching of a 3D picture of any machine related to mechanical engineering.
2) **Tech Quiz**- was conducted to test the knowledge of students in general science as well as their respective technical field.
3) **Mr Machinist** - was conducted where the students had participated in Metal hunt, Assembly of Multipurpose agricultural Machine, Stacking of Nuts etc.

Staff coordinators
Chaithra S V & Poornesh M

Student coordinators
Upendra Barke & Suhas S.M

"Importance of GATE Exam"

November 01, 2018

'TORQUE', Mechanical Engineering Students' Association had organized a talk by ACE Institute for the final year students of the Department on the topic of "Importance of GATE Exam" on 30th October 2018 in their respective classrooms.

Mr Raghavendra Sarala Manager Academic Relations from ACE Engineering Academy Bangalore delivered a talk on "Importance of GATE Exam" for final year Mechanical Engineering Students on 30/10/2018.

The Head of the Department, Dr Sudheer M and TORQUE Coordinator Mr Poornesh M, gave a brief introduction about the resource person and about academy to the gathering, which was then followed by the guest addressing the crowd.

In his speech, the job opportunities and scope for higher studies after qualifying in the GATE exam was highlighted. Speaker mentioned about the distribution of the marks, the type of the questions asked, level of preparation required for the GATE exam and course content for the preparation. The job opportunities in PSU, state government and central government organizations were presented in detail. Speaker made a special mention of GATE score being considered by 3 countries namely Singapore, Germany and Switzerland for Masters' Course in their countries.
The students then openly discussed about their queries related to their concerns on the exam has to be written and the

preparation needed to face the exam. The talk was concluded by a vote of thanks delivered by Mr. Poornesh M

"Display of Expotainer from FESTO"

November 05, 2018

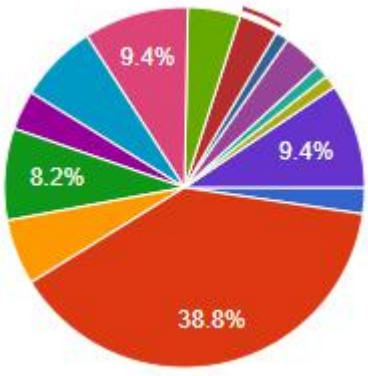
As a part of bringing the students closer to industry and different parts and equipment which are being used in the industries, FESTO facilitated Mobile Expotainer which is an innovation on wheels on the road to their customer was organized by Department of Mechanical Engineering in association with TORQUE on 05 November 2018 in the basketball court of the college.

Dr. Sudheer M along with the management of the college comprising of the Director Rev.Fr. Wilfred Prakash D'Souza, Assistant Director Rev.Fr. Rohith D'Costa and Principal Dr. Rio Dsouza welcomed Mr Sameer from FESTO Controls Bangalore. Respected Director welcomed the gathering of students and staff presented at the venue and appreciated the

department for organizing such an event which helped in giving the students about the present trends in the industries. Shortly after the talk, the director cut the ribbon and witnessed the display of Expotainer. The staffs and the students of Mechanical Engineering as well as the other department students visited this display through out the day.

OPINION POLL

Most challenging subject in the programme



- BTD
- ATD
- MOM
- KOM
- FM
- DME-1
- DME-2
- Heat Transfer
- Turbomachines
- Control Systems
- FEM
- Operations Research
- Engineering Economics
- Other

* the above statistics are based on responses obtained from Josephites through an online survey.

"Skilling Engineers for Professional Success"

November 14-15 2018

'TORQUE', Mechanical Engineering Students' Association had organized a talk by Konkan Railways on topic of "Skilling Engineers for Professional Success" for the 2nd and 3rd year students of the Department on 14th and 15th November 2018 respectively in their respective classrooms.

Mr Shridhara Avabhrath and Mr Surya Shekar, Senior Trainers from Konkan Railways were the spokesperson for the talk. Before the talk, Dr Sudheer M, introduced the guests to the gathering who was accompanied by Mr Vinoothan Kaliveer the Coordinator of TORQUE.

The talk focused on internship and job opportunities in Konkan Railways. During the presentation, the trainers highlighted on different topics such as salient features on Indian railways, 3 year performance report, uniqueness of Konkan railways, maintenance of the railway line, mega infrastructure projects, challenging projects taken up in Jammu and Kashmir, construction of Chenab Bridge and training activities.

The training program mentioned by them was of 7 days duration and includes 5 day classroom training and 2 day field visit to Konkan Railway site for practical exposure to field working. The program was proposed to be held at KRA centres at Madgaon, Bhatkal and Mangalore. The program includes giving free training for 2 BPL catagorey students in every paid batch of 20 students. The fee structure was Rs. 11500 + GST (18%)

"Latest Designing Tools in Industry"

April 23 2019

"Latest Designing Tools in Industry" was organized by TORQUE, Mechanical Engineering Students' Association for the interested students of the Department of Mechanical Engineering on 23rd April 2019 from 11:15-12:45PM in Bishop Aloysius Paul Hall.

The Head of the Department Dr Sudheer M and Mr Poornesh M, TORQUE Coordinator welcomed the speakers to the gathering.

The talk was delivered by Mr Akshay B Gaikwad and Mr Sheik Mohammed, Faculty, CADD Centre, Mangaluru. During the presentation, Mr Akshay gave detailed information about the different 2D and 3D packages used in Aerospace, Automobile, Heavy Machinery, Industry & Consumer Products. The presentation gave information to the students about the software skill set required in different industries.

"Tiara Tech Fest 2019 "

March 13 -14 2019

On the occasion of TIARA Techfest 2018 various activities were conducted by the TORQUE association for students to encourage showcasing their talents and skills. Following are the Events organized:

1. Avion: The event begin with the presentation given by the teams where they explained the detailed design, construction and components used in the aircraft. The aircrafts were weighed as an inspection procedure. Finally the teams were asked to fly the aircraft and complete the different tasks.

- **Staff Coordinators**: Mr Chiranth B P & Mr Santhosh
- **Student Coordinators**: Mr Joywin & Mr Jokshith
- **Judges** : Mr Rolvin D'silva & Mr Vijay Ganesh
- **Event Winners**: ***First Place***: Kiran and Team from SDIT, Mangalore, ***Second Place***: Muralidharan and Team from SDIT, Mangalore

2. Hydrocannons: The event was conducted in two rounds. In the first round two trials were given to each team and the best four teams were selected for the second round. In the second round the team which is able to cover maximum distance was declared the winner. The distance covered by the cannon of first place was 124 metres and second place was 107 metres. The event ended by honouring the judges and handing over the winner's certificate to the prize winners.

- **Staff Coordinators**: Mr.Sushanth & Mr. Rahul Kumar
- **Student Coordinators**: Mr Vikyath H Shetty
- & Mr Shashi
- **Judges** : Mr Joel D'Mello & Mr Prashanth
- **Event Winners**: ***First Place***: Immanuel Stephen Maben and team of SJEC, M'lore, ***Second Place***: Deekshith and team of SJEC, M'lore.

3. Robowar: Event was about the clash of bot. Event began by explaining he rules and regulations followed by picking the lots for the fixture. Knockout round match comprising of three rounds each were played. This was followed by quarterfinals, semi- finals and finals.

- **Staff Coordinators**: Mr.Swaraj Lewis & Mr. Ashwin Shetty
- **Student Coordinators**: Mr Sonal Raj & Mr Vinil
- **Judges** : Mr Chitraranjan & Mr Shrinidhi
- **Event Winners**: ***First Place***: Zayan and Team of Team Gladiators from SJEC, ***Second Place***: Prashanth, Lenin and Team from Team Terror Bulls from SJEC.

4. Tech Talks: The criteria on which the judgement would be placed were explained to the participants. A total of 12 groups from various engineering colleges presented their topic related to emerging trends in Mechanical, Aeronautical and Automobile engineering. Each team was judged based on their slide content, presentation skills and Q&A. The topic presented by the first place winner was "Green Supply Chain Management" and the second place winner topic was "Air Cars"

- **Staff Coordinators**: Mr.Jinu Mathew & Ms Ramya
- **Student Coordinators**: Mr Sriram Kamath
- **Judges** : Dr Raju K & Dr James Walder
- **Event Winners**: ***First Place***: Mr.Amith Kumar Pai, SJEC, M'lore , ***Second Place***: Mr. Devadiga Nikhil Gopal, SIT, M'lore

5. Treasure Hunt : The event begin with creating a what's app group and adding the team leaders to it for communication of clues. The rules were explained and the first clue was discussed. The event included a total of 11 clues and the team which cracked the 11th clue were declared as winners.

- **Staff Coordinators**: Mr Noel Deepak Shiri & Mr Ravikanth Prabhu
- **Student Coordinators**: Mr Vernon Lobo & Mr Yvon
- **Judges** : Mr Orville Sutari
- **Event Winners**: ***First Place***: Mr Nigel, Mr Fayaz, Mr Firaz& Mr Jim of SJEC, M'lore, ***Second Place***: Mr Alistair, Mr Mubarak, Mr Afham and Mr Adhil of SJEC, M'lore.

Message:

"Coming together is a beginning, staying together is progress, and working together is success" – Henry Ford.

"TORQUE" - The Mechanical Engineering Students' Association has successfully completed another year with lots of activities for the students in the Department as well as the external participants. The Student members in Torque develop abilities such as team leadership, team works, event management and accountability. The various activities conducted by the association helps in bringing the liveliness and improves the interactions between students across sections. They work together as one team in organizing various events of the Association and the Department.

Finally, I congratulate the outgoing batch of students from Class of 2019 for their contribution to the Association. I also look forward to the new batch of TORQUE members to continue the good work of the Association.

Mr Poornesh M
Faculty Coordinator

SAEINDIA-SJEC COLLEGIATE CLUB

SAE stands for **Society of Automotive Engineers**, **SAEINDIA** is India's leading resource for mobility technology. As an individual member driven society of mobility practitioners, the ownership of SAEINDIA wrests with its members who are Individuals from the mobility community, which includes Engineers Executives from Industry, Government Officials, Academics and Students. It is one of the few professional engineering societies whose membership represents practically every engineering and scientific discipline.

SAEINDIA has over 40,000 student members in more than 328 collegiate clubs located all over India as on March 2013. Collegiate clubs provide practical exposure as a professional engineering society and as a focal point for campus engineering programs and projects.

SAEINDIA SJEC Collegiate Club was inaugurated on 5th April 2016 under the guidance of Mr. Vijay V. S. and Mr Yathish Kumar K. The two main events/ activities that actively working under this clubs are **SAE Baja team (Team SJEC Racing)** and **SAE Aero team** from 2017 to 2019 These teams have been participating in these events since the past two years, and representing the college nationally. This year, the club has already planned to have 4 additional activities under this club.

Current activities:

◊ **Team SJEC Racing (mBAJA):**

The mBAJA-SAE tasks the students to design, fabricate and validate a single seater four - wheeled Off Road Vehicle powered by an Internal Combustion Engine. This team takes part in various All-Terrain Vehicle Championships where series of events spread over a course of 3 days that test the vehicle for the sound engineering practices that have gone into it, the agility of the vehicle in terms of gradability, speed, acceleration and manoeuvrability characteristics and finally its ability to endure that back breaking durability test. The competition is organised by MAHINDRA and SAEINDIA.

These competitions help us build up our engineering skills and gives us a platform to apply the concepts taught in class. It also helps us to be industry ready and gives us an added edge in any industry. Working in a team, considering people's opinions, facing challenges together and overcoming them helps us be a better team player.

After the outstanding performance by Teams TR1 and TR2, the team TR3 was registered on 14th April 2018 with newly recruited 25 students. Recruitment for Turtle 3.0 was done in the month of March and the recruitment process was done in two stages; Pre-assessment test and an interview round. Top 42 of the 132 students who appeared for the pre-assessment test were chosen. The selected candidates undertook the interview and 13 candidates were chosen.

♦ **New events / activities**

* eBAJA

The eBAJA-SAE is similar to mBAJA but tasks the students to design, fabricate and validate a single seater four - wheeled Off Road Vehicle powered by an Electric Motor. This team takes part in various All-Terrain Vehicle Championships where series of events spread over a course of 3 days that test the vehicle for the sound engineering practices that have gone into it, the agility of the vehicle in terms of gradability, speed, acceleration and maneuverability characteristics and finally its ability to endure that back breaking durability test.

*** EGA- Electrifying Green Aspiration**

Students should design and fabricate a Two Wheeler vehicle that employs two power sources, an electric motor and an IC engine. The IC engine is the main power source and electric motor as a supplementary. First of its kind Two Wheeler Hybrid competition focussing on innovation in Design, Packing, Validation for Two Wheeler, Two Wheeler passenger Engine and Electric Motor Vehicle- Hybrid. This benefits in innovation/ meet functional & Safety criterion. It is a platform for students where they gain knowledge on latest technology trends.

* Effi -Cycle

"EFFI-CYCLE" derived from Efficient-Cycle promote the objective of providing opportunity to the students to conceive, design and fabricate a three wheel configuration vehicle powered by human-electric hybrid power and capable of seating two passengers catering to the day to day mobility needs. The vehicle must be aerodynamic, engineered for performance and safety and ergonomically designed. The objective is to promote innovation and generate consciousness amongst the young engineers towards environment friendly mobility solution.

* Go-karting:

A go-kart, also written as go-cart (often referred to as simply a kart), is a type of open-wheel car. Go-karts come in all shapes and forms, from motorless models to high-powered racing machines. Some, such as Superkarts, are able to beat racing cars or motorcycles on long circuits. Many recreational karts can be powered by four-stroke engines or electric motors, while racing karts use a two-stroke or, rarely, higher powered four-stroke engines. Most of them are single seater but some recreational models can accommodate a passenger.

◊ SAE Aero Design Challenge

SAE Aero Design Challenge competition intended to provide undergraduate and graduate engineering students with a real-life engineering challenge. It exposes participants to the nuances of concpetual design, Manufacturing, System integration and testung. SAE Aero Design features three classes of competition-Regular, Advanced, and Micro. The importance of interpersonal communication skills is sometimes overlooked, yet both written and oral communication skills are vital in the engineering workplace. To help teams develop these skills, a high percentage of a team's score is devoted to the design report and the oral presentation required in the competition.

SAE Team members

Team Captain: Mr. Jayaraj S A (4th year M1)

Team Vice Captain: Mr. Alstan Preesal Lewis (3rd Year M4)

Team Advisor: Mr. Yathish Kumar K, Faculty, Dept of ME

Department	Person Incharge
Chassis	Joshua N Cutinha, Joshua Fernandes,
Steering	Joseph Prashwin Dsouza, Shanel Monteiro Anandh Krishnan, Zayan Azad , Viyol Ezekiel Crasto
Suspension	Jayaraj S A, Chirag Rai, Alstan Preesal Lewis,
Braking	Shriram N Kamath, Arjun Nayak, Hemanth B
Power train	Austin F Mathias, Nihaad Mohammed, Akash Lobo, Orwin Eric Ferrao, Ashley Dsouza
Marketing	Aditya S Rao, Ligina Mary, Suhas Shatry

SAE Achievements in the Academic year 2018-19

SAEINDIA – SJEC Collegiate Club- Achievements 2018-19: Successfully designed and fabricated third series of ATV, TURTLE 3.0 by Team SJEC Racing.

Enduro Students India – A National Level ATV Championship which was held at Pune from 13th to 19th Feb 2019.

- **Overall Ranking** out of more than 120 teams
  - ◊ National level : 24thposition
  - ◊ State level 3rd position
- **Endurance race**
  - ◊ National Level : 16thposition
  - ◊ State level : 2nd position

SAEINDIA

Message from Faculty Advisor:

The biggest risk is not taking any risk. In a world that changing quickly, the only strategy that guaranteed to fail is not taking any risks.

Few inspired mechanical engineering students, who wanted to do something great, teamed up and initiated SAEINDIA- SJEC Collegiate club in this college with the help of the department and college management in the year 2016.

Now two years have passed and we are moving towards accelerated growth path in the journey. It was challenging and fruitful journey that the club has achieved much more in SAEINDIA BAJA events, Aero challenge competitions and Enduro students India competitions. The club had organised many automobile related workshops, webinars and industrial tours for the betterment of the student members.

The first All-Terrain Vehicle turtle 1.0 was completely designed and fabricated by the student members of "Team SJEC Racing" – a team under the banner of SAEINDIA-SJEC Collegiate club in 2016 and achieved greater heights and set a benchmark for turtle 2.0. Turtle 1.0, Turtle 2.0 and Aero teams have brought name and fame to the college.

SAEINDIA-SJEC Collegiate club is dedicated to create a platform for the students to apply their theoretical knowledge in the practical work and make them industry-ready and in coming years, we are expecting more students to join this, one of the few professional engineering societies that helps in their personal and professional growth.

Mr Yathish Kumar K
SAE Faculty Advisor

SAEINDIA BAJA 2019 - A National Level ATV Championship which was held at Pune from 22ndto 27thJan 2019 at NATRIP Pithampur, Indore - MP.

- Successfully completed the event and final results yet to be announced. Only few cars which completed the endurance race including ours.

Placements through ATV Championships:

SAEINDIA BAJA Aptitude Test:

◊ Joshua Cutinho form 4th year Mechanical Engineering student Placed in Anand Group of Companies

◊ Ashley Kevin from third year Mechanical Engineering students got selected for Mahindra and Mahindra R&D and final result yet to be announced.

RC AIRCRAFT DESIGN

March 1-2, 2019

SAEINDIA SJEC Collegiate club in association with Centre of Excellence in Aerospace and Defense (COE A&D), Bengaluru has organized *two day Orientation programme in Aerospace and Aircraft Engineering* for pre-final year students of Mechanical, E&E and E&C branches on 10^{h} and 11th May 2019. First day morning session started at Prerana Auditorium with a brief introduction to COE A&D Bengaluru, its purpose and various courses offered. It was followed by *Hands on session* at CAED lab on *3D simulia work bench* where students modelled and analyzed a mini UAV. Various tools used to design and analyze were introduced. This session was conducted by Mr. Chethan, Trainer from COEAD, Bengaluru. Afternoon session was taken by Mr. Deepak, another trainer from COEAD, Bengaluru on the topic *Finite Element Analysis* which is required to solve flow dynamics problem related to aircraft design.

Second day morning session was dedicated to *"Engineering system design"* topic where product life cycle was discussed by Mr. Debashish from COEAD Bengaluru. Use of 3D Simulia software in scheduling, monitoring and conducting product testing were discussed. Afternoon session included thermal aspects of aircraft design and video series on use of Dassaults 3D-S workbench by some of the OEM companies and latest developments in engineering system design topic.

Total of 43 students attended the program which included 34 students from Mechanical, 8 from E&E branch and one student from E&C branch. It was also informed to students that one month foundation course will be conducted during the month of July/Aug 2019 which is approved by VTU as an internship course.

Message from Student President:

"Take up one idea. Make that one idea your life-think of it, dream of it, and live on that idea. Let the brain, muscle, nerves, every part of your body, be full of that idea, and just leave every other idea alone. This is the way to success" What an inspiring quote from Swami Vivekananda.

When technology changes, it impacts the kinds of things we need. Updates to technology change what we desire; as we desire new things, technology changes to provide them! The same should go for education. Mobile learning, digital literacy, design thinking, imagination, collaboration and creativity and what not! All these skills and content bits that every student would benefit from exposure to and it's not just within the four walls.

The journey of various activities under SAEINDIA SJEC Collegiate club, has already gave a platform to students to express and use their various skills in reality and helped to improve them technical and non-technical fields. These activities are not only help in designing, analysing, building stuffs using technical knowledge, but these also give a vast exposure to teamwork, hands-on experience, industries, marketing and makes them to think outside the box. Yet, I would like to mention that, most of them who were part of these activities could able to put up a strong foundation for themselves for a great career growth in terms of job opportunities, higher studies and even own start-ups!

I would like to thank Mr. Yathish Kumar K, faculty advisor who is the Power source for the students under this club. I thank Management, St. Joseph Engineering College for such a great opportunity and continued support. I thank all technical and non -technical staffs for their help and support. And my special thanks to editorial team!

Happy reading.

Jayaraj S A
Team Captain
Team SJEC Racing

SAEINDIA- AERO DESIGN CHALLENGE

Aero Design Challenge is to promote and develop Indian expertise and experience in unmanned systems technologies. Team Aviators comprised of students from M.E . The team had total of 8 members who were divided into following different groups:

Department	In charge Person
Design Team	Deekshith Poojary, Deekshith B, Immanuel Stephen Maben
Electronics	Karthik V (Captain)
Fabrication Team	Karthik V, Jokshith Dsouza & Melroy Malcom
Documentation Team	Joywin Sequeira, Robin Monis

OBJECTIVES OF SAE ADC :

* Micro Class Aircraft (MCA) should not weigh more than 1.5 kg excluding payload
* Aircraft must be capable of carrying maximum payload keeping the weight of the aircraft as low as possible

ACHIEVEMENTS

- Team Aviators competed in MICRO-CLASS category and secured **8th Rank All over India** in SAE-ISS Aero Design Challenge – 2018 held in Chennai on 11/7/2018 to 13/7/2018 and 4th Rank in Karnataka Region.
- A total of 120 teams across India have participated in the Micro Class category in 2018.

Message from Student President:

As the world moves towards automation and robotics, it is important for an engineering student to have a detailed understanding of automation and robotics. ARC as a club gives a jolt to the members for achieving the same, through major club activities like hands on workshops, projects, training sessions etc. It is a place where students get to interact with students from other departments and thus share and learn interdisciplinary technologies. Members also get to work in a team thereby developing a set of soft skills like teamwork, leadership, organising and much more.

Being a part of this club for the past 2 years has been a great privilege for me. From learning a ton of new things and experimenting with a lot more in the first year to helping the juniors cope up with fast paced technological advancements in second year, ARC has been a great journey. Events organised by ARC target the skills developed by the students, hence their interest in the subject matter is of utmost importance. ARC has been taking part in the Techno-Cultural event Magnovite for the past 3 years, thereby providing a platform for the members to showcase their talent. The projects taken up in the club are the perfect opportunities for the members to work on interdisciplinary technologies and gain a hands on experience on the same. The club is also a place for the students to work on their personal ideas in order to gain an in-depth understanding of different concepts. The club has a well lit room with most of the required equipments and the members can work at any time here.

Currently there are around 15 active members from the 1st and 2nd years. Working with them for almost a year, I do see a bright future for the club. We aspire to bring in new members and encourage them to organise more events and work on numerous projects.

Ahalya
President—ARC Club
VIII Sem E&C

ARC-SJEC INAUGURATION

October 29, 2018

Department of Mechanical at St Joseph Engineering College inaugurated the Automation and Robotics Club "ARC-SJEC" for the academic year 2018-19 on 29th October, 2018, at 03:30 pm in the Fr Fred Memorial Hall, Academic Block- I, SJEC. Mr Pradeep Prabhu, Director (Technical) at Trayam Consultancy Services Pvt Ltd – Mangaluru was the Chief Guest of the programme. Dr Rio D'Souza, Principal, SJEC presided over the function. Rev. Fr. Rohith D'Costa, Assistant Director, SJEC & Dr Joseph Gonsalves, Chief- R&D, SJEC were the guests of honour. Dr. Sudheer M, HOD of the Mechanical Engineering Department, Ms Ahalya Bhat, President of ARC-SJEC club and Mr Hussainer, Treasurer - ARC SJEC were present on the dais.

Ms Nandini G K, welcomed the gathering & introduced the Chief Guest of the function. Dr Rio D'Souza, Principal, SJEC floraly welcomed the chief guest. The ARC-SJEC Club activities for the academic year 2018-19 was inaugurated by lighting of the lamp. Ms Ahalya Bhat, President, ARC- SJEC Club gave a brief introduction about the Club, annual report for the last academic year 2017-18 and enumerated its objectives and activities for upcoming academic year.

The chief guest for the day, Mr Pradeep Prabhu, appreciated the initiative taken up by the college, faculty members and student towards the field of automation & robotics. He also emphased that indulging in interdisciplinary club activities will add a great value to the professional career of a graduate securing a vibrant career in technology driven industries .

Rev. Fr. Rohit D'Costa, addressed the gathering & asked the students to take active participation in the club activities and understand the prime importance of studies & related activities which will help them to excel in their career. Dr. Rio D'Souza, president of the function delivered the Presidential address. In his speech, sir has motivated the students to participate in various activities conducted in the college and urged them to take up interdisciplinary projects & initiative to shape their ideas into realities.

Mr Marshall Silveira, Secretary, ARC-SJEC, proposed the vote of thanks. This was followed by a Technical talk by the Chief Guest on "Industrial Automation & Instrumentation".

ARC-SJEC @ MAGNOVITE 6.0

March 2-4, 2019

The ARC members have shown exception performance at the Magnovite, the annual techno-cultural fest organized by the Faculty of Engineering, Kengeri Campus Christ_University, Bangalore. The event was held on 2—4 of March 2019.

A team of students from the Automation and Robotics Club - ARC-SJEC participated in this fest and have won the Overall Championship Award.

Message from ARC Staff coordinator

The Automation and Robotics Club (ARC-SJEC) continues to offer its members a platform to develop innovative solutions to societal problems. The Club activities for the year 2018-2019 was inaugurated by Mr Sandeep Prabhu of Trayam Consultancy Pvt. Ltd., on 29th October 2018. While appreciating the Club for its activities, Mr Prabhu stressed upon the need for students to engage in multidisciplinary projects and gain multidisciplinary skills for excelling in their technology driven career. ARC-SJEC, while being driven by the Mechanical Engineering Department, cuts across disciplines in its functioning. With student members and faculty coordinators from all Departments, the Club brings together students from all branches in its activities.

This year, the Club was engaged in few projects that showcased ingenuity and creativity of our students. Karthik V (ME) and Yamen Akhtar (CSE) brought out their VTOL – Vertical Take-Off and Landing model that was exhibited in TIARA. They are also gearing up to showcase the model in National Level Aero Events that are coming up. The project on developing an in-house 3D printer has had obstacles in its journey, however, Joshua and team have taken forward the project. Mohammed Al Tamash and team brought laurels to the Club and the Institution with their project on Prosthetic Arm. They secured second place in Technova 2019 and also sponsorship from KSCST. They are awaiting the results of KSCST SPP Exhibition held at MITE - Mangaluru.

The contingent from SJEC comprising largely of ARC SJEC participated in Magnovite – 2019, the Techno-Cultural Fest at Christ University (Faculty of Engineering) and secured the Overall Championship Award. The Club is proud of their achievements. Yamen Akhtar also brought laurels to the Club and College by winning third place in the National Level Drone Racing Competition held as part of the 21st Indian Society for Technical Education (ISTE) National Students Convention, at LD College of Engineering – Gujarat on January 29 and 30. The club also organized a Pick and Place Bot Programming Competition during the annual Technical Fest TIARA.

Going forward, the club aspires to work on projects related to waste segregation and biomedical applications. The Club is grateful to the Management of SJEC for supporting the Club in its projects and other activities.

Dr Binu KG
Associate professor
Dept of ME

ISIE Drive Your Dreams® INDIA
IMPERIAL SOCIETY OF INNOVATIVE ENGINEERS

"Difficult roads often lead to beautiful destinations", this is a quote that I have believed in the most during my journey as a team member and also the Captain of the Solar Vehicle team of our college . The journey that we embarked two years ago was filled with hardships and challenges that we as a team worked tirelessly to overcome. The results of our hard work was visible to the world when we secured All-India Rankings of 17 and 11 in the Electric Solar Vehicle Championship and Future Solar Design Championship this year.

When we initially started the project we knew next to nothing about it . As the days went by we not only learnt the technical aspect of the vehicle manufacturing process but also essential core soft skills like leadership, team work, stress management etc.

A word of advice that I would share with my juniors would be " Never give up . Never, ever give up ".You will face failures and challenges when you do something new, something different. This sets you apart from everyone our there. It's up to you and you alone to convert the pain and disappointments of failures into fuel for the burning desire of success you have within you. Indulge yourself in activities that you are passionate about. Join a club or an association. If you do not find the one that you can relate to ,start your own association. Be a leader . Be the change .

Great things begin here at St Joseph Engineering College. Wish you all the very best .

Vybhav Shetty
Captain—ISIE
VIII SEM , M4

ISIE – SJEC Collegiate Club: Achievements 2018-19:
Successfully designed and fabricated first Solar Car at St Joseph Engineering College and is being transported to Punjab for two National Level Solar Car Championships.

- **Electric Solar Vehicle Championship** a national level solar car competition which will be held from 25th to 31st March 2019 at Ambala, Punjab.

- **Future Solar Design Challenge**, a national level solar car competition hich will be held from 13th to 16th March 2019 in Chandigarh Punjab.

Virtual Round Results:

- **Electric Solar Vehicle Championship – Secured 1st in the sate 4thNational**
- **Future Solar Design Challenge- Secured 2nd in the sate 4th National**

Photographs taken during the event

INDUSTRY INTERACTION

Internships

Invited lectures

Webinars

Industrial visits

Training

Workshops

MOU's

Industry Interaction Cell

Faculty Coordinators

- Chiranth BP
- Santhosh H

Students Coordinators

- Vikas Shetty
- Varun Kumar

The department of Mechanical Engineering has a set up a committee to organize and arrange various activities to strengthen the Institute-Industry relationship and to expose our students to organizational, functional and technical aspects of the industry. Industry – Academia partnership is vital in promoting employability readiness of graduate engineers.

Vision Statement of IIC:

"We will strive to excel as the best Industry Interaction Cell in the academic system of this region by promoting constant interaction and co-operation between Academia and Industry".

Mission Statement of IIC:

Work towards strengthening the Department's relationship with industry through constant interaction and develop a mutually beneficial partnership.

Objectives of the Cell:

- Promote faculty and students' interaction with industry personnel.
- Offer a platform for SJEC (Mechanical Engineering) - alumni from Industry to interact with current students and faculty.
- Organize invited lectures of Industry Personnel on key specializations to address curriculum gaps (course objectives).
- Organize industrial visits for students.

MOU

SKF Boilers

Dec 07, 2018

Address:

SKF Boilers and Driers Pvt. Ltd.
129,Bannadka,
Belvai - 574 213,
Mangalore, Karnataka.
Ph:08258-298291,298292,298021.
Mobile: +91-7899151291.
Email: skfboilers@yahoo.com.

The Department of Mechanical Engineering at SJEC signed a Memorandum of Understanding with SKF Boilers and driers Pvt Ltd – Moodbidri on 7th December, 2018. The MOU relates to the training and use of Precision Manufacturing for the faculties and the students. The MoU was signed in the presence of Mr Prajwal Achar, Technical Director of KGTTI, Rev. Fr Wilfred Prakash D'Souza, Director of SJEC, Dr. Rio D'Souza, Principal of SJEC, Rev. Fr Rohith D'Costa, Assistant Director of SJEC, Dr Joseph Gonsalvis, Chief R&D, Ms Diana Monteiro Collaboration Officer and Dr Sudheer M, Professor & Head of Mechanical Engineering at SJEC.

As per the agreement, the parties will work towards training the Mechanical Engineering students & Faculties of SJEC towards becoming skilled professionals. Dr Sudheer M, HOD – ME, opined that this MOU will work in the lines of Skill India campaign launched by the GOI to generate skilled engineers. Dr Sudheer also thanked SKF for their interest and participation in this process. Cooperation:

The activities and services for the project shall include

Service to be rendered by SJEC include

- ◊ Provide publicity among the students of SJEC regarding the Industrial training in Manufacturing techniques provided by SKF
- ◊ Arrange internship training for students at SKF plant on mutual consent
- ◊ Encourage faculty members to interact with SKF for industrial visits, shop-floor problem solving.

MOU

KGTTI, Mangaluru

Feb 25, 2019

St Joseph Engineering College (SJEC), Vamanjoor, Mangaluru, signed a Memorandum of Understanding (MoU) with the Karnataka German Technical Training Institute (KGTTI) on Monday, 25th February 2019. The MoU was signed in the presence of Mr Giridhar Salian, Director of KGTTI, Rev. Fr Wilfred Prakash D'Souza, Director of SJEC, Dr. Rio D'Souza, Principal of SJEC, Rev. Fr Rohith D'Costa, Assistant Director of SJEC, Mr. Amar Saxena, GIZ Expert at KGTTI and Dr Sudheer M, Professor & Head of Mechanical Engineering at SJEC. The two organizations expressed their intention to cooperate within the scope of their mandates and sphere of competences to work with youth and for youth, towards skill development of engineering students. The MoU is made for imparting skill development training under different training programs organized by KGTTI at SJEC for its students and staff.

According to MoU, the overall objective of the KGTTI is to provide skill development, hands-on-training in advanced technology and to enhance employment opportunities of engineering students..

About

Karnataka German Technical Training Institute (**KGTTI**) is established by Karnataka German Multi Skill Development Center (**KGMSDC**), a society promoted by **Government of India** and **Government of Karnataka** with Technical Support of German International Services (**GIZ-IS**). KGTTIs are set up at Bengaluru, Kalaburagi, Mangaluru, Hubballi and Belagavi.

Govt. ITI(Women) Campus,
Airport Road, Konchady Post,
Mangaluru, Karnataka - 575016

http://mangaluru.kgtti.com/home

:0824-2211477, 0824-2981877

INDUSTRIAL VISIT

Adani power plant. Udupi

Nov 12, 2018

About

UPCL is the first independent power project (IPP) using 100% imported coal as fuel in the country and was awarded the Gold Shield award for early completion of Thermal power project Unit-1 from Ministry of power, Government of India in FY 2010-11 and also the prestigious Golden Peacock Environment Management Award in FY 2014-15.

The Industry Interaction Cell of Mechanical Engineering organized one day Industrial visit for second year students to "Udupi Power Corporation Ltd, Padubidri ". Total of 45 students along with two staffs took part in the visit. Visit was scheduled on 12/11/2018 at 10.30 A.M. Mr. Chiranth and Mr Akshay coordinated the visit.

The main objective of this visit is to

1. Give an overview of the different sections in the plant.
2. Enhance their knowledge on the steps involved in the generation of the power.

Udupi Power Corporation Limited is a 2 X 600 MW imported coal based power project in the Udupi District of Karnataka. Situated in the western coastal region of India, the plant is situated in the village of Yellur, between Mangalore and Udupi.
UPCL is the first independent power project (IPP) using 100% imported coal as fuel in the country and was awarded the Gold Shield award for early completion of Thermal power project Unit-1 from Ministry of power, Government of India in FY 2010-11 and also the prestigious Golden Peacock Environment Management Award in FY 2014-15.
The Udupi Power Project supplies 90% of the power it generates to the State of Karnataka and 10% to the State of Punjab.

Mr. Vineeth, UPCL welcomed and explained main parts of the UPCL. Following were the sections which he briefed.

1. Coal Handling Plant (CHP)
2. Water handling plant (DM)
3. Ash handling plant (AHP)
4. Switch yard
5. Cooling house
6. Flu gas De-Sulphurisation (FGD)
7. Effluent treatment plant (ETP)

This visit enhanced students knowledge on

- The architecture of the power plant, the way various units in which they are linked and the way how whole power plant is controlled
- It has allowed an opportunity to get an exposure of the practical implementation to theoretical fundamentals.

Yelluru village, Pillars Post, Dist.574113, Padubidri, Karnataka

www.adanipower.com

+91 79 2555 7555
Fax:+91 79 2555 7177

INDUSTRIAL VISIT

Varahi Hydro power plant & Mani dam

Feb 25, 2019

The Industry Interaction Cell of Mechanical Engineering organized one day Industrial visit for final year students to "**Varahi hydro power plant, Hosaangadi and Mani dam, Yadur**". Total of 21 students along with one staff took part in the visit. Visit was scheduled on 25/02/2019 at 6.30 A.M - 7.00 P.M. Mr. Chiranth B.P Assistant professor, Dept of ME coordinated the visit.

The main objective of this visit is to

1. Give an overview of the different part in the hydro power plant.

1. Enhance their knowledge on the working of hydro power plant.

Varahi Hydro Electric Project is a 4 Units x 115MW = 460 MW hydro power plant. The river Varahi takes its birth at a height of 730 m in the Western Ghats at Hebbagilu, near Agumbe in Shimoga District. Varahi is Karnataka's first underground powerhouse – a key milestone in the corporation history of KPCL.

Varahi Hydro Electric Project, initially conceived as a surface power house at the blueprint stage. Later converted into an underground Powerhouse due to Economical and Concern for environment protection. Varahi was started with Two different stages. Stage I of the Varahi Hydro Electric Project has a total installed capacity of 230 MW and Stage II of the Varahi Hydro Electric Project has a total installed capacity of 230 MW contributing 1100 MU annually. This consists of 4 x 115 MW generating Units at Varahi underground Powerhouse. We also visited Mani Dam (Dam attached power plant) where two 4.5 MW units are set up.

This visit enhanced students knowledge on

- Idea of the working environment of the hydro power station.
- Parameters considered for the selection of turbine in the plant.
- Working principle of Pelton and Kaplan turbine.

Address

Udupi District,
Hosangadi, Karnataka
576282

Hydropower is the leading renewable source for electricity generation globally, supplying **71%** of all renewable electricity.

INTERNSHIP TRAINING - ACADEMIC YEAR 2018-19

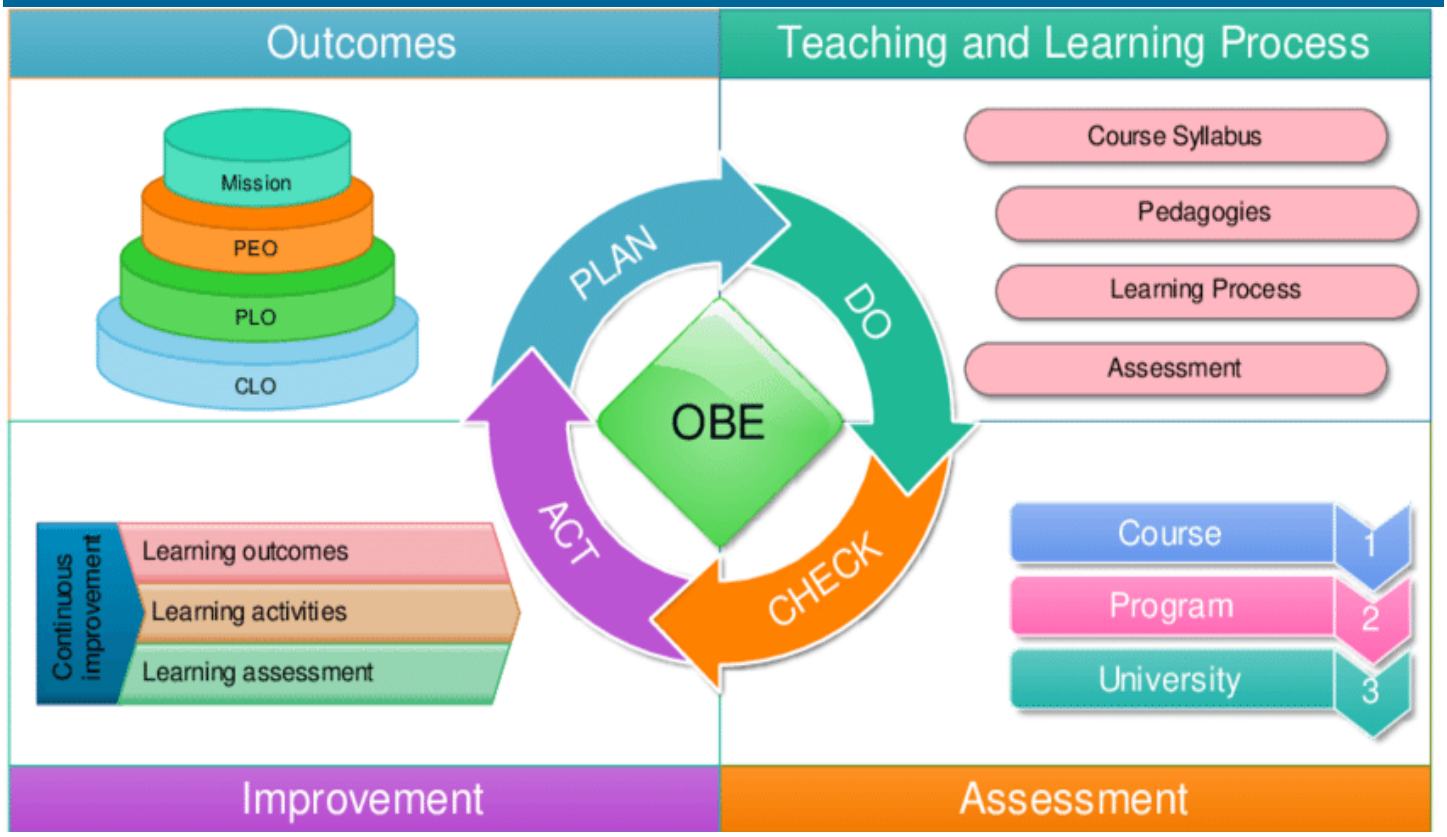
A total of 150 students form final year and pre-final year BE - Mechanical Engineering programme have attended internship training for the academic year 2018-19 in various companies listed below during the vacation breaks in the month of July and January. The internship training spanned from 1 to 4 weeks based on the companies requisite. The students were encouraged to attend the internship training in any company or industry as per the individuals interest.

List of Companies / Industries the students have completed the internship training:

Sl. No.	Company	No of Students
1	Advaith JCB, Mangaluru	5
2	Akshaya Motors- Hero Motocorp Pvt. Ltd,	1
3	Amana Toyota, Kasargod	2
4	ARVIND MOTORS (P) LTD, Mangaluru	4
5	Autoclass, Bangalore	1
6	BASF, Mangalore, Karnataka	4
7	BEML limited , Mysore	1
8	Bharat Forge Limited, Pune	2
9	Bharat Heavy Electricals Limited	1
10	Bhoruka Extrusions Private Limited, Mysore	1
11	CARDOLITE, Mangaluru	1
12	Centre of Excellence in Aerospace and Defense, Bengaluru	12
13	Century automobile(SML ISUZU), Manga-	2
14	D&D Smartlabs, Mangaluru	2
15	Dakshina Kannada co-operative milk producer union limited, Mangaluru	3
16	Eram motors pvt Ltd, Kasargod, Kerala	1
17	Family plastics and Thermoware Pvt Ltd,	1
18	Hebich Technical Training Institute	1
19	Hero Sai Motors, Bijapur	1
20	JCB Advaith Motors, Mangaluru	2
21	Jewelex Ind. Pvt. Ltd, Mumbai	1
22	KSRTC MANGALURU	6
23	Mahindra & Mahindra Limited- 'Karnataka Agencies', Mangalore, Karnataka	8
24	Karnataka Power Corporation Ltd, Karwar	2
25	Kedium Plywood and Boards	3
26	Lamina Foundries Limited, Nitte	11
27	M.N Industries, Bengaluru	5
28	M/S Larsen & Toubro Ltd	1
29	Mandovi Motors Pvt Ltd, Mangalore, Karnataka	12
30	Mangalore Chemicals and Fertilizers, Mangaluru	6
31	Mangalore PUF Industries Pvt. Ltd.	1
32	Metal Storage Systems Pvt. Ltd.	1
33	MRPL, Mangalore, Karnataka	4
34	Naveen Tractors	1
35	NEKRTC, Kudligi	1
36	NITYANAND INFRASTRUCTURE LTD, Mumbai	1
37	Nuclear Power Corporation of India Limited, Kaiga	2
38	ONGC Mangalore Petrochemicals Limited	4
39	Perfect technologies Pvt Ltd Pune	2
40	Plant-Tech Industrial Services Ltd	3
41	RBSSN Private limited, Sankalapuram	1
42	SB Honda Pvt ltd	1
43	SAI MOTORS, Hippargi	1
44	SKF Boilers And Driers, Mangalore, Karnataka	3
45	Sri kalikamba fabricators	1
46	Swaraj Mazda Limited, Mangaluru	3
47	TATA motors- arvind motors, Mangalore, Karnataka	1
48	Udupi power corporation limited, Udupi	1
49	The general engineering works, Honavar	1
50	V&G Industrial Testing Laboratories, Mangalore, Karnataka	12
51	Volvo Peenya industry Bangalore	1
52	West Coast Fishnet, Manipal	1
	Total	150

* the participation certificates of the students in the internship training and the reports are maintained in the department files

OUTCOME BASED EDUCATION



Department of Mechanical Engineering has always made its best efforts in implementing OBE aspects as required by NBA. We are proud to inform that Department of Mechanical Engineering has been reaccredited for the third time from June 2019 to June 2022. This has been possible due to the excellent support we received from each and every staff member during the accreditation process. Efforts are also in progress to implement the new Teaching Learning Practices and adopt the best possible pedagogies suitable for engineering education. Active involvement of our faculty in Engineering Education Certification program from IUCEE and internal training from IQAC are ensuring that Department of Mechanical Engineering is progressing in the right direction in achieving full Accreditation status from NBA in the coming years.

Mr Vijay V.S
Programme Coordinator

ACCREDITATION PROGRAM COORDINATORS

Mr Vijay V S

Mr Rolvin S D'Silva

Mr Orville Sutari

Mr Poornesh M

The Programme Assessment Committee (PAC) meeting was held on Saturday, 06th October, 2018 at 03:00 pm in the Department Office. The DAB is a committee consisting of representatives from the key stakeholders of the program.. The PAC is formed with the objective of interacting and maintaining the liaison with the key stake holders such as students, faculty, Alumni and parents. The PAC monitors and reviews the activities of the program.

The Meeting started at 3:20 pm and Mr. Vijay V.S briefed about the accreditation and outcome based education. He also gave an insight on the progress of course assessment done during the semester. A detailed discussion was held regarding review of minutes and actions suggested during the previous PAC and DAB meetings

Following changes have been done for the academic year 2018-19.

· ***Module Coordinator*** **has been replaced by Course Plan Review Committee to ensure correct mapping of POs and to include the appropriate assessment tool for respective PO's.**

- ***Assessment Tool Review Committee*** **has been formed for 2018-19 to ensure the quality of assessment tools used. All course coordinators should take a signature in review form for any type of assessment tools used.**
- **Modifications in COs** in many subjects are done due to change in syllabus in third year and final year and also due to change in CO-PO mapping.
- Overall **Course-PO articulation** matrix (including first year).

Following members were present.

Sl. No.	Name	Designation	Role
1	Dr Sudheer M	Professor & Head	Criteria Head
2	Dr Raju K	Professor	Criteria Head
3	Dr Vincent Crasta	HOD, Physics	First Year Faculty
4	Dr James Valder	Associate Professor	Criteria Head
5	Dr.Binu KG	Associate Professor	Criteria Head
6	Dr.Shreeranga Bhat	Associate Professor	Chief Accreditation Coordinator
7	Dr Rajesh Shetty	Associate Professor	Criteria Member
8	Mr. Rudolf D'Souza	Assistant Professor	Workshop Superintendent
9	Mr Sharun Mendonca	Assistant Professor	Criteria Head
10	Mr.Sampath Kumar B.	Assistant Professor	Senior Faculty
11	Mr. Vijay V S	Assistant Professor	Program Coordinator (2017-18)
12	Mr.Rolvin S D'Silva	Assistant Professor	Program Coordinator (2017-18)
13	Mr Orville Sutari	Assistant Professor	Program Coordinator (2017-18)
14	Mr Poornesh M	Assistant Professor	Criteria head and First year Program Coordinator
15	Mr.Ravikanth Prabhu	Assistant Professor	Virtual Lab coordinator
16	Mr.Pavana Kumar B	Assistant Professor	Previous Program Coordinator
17	Mr Joel D'Mello	Assistant Professor	Project coordinator
18	Mr Chiranth B P	Assistant Professor	IIC Coordinator
19	Mr Neil Vaz	Assistant Professor	Internship Coordinator
20	Mr Vinoothan K	Assistant Professor	Alumni Coordinator
21	Mr Manoj Mascarenhas	Foreman	Technical Staff Representative
22	MS Jayashree	Lab Instructor	Technical Staff Representative
23	Mr. Christopher Cutinho	Lab Instructor	Technical Staff Representative
24	Mr Preetesh	Technician	Technical Staff Representative
25	Mr Jayaraj S A	Final year	Student Representative
26	Mr Adarsh	Final year	Student Representative
27	Mr Akash Lobo	Third year	Student Representative

THE PROGRAMME ASSESSMENT COMMITTEE MEETING

The Department Advisory Board (DAB) meeting for the year 2017-18 was held on 13th October 2018 at 10:30 AM in the HOD Chamber, Department of Mechanical Engineering - SJEC.

Following decisions were taken during this DAB meeting.

- Conduct more activities to bring awareness on ethical practices.
- Activities should be subject specific and mapped to CO and POs.
- Suggestion from employer representatives to conduct activities related to PO8: Professional Ethics and PO9: Teamwork using rubrics and feedback.
- Use of Plagiarism software as a tool for PO8: Professional Ethics.

The following members were present for the meeting.

Sl. No.	Name	Category
1	Dr Sudheer M	Chairperson
2	Rev. Fr Rohith D'Costa	Management Representative
3	Dr Joseph Gonsalvis	Management Representative
4	Mr Vijay V S	Programme Coordinator
5	Mr Rolvin S D'Silva	Programme Coordinator
6	Mr Orville Sutari	Programme Coordinator
7	Mr Poornesh M	First Year Programme Coordinator
8	Dr Raju K	Senior Faculty
9	Dr Shreeranga Bhat	Senior Faculty
10	Dr Binu K G	Senior Faculty
11	Mr Prashanth Kumar	Senior Faculty
12	Mr Rudolf D'Souza	Workshop Superintendent
13	Mr Vinoothan K	Alumni Coordinator
14	Mr Neil Vaz	Internship Coordinator
15	Mr Chiranth B P	IIC Coordinator
16	Mr Joel D'Mello	Project coordinator
17	Mr Somashekaharan	Adjunct Faculty
18	Mr Vittal M Poojary	Industrial Representative
19	Mr Mohith Shetty	Employer Representative
20	Mr Akshay N H	Alumni Representative
21	Mr Lohith B Y	Alumni Representative
22	Mr Arjun P M	Alumni Representative
23	Mrs Pavitra	Parent Representative
24	Mrs Jacintha Pinto	Parent Representative
25	Dr Vincent Crasta	HOD - Physics
26	Dr Ramananda H S	HOD- Mathematics
27	Mr Chirag I P	Student Representative
28	Mr Jayaraj S A	Student Representative
29	Mr Raison D'Souza	Student Representative

COURSE PLAN REVIEW COMMITTEE

This committee consists of following members has been formed to monitor the quality of course plan.

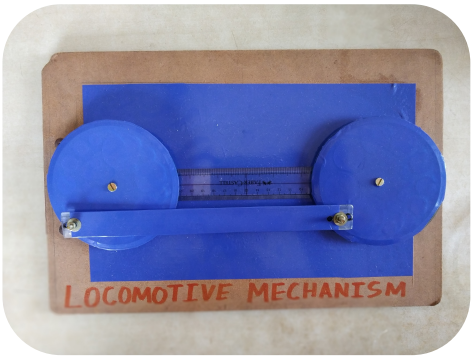
Sl No	Name	Designation
1.	Dr Sudheer M	HOD
2.	Dr Shreeranga Bhat	Chief Accreditation coordinator
3	Mr Vijay V S	Program Coordinators
4	Mr Rolvin D'Silva	
5	Mr Orville Sutari	

NEW PEDAGOGIES INITIATED

PROJECT BASED LEARNING TO DEVELOP DEEP CONTENT KNOWLEDGE

Mr. Pavana Kumara B and Mr. Karthik Madhyastha, Assistant Professors of Mechanical Engineering, SJEC had implemented a activity called course project which was a project based learning, through the subject Kinematics of Machines for the students of 4th semester. In this methodology various student groups were formed and they were asked to follow following guidelines:

- A group were made to identify any one mechanism that is used in various machines.
- The working model of this mechanisms had to be built by each group.
- Each group should do presentation for about 10 minutes followed by 02 minutes of question answer session where all the members of group should actively take part.
- Prepared model should be displayed during the presentation.
- Group can make use of ppt or any other method for the presentation.
- Evaluation was done and the marks were considered in awarding the internal marks. Evaluation was based on presentation skills, model prepared, innovation.
- A consolidated report of 2 to 3 pages must be submitted by the group on the day of presentation. The report should contain Introduction, Method and steps incorporated in designing and developing the model, Working, Applications, Finance management and Conclusion.



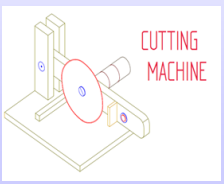
This activity it was observed that students work on their project over an extended period of time - from a week up to a semester - that engages them in solving a real-world problems or answering a complex question. They demonstrated their knowledge and skills by developing a mechanism or presentation for a real audience. As a result, students had developed deep content knowledge as well as critical thinking, creativity, and communication skills in the context of doing an authentic, meaningful project. Project Based Learning unleashes a contagious, creative energy among students.

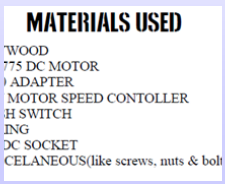
Mr Pavana Kumara B

Mr Karthik Madhyastha

MODEL BASED LEARNING

Mr Chiranth, Assistant Professor of Mechanical Engineering, SJEC had implemented a activity called Model based learning , through the subject Machine Tools and operations for the students of 3rd semester. In this groups were made and each group were assigned with one machine tool. Students had to design, list the materials required , estimate the cost for fabrication and fabricate the assigned machine tool in the given duration of 3 months. Model based learning improves the students to work in group, they understand basics of fabrication work etc,. One such model is shown done by students is shown below.





NAAC COORDINATORS

Mr Swaraj Lewis

Dr James Valder

Mr John Paul Vas

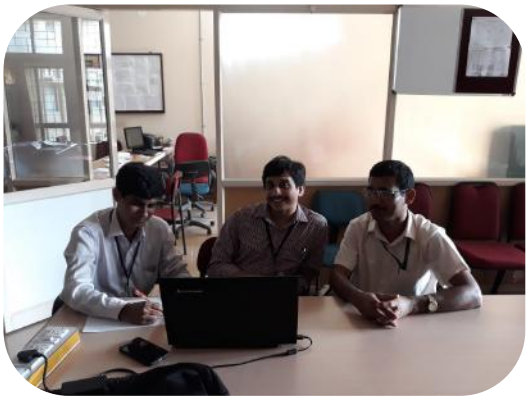
NAAC IN MECHANICAL ENGINEERING

The National Assessment and Accreditation Council (NAAC) is an organization that assesses and accredits higher education institutions (HEIs) in India. It is an autonomous body funded by University Grants Commission of Government of India and has headquarters in Bangalore.

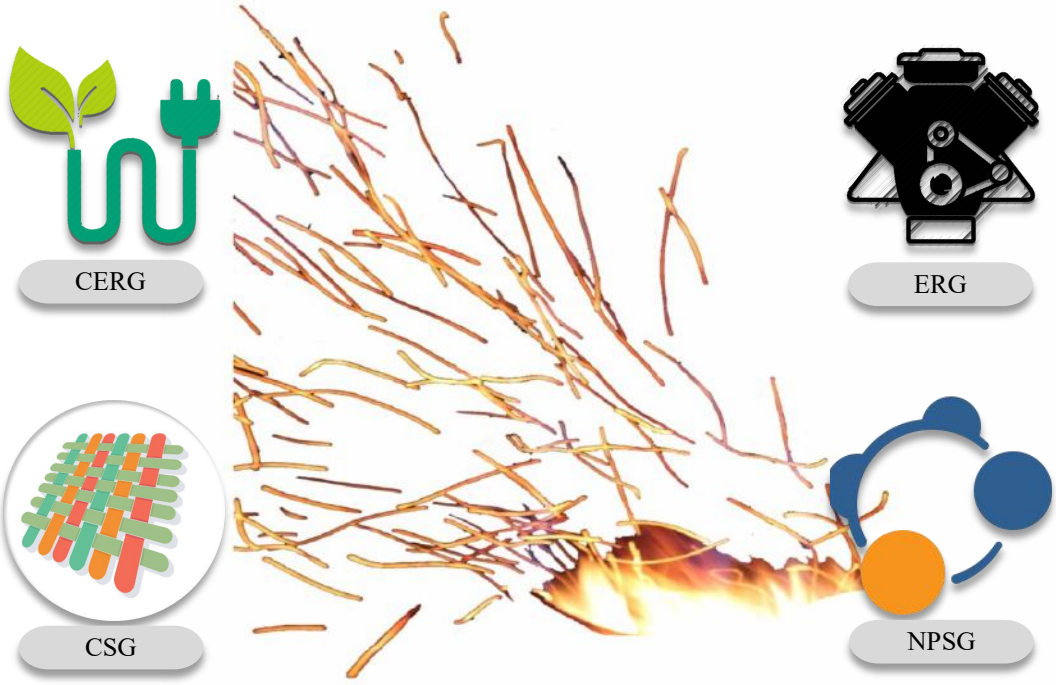
It is actually the institute's responsibility to opt for the NAAC assessment. The grade of an institution denotes the standard of quality as set by the accreditation agency. NAAC accreditation is a continuous process.

Progress towards NAAC in Mechanical Department of SJEC

The NAAC work in the Mechanical Department has been initiated and three coordinators Dr. James Valder, Mr. John Paul Vas and Mr. Swaraj Dominic Lewis are nominated to handle the NAAC related works. The relevant documents and information are collected with cooperation of department faculties. The department has done a quite progress in the work and documents are ready for submission to the Management. Management collects similar documents from other Departments and the consolidated data will be submitted to NAAC shortly.



RESEARCH ACTIVITIES



RESEARCH CENTER

The Research Center in the Department of Mechanical Engineering explores the forefront of technologies that encompass the traditional aspects of the field while embracing and expanding the boundaries of new science and technology, thus providing an environment for advancing both education and research.

The research center was established in 2008 recognized by VTU-Belagavi with an objective to promote integrated, interdisciplinary research & education programs and expedite transition of research results into marketable products.

Areas of Research

- ◊ Energy & Sustainability
- ◊ Advanced Manufacturing
- ◊ Material Science
- ◊ Nanoparticle Science and Technology
- ◊ Engine - Combustion and Alternate Fuels
- ◊ Computational Fluid Dynamics

A spacious Research Center in the Dept. of Mechanical Engineering was blessed by Rev. Fr Joseph Lobo, Director – SJEC on 14.09.2016. The Research Center includes separate room for Research Head and Research Scholars and also a Discussion room.

Advanced Manufacturing Research

The Advanced Manufacturing Research in SJEC is highly interdisciplinary in nature spanning the fields of material science, heat and mass transfer, fluid dynamics and mechanical design. Current areas of investigation in the field of process innovation and development include spray forming of Al-Si based piston alloys and spray casting of Al-Si alloys with Fe and Cu as alloying elements. The equipment's currently available for advanced manufacturing research are Pin on Disc wear testing set up, LEICA Optical Microscope, Hardness Testing Machine, Melting Furnace, Probe Sonicator and Specimen Polishing Machine.

Clean Energy Research Group (CERG)

The mission of the Clean Energy Research Group (CERG), SJEC Mangalore, is scientific research, technical development and education for a clean and sustainable environment. CERG involved in fundamental investigation into new environmentally clean energy sources and systems via experiments and numerical simulations with particular emphasis on and aiming at applications in the Automotive, Aerospace and Defense, Naval, Industrial and Power grid sectors, i.e., electric/fuel cell powertrain, fuel cell APU, UAV, Air Independent Propulsion Systems (AIPS), hydrogen production and storage systems, batteries, and other non-conventional energy sources such as solar, wind etc. CERG uses High Performance Computing facilities equipped with STAR-CCM+ and ANSYS software's for research.

Ongoing Projects:

- ◊ Metal Hydride Bed for Hydrogen Storage
- ◊ Fuel Cell Modeling and Simulation

Engine Research Group (ERG)

OBJECTIVES

This group is for formed with the following objectives:

- ◊ To provide common platform for the researcher on engines.
- ◊ To share knowledge among members
- ◊ To develop innovative ideas in the research on engines
- ◊ To develop research facility on CI engine
- ◊ To increase publications on engine and renewable fuels

AREA OF FOCUS

- ◊ Modification of engine & fuel
- ◊ Control of engine (engine electronics)

PLAN OF ACTION

- ◊ Minor Modification in the engine
- ◊ Suggested to have collaboration with GTTC, Baikampady.
- ◊ Getting technical knowledge from the experienced technicians
- ◊ Promoting competition among the students of the region for developing innovative ideas to control pollution.
- ◊ To have discussions with different patents on the engine
- ◊ In house development of controlling of engine
- ◊ To promote project ideas for undergraduate students
- ◊ To have a collection of literature on IC engines.

The Team ERG

Chief Advisor	Dr Joseph Gonsalves
Advisory Committee	Dr K Raju Dr Sudheer M Dr Purushotham Chippar
Group Mentor	Mr Prashanth Kumar
Members (Faculty)	Mr Rolvin D Silva Mr Sharun Mandenca Mr John Paul Vas Mr Sushanth Gowda Mr Vijay V.S Mr Santhosh Ms Ramya M

SHORT TERM PLAN

- ◊ Experiments with minor modification on engine.
- ◊ Experiments with alternate fuels.

LONG TERM PLANS

- ◊ Setting up of Automated control system for engines.
- ◊ Consultancy Services to Research scholars.

EXPECTED OUTCOME

1. Build up of a collection of literature on Engine research, modification of fuels and related fields.
2. Guiding projects for undergraduate students in the field of I. C. Engines and alternate fuels.
3. Publishing journal papers/ Conference papers.
4. FDP's on Engine and fuel related issues.

WORK UNDER PROGRESS

There are 5 faculty members and 20 students involved in the research work. The research activity involved in this group is classified into three different streams.

- ◊ **Performance analysis with CRDI engine**

  Mr Prashanth Kumar has conducted study on CRDI engines with mahua methyl ester blended with diesel; different types of combustion chambers are used in the study.

- ◊ **Modification of fuel with additives**

  Mr Rovin D'silva is involved in research with nano particle blended bio-diesel on CI engine.

- ◊ **Performance analysis of conventional engine with alternate fuels**

  Mr Sushanth G is involved in study of vetira indica bio-diesel blend with diesel on CI engine.

In addition to this research on "biodiesel from waste plastic and its performance" and "Performance with preheated diesel at high temperature" is being carried out by the students under the guidance of Mr John Paul Vas and Ms Ramya M.

Nanoparticle Study Group (NPSG)

This group was formed on 13th Feb 2016 under the leadership of Dr Binu K.G. The main intention of forming this group is to bring the faculties with common research area together for discussion. Meetings were held during which the mentor briefed on topics related to nanoparticle dispersion, dispersion methods, surfactants, stability of Nanofluids and its various applications. The faculty members used to discuss about the literatures review done by them in their field of research. A few student members are also involved in the study group who have taken up project work in the field of nanoparticle science.

The Team NPSG	
Chief Advisor	Dr Sudheer M Dr Raju K
Group Mentor	Dr Binu K.G.
Members (Faculty)	Mr Rolvin D Silva Mr Sharun Mendonca Mr Yathish K.

OBJECTIVES OF THE STUDY GROUP

◊ Act as discussion forum for in-house faculty members and research scholars working in the field of application of nanoparticles in Mechanical Engineering.

◊ Develop in-house expertise in the area of nanoparticle synthesis and applications.

◊ Conduct student activities related to nanoparticle science, to contribute as Content beyond the syllabus.

◊ Define academic projects on nanoparticle applications in Mechanical Engineering for students.

EXPECTED OUTCOMES:

◊ Literature bank on nanoparticles and nanofluids.

Details:

- A Google drive account with SJEC domain will be initiated and all literature pertaining to nanoparticle science will be stored and access granted to members.
- Relevant papers to be added by faculty members after discussion in weekly meetings.

◊ Teaching and assessment resources on Applications of nanofluids in Mechanical Engineering – An overview.

◊ List of ideas for continued research on applications of nanoparticles in mechanical engineering.

PROPOSED FUTURE ACTIVITIES:

◊ Contribute to FDP sessions during semester break.

◊ Arrange invited lectures on nanoparticle science in collaboration with Departmental Associations.

◊ Submit research proposals to State and National funding agencies based on on-going research of the Group Members, to build research facilities in the Department related to nanoparticle applications.

◊ Generate publications in the field of nanoparticle science.

PROJECT PROPOSAL SUBMITTED FOR EXTERNAL FUNDING

Dispersion and rheological studies of inorganic nanoparticle additives in oils and fuels.

(Submitted to VGST K-FIST Level 1)

Composite Study Group (CSG)

OBJECTIVES

- ◊ To provide common flat form for the researchers on Composite Materials
- ◊ To develop research facility on processing and testing of composite materials
- ◊ To enhance the outcome in terms of publications and proposals in the field of Composites

AREA OF FOCUS

- ◊ Metal Matrix Composites (MMCs): Preparation, Testing, Analysis and Applications
- ◊ Polymer Matrix Composites (PMCs): Preparation, Testing, Analysis and Applications

The Team CSG	
Chief Advisor	Dr Joseph Gonsalves
Advisory Committee	Dr K Raju Dr James Valder Dr Shreeranga Bhat
Group Mentor	Dr Sudheer M
Members (Faculty)	Mr Ravikantha Prabhu Mr Noel Deepak Shiri Mr Pavana Kumara B Mr Poornesh M

SHORT TERM PLAN

- ◊ Awareness about Novel Materials " Composites" among students
- ◊ Promoting interactions between staffs and students to develop new composites including nano-composites, bio-composites etc.

LONG TERM PLANS

- ◊ Setting up of standard fabrication facility for processing MMCs and PMCs
- ◊ Mechanical and Computation analysis of composites

EXPECTED OUTCOME

- ◊ Collection of Literatures on Composite Materials
- ◊ Guiding projects for undergraduate students in the field of Composites

RESEARCH SCHOLARS

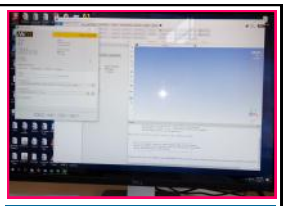
Research Scholar	Supervisor	Area of Research
Mr Prem Kumar (Ext)	Dr Joseph Gonsalvis	IC Engine
Mr Shyam Prasad (Ext)	Dr Joseph Gonsalvis	IC Engine - Modification & Performance Analysis
Mr Prashanth Kumar	Dr Raju K	IC Engine - Biofuel Combustion Characteristics
Mr Suresh K V (Ext)	Dr Raju K	IC Engine
Mr Harish K (Ext)	Dr Raju K	Materials
Mr Sushanth H G	Dr Raju K	IC Engine - Biofuel Combustion Characteristics
Mr Santhosh Goudar (Ext)	Dr Raju K	Materials
Mr Rolvin Sunil D'Silva	Dr Thirumaleshwara Bhat	IC Engine - Nanoadditives
Mr Ravikantha Prabhu	Dr Thirumaleshwara Bhat	Composite Materials
Mr Sharun Mendonca	Dr Thirumaleshwara Bhat	IC Engine - Nanoadditives
Mr Vijay V S	Dr Joseph Gonsalvis	IC Engine - Modification & Performance Analysis
Mr Avil Alwyn D'Sa (Ext)	Dr Joseph Gonsalvis	IC Engine
Mr Pavana Kumara	Dr Shreeranga Bhat	Materials science
Mr Swaraj Dominic Lewis	Dr Purushothama Chippar	Hydrogen Storage
Mr Anil Melwyn Rego (Ext)	Dr Shreeranga Bhat	Management
Mr Vikas G (Ext)	Dr Sudheer M	Polymer Composites
Mr Yathish Kumar K	Dr Binu K.G	Tribology
Mr Poornesh M	Dr Shreeranga Bhat	Materials science
Mr Vinoothan K	Dr Raju K	Materials science
Mr Ravikiran Kamath B (EXT)	Dr Sudheer M	Materials science

RESEARCH FACILITIES

- Computerized VCR IC Engine
- Sophisticated Wear testing machine
- High Performance Computing Facilities (with ANSYS 17.1 and STAR CCM+)
- Melting Furnace
- Hardness testing machine
- Probe Sonicators
- Specimen polishing machine

Leica Optical Microscope

Pin-on-Disk Wear Tester



System Specifications
Intel Xenon Processor E5-2620 v3 (6C HT, 15MB Cache, 2.4GHz Turbo)
64 GB 2133MHz DDR4 RDIMM ECC
Nvidia Quadro K2200 4GB
2TB SATA HDD (3.5 inch, 7.2k RPM)

CERG LAB - Computing Facility

Computerized VCR IC Engine

RESEARCH CENTER

Department of Mechanical Engineering

St Joseph Engineering College, Vamanjoor, Mangaluru 575028

Karnataka, India

Tel: +91 824 2263753 / 54 / 55 / 56 Ext: 190, Fax: +91 824 2263751

NEW RESEARCH FACILITIES INITIATED

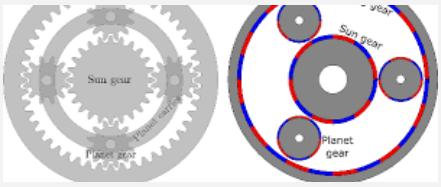
- SHELL AND TUBE HEAT EXCHANGER
- CONCENTRIC TUBE HEAT EXCHANGER (VARIABLE INSERTS FOR NANO FLUIDS)
- ANSYS ACADEMIC TEACHING MECHANICAL AND CFD LAB SETUP

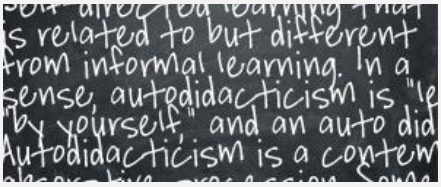
CONCENTRIC TUBE HEAT EXCHANGER

SHELL AND TUBE HEAT EXCHANGER

ANSYS ACADEMIC TEACHING MECHANICAL AND CFD LAB (NEW LAB SETUP)

ARTICLES, POETRY & PENCIL SKETCHES





"Forecasting the Technology for Future"

By
Canute Sherwin
Asst Professor-ME

All that we know about the future is that it will be different from the present. Forecasting is nothing but predicting what the future is going to be using some historical data. The primary function of forecasting is to predict the future using data we have in hand. It is important to both planning and decision making. Technological forecasting is the process of predicting the future characteristics and timing of technology.

Methods of Technology Forecasting:

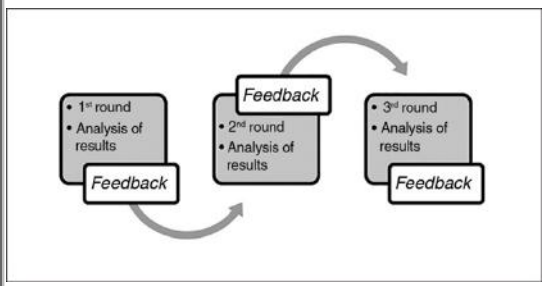
The technology forecasting methods can be classified as **exploratory** and **normative** forecasting methods. Exploratory technological forecasting starts from today's assured basis of knowledge and is oriented towards the future, while normative technological forecasting first assesses future goals, needs, desires, mission, etc., and works backwards to the present.

Technological Forecasting Methods						
Exploratory				Normative		
Delphi	Trend Extrapolation	Growth Curves	Technology Monitoring	Relevance Trees	Morphological Analysis	Mission Flow Diagrams

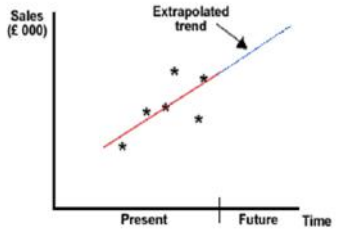
Table 1: Technology Forecasting Methods

Delphi Method:

Delphi method is one of the most popular methods for knowledge extraction from experts and other important stakeholders. This method involves questioning a panel of experts and drawing out forecasts on specific technology with minimum face to face interactions. A moderator collects the data and conducts multiple rounds of interviews where the panellists are allowed to withdraw, change or justify their predictions. At the end of the rounds a report is generated with all the predictions, objections and changes noted.

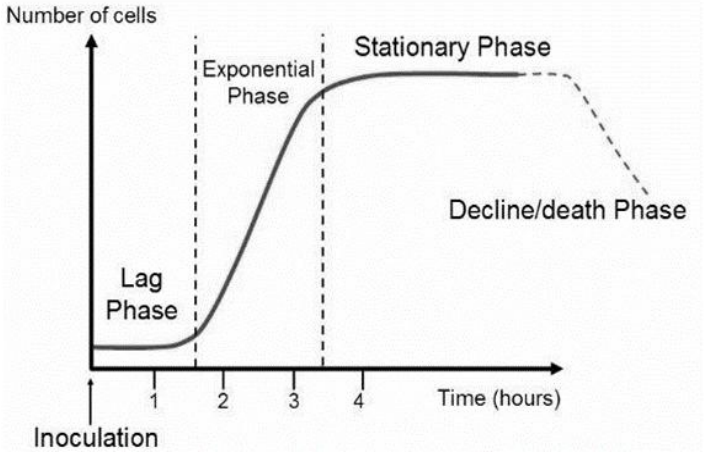


Trend Extrapolation: In this method, the rate of progress of technology in the past is determined and extended into the future by using historical data rate. This type of forecasting implies that the factors which affected the past trends would continue to impact in the same known manner. But this methodology cannot be applied in every technology context. There are instances where natural limits exist for the governing factors and hence, extrapolation will give skewed results. There are two types of extrapolation based on the rate of progress of past behaviour – linear and exponential methods.



Growth Curves:

The growth pattern of a technological capability is similar to the growth of biological life. Technologies go through an invention phase, an introduction and innovation phase, diffusion and growth phase, and a maturity phase. In doing so, their growth is similar to the S-shaped growth of biological life. Technological forecasting helps to estimate the timing of these phases. This growth curve forecasting method is particularly useful in determining the upper limit of performance for a specific technology. Forecasting by growth curves involves fitting a growth curve to a set of data on technological performance, then extrapolating the growth curve beyond the range of the data to obtain an estimate of future performance.



Technology Monitoring:

Technology is changing rapidly. If one has to reduce uncertainty, there has to be a system for monitoring the signals of technological change, followed by analysis of the meaning of signals of change. Technology monitoring is one of the techniques, which can be used for monitoring breakthroughs through forerunner events. Most large manufacturing organizations have formed systems for continuously scanning the technological environment, known as technology scanning/monitoring/intelligence, etc.

Monitoring process has following steps:

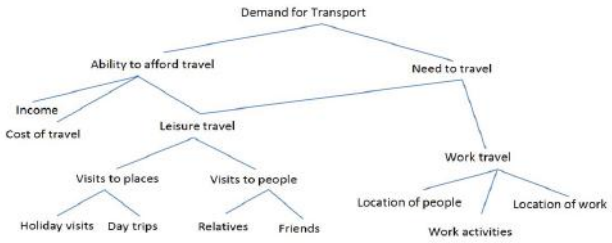
1. Information Scanning.
2. Screening the scanned information.
3. Evaluation of the screened information & development of ideas.
4. Utilization of the evaluated ideas for R&D planning, project formulations, etc.

Major steps involved in technology monitoring are:

- Scanning
- Filtering
- Analysis and Development of forecast

Relevance Trees:

The concept of relevance tree was first described by C. W. Churchman in 1957. It is an organized 'normative' approach starting with a particular objective and used for forecasting as well as planning. The basic structure looks like an organizational chart and presents information in a hierarchical structure. The hierarchy begins with the objectives which are further broken down into activities and further into



tasks. As one descends down, the details increase at every level. The entries when taken together at each level describe the preceding level completely. Also, all activities and tasks represented should be mutually exclusive. The principle behind using the relevance tree is to evaluate systematically all the related technologies that would lead to the success of the intended objective.

Morphological Analysis:

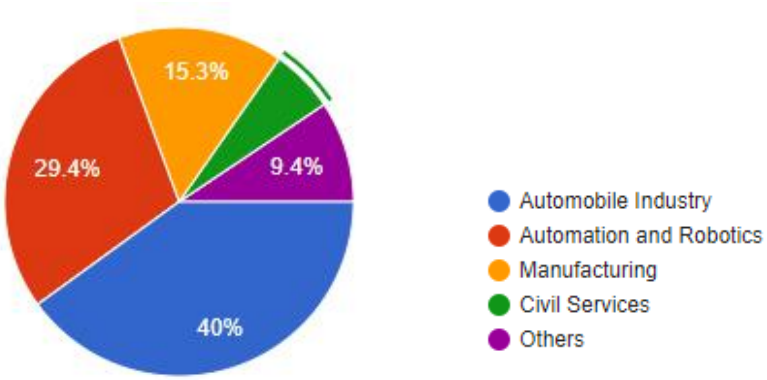
It is a normative technique developed by Fritz Zwicky which provides a framework for exploring all possible solutions to a particular problem. The morphological analysis involves the systematic study of the current and future scenarios of a particular problem. Based on this study, possible gaps are identified and the morphological analysis further provides a framework to explore other alternatives to fill these gaps. From the forecasting perspective, the method enables creation of a list of all the possible outcomes of a technology in order to determine different categories of its applications.

Mission Flow Diagrams:

Mission Flow Diagrams have been originally conceived by Harold Linstone as a means of analyzing military missions. This involves mapping all the alternative routes or sequences by which a given task can be completed. The analyst needs to identify significant steps on each route and also determine the challenges/costs associated with each route. The performance requirements can then be derived for each associated technology and the same can be used as normative forecasts.

OPINION POLL

Preferred field of choice for SJEC Mechanical Engineering Students. (85 responses)



* the above statistics are based on responses obtained from Josephites through an online survey.

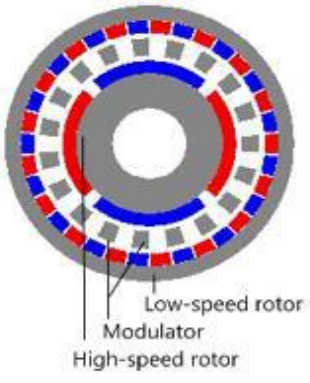
"A Breakthrough Technology: Magnetic Gears"

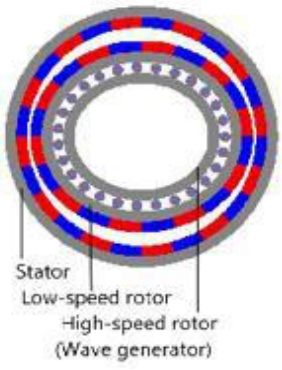
By
MOHAMMED AL-THAMASH
VIII SEM M2 SEC

Ever wondered what is Magnetic Gear???
Well,look no further because here is an article which will take you through a journey of evolution of the same.

Ever since the Gears and gearboxes came to existence, they have been extensively used for speed change and torque transmission in various industrial applications. It is well known that the mechanical gear has a high torque density however, suffers from some inherent problems such as contact friction, noise, heat, vibration and reliability which are of great concern. In contrast, the magnetic gear (MG) offers significant advantages of reduced vibration, noise, low maintenance, better reliability, inherent overload protection and non-contact feature between the shafts. Moreover, for many years, MGs have gotten relatively little attention, probably due to its low torque density and relative magnetic complexity. The idea of MGs was introduced in the beginning of the 20th century. In 1913,an US Patent Application described an electromagnetic gearing which was most likely to be the first conceived topology but, during that instance, almost nobody was interested in it. When an MG topology quite similar to a mechanical spur gear was proposed by Faus in 1941,people gradually started to pay attention to MGs. But unfortunately, due to the low utilization and poor performance of ferrite permanent magnet (PM), the material limited its wide application in industry. With the appearance of the high-performance neodymium iron boron (NdFeB) Permanent Magnet material in 1980s, the research on MGs aroused interest again. The early MG topologies were derived from mechanical gear topologies. These MGs simply replaced the slots and iron core teeth by N-poles and S-poles of Permanent magnets respectively but the utilization of Permanent magnets was the key problem due to its poor torque density.

The gears of MGs are meshed together with the help of magnetic force of attraction without making any physical contact. By using such kind of gearing systems we can reduce the wear and tear that are commonly observed in mechanical gear systems. Also, the magnetic gears works smoothly without creating any sound and the main advantage of magnetic gearing is that it will not get heated as long as it works. Magnetic gearing systems can be used in vehicle transmissions that reduce the friction and improve the efficiency without using any type of additional lubricants. Usually high power rare earth neodymium magnets are used for the purpose of manufacturing gears. Neodymium magnets are powerful magnets which are about 12 times stronger than normal magnets used in speakers and other equipments. All cogs of each gear component of magnetic gears act as a magnet with periodic alternation of opposite magnetic poles on mating surfaces. Gear components are mounted with a "cushioned" backlash capability similar to other mechanical gearings which has no cushioning effect. Although they can exert as much force as a traditional gears,such gears work without touching and so are immune to wear of mating surfaces, have very low noise and can slip without damage, thus making them very reliable. They can be used in configurations that are not possible for gears that must be physically touching and can operate with a barrier completely separating the driving force from the load.The magnetically coupled gear can transmit force into a hermetically sealed enclosure without using a radial shaft seal,which may leak.Hermetically sealed processes are not contaminated or chemically affected by the magnetic gear.This can be an advantage in explosive or otherwise hazardous environments where leaks constitute a real danger.





Key Benefits of Magnetic Gears

- Increased efficiency.(>99% at full load and high part load efficiency)
- High reliability.
- Low maintenance required.
- Elimination of transmission oil.
- Physical isolation between shafts.
- Transmission through a sealed wall.
- Torque fuse protection.
- Very low acoustic noise and vibration.
- Compliant transmission eliminates drivetrain pulsations.

Key Applications of Magnetic Gears

- Turbine Generators.
- Energy Storage Flywheels.
- Gearing setup for Drilling Motors.
- Oil Well Sub-Surface Safety Valve.
- Robotics platform.
- Aerospace domain specific application.

Magnetic gear technology is still in its infancy and more practical validation is desired to firmly establish its readiness to the industrial world. Magnetic gears afford the opportunity to provide speed and torque multiplication similar to a traditional geared gearbox or transmission and by using magnetic attraction between rotating members rather than actual physical contact, as between gear teeth, it may be possible to greatly reduce or potentially eliminate lubrication requirements compared to existing traditional gearboxes. A magnetic gear based gearbox's implementation could increase reliability and mission availability by reducing or perhaps eliminating wear-related gearbox failures prevailing in traditional tooth-to-tooth contact mechanisms. Therefore, Magnetic gears are becoming competitive alternatives to conventional gears. In addition, they do not produce debris and they do not require lubricant, being able to be operated at a broad range of temperature ranging from -270ºC up to 350ºC.They present intrinsic anti-jamming properties and there is a clutching effect if the applied torque exceeds a limit therefore protecting the output from overloads. This effect is completely reversible without any damage or wear. This technology is currently in cusp of development making it available for consideration in aerospace and other industrial oriented uses. The radically different behaviour against torque overloads, the isolation of vibrations, the absence of maintenance, the compatibility with sand or dust, broad temperature range and the through wall capability are some properties that make these devices attractive for aerospace and other future applications. Even though, the relatively complex structure and design process of Magnetic Gears and Magnetic Geared Machines, together with the price of Permanent Magnets, imply high manufacturing costs, the advantages that this technology could bring are significant and warrants/ promises massive development in the decades to come.

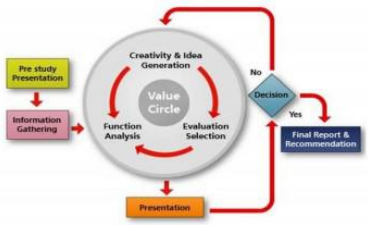
"Value Engineering"

By
Shashanka S
IV Sem M4 SEC

When there was a shortage of materials during World War II, General Electric Company found that many of the substitutes for materials used, had better or equal performance at less cost. Lawrence D. Miles launched an effort to make the concept systematic. Society of American Value Engineers, "SAVE" was established in 1959. Value Engineering is an organized study of functions of a product to satisfy the user's needs with a quality product at the lowest life cycle cost through applied creativity. Value Engineering is an analysis of materials, processes, and products in which functions are related to cost and from which a selection may be made so as to achieve the desired function at the lowest overall cost consistent with performance. It can also be understood as an organized, creative, cost search technique for analysing the function of a product with the purpose of value enhancement without compromising with its quality, performance & efficiency.

The Value of a product is highest when it offers maximum performance at minimum cost. There can be a number of reasons for poor value of a product. Lack of coordination among designers, Failure in communication with customers –poor definition of needs and wants, Outdated or inappropriate design standards are some of them. Proficiency in Value Engineering can help in coming up with products which offer great value. The knowledge of value engineering can be applied in construction projects, manufacture of products, business systems and service organisations.

Value Engineering helps in achieving an improved product design and quality. It suggests the elimination of product functions which are unnecessary and increase costs. Value Engineering emphasizes on seeking alternatives for achieving the function and on applying the best alternative among the various courses of actions available. It also enhances the customers' satisfaction and sales by determining the exact need and expectation of customers. The concept of Value Engineering is depicted below.



"Physics just solved 35 year old mystery hidden inside atomic cores"

By

Mahammad Sinan A.S

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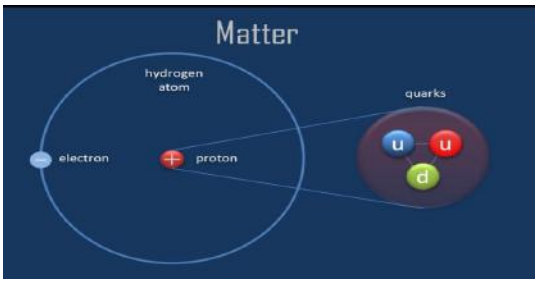
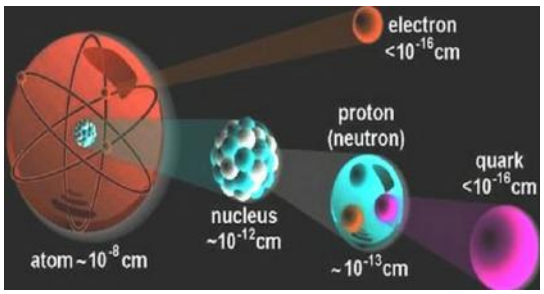
Here is a mysterious truth that scientist have known since 1958 protons and neutrons act differently when they all inside an atom versus floating freely through space. Specifically, the subatomic particles that make up those protons and neutrons called Quarks, slow down massively



once they are confined to a nucleus in an atom.

Physicists really did not like this, because neutrons are neutrons weather they are inside an atom or not and protons are protons. Both protons and neutrons are made up of those small particles called Quarks, bond together by the strong force.

When you put Quarks into nucleus, they start to



more slowly and that is very weird said coauthor/ Hen, a physicist at the Massachusetts institute of technology. That is the strange because the powerful interactions between Quarks mainly determine their speed, whereas forces that bind the nucleus are supposed to be very weak, Hen added.

And there is no other known force that should modify the behavior of Quarks in a nucleus so intensely. Yet the effect remains, particle - physicists call it the EMC effect, named for the European muon collaboration, the group that discovered it, and until recently scientist were not sure what caused it [The biggest unsolved mysterious in Physics]

Two particles in a nucleus are typically pulled together by a force of around 8 million electron volts, a measure of energy in particles. Quarks in a proton or neutron all bond together by about 1000 Mev. So it doesn't make that the comparatively mild interaction of the nucleus are dramatically imparting the powerful interactions inside Quarks. Hen told live science.

That is the strong evidence that this pairing effect is the real answer to the EMC mystery, Feldman told live science.

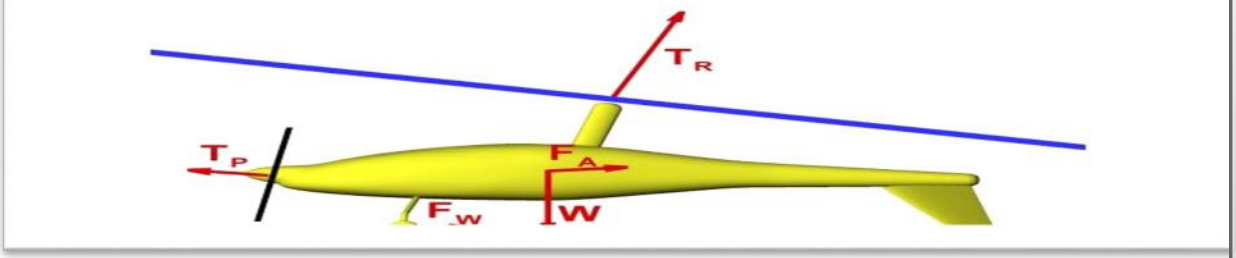
After 35 years, particle physicists seem to have solved this problem with too many no good solutions. Hen said he and his colleagues already have follow up experiments planned to probe the issue even more deeply and reveal new unknown truths about the behavior of paired up nucleons inside atoms

Physics Facts

- Light from the Earth takes just 1.255 seconds to reach the Moon.
- Because of differences in gravity, a 200 pound person would only weigh 76 pounds on Mars
- Electric eels can stun both predators and prey with electric shocks of around 500 volts.
- Our ears vibrate in a similar way to the original source of the vibration, allowing us to hear many different sounds.
- When traveling through water, sound moves around four times faster than when it travels through air.
- The sound of thunder is produced by rapidly heated air surrounding lightning which expands faster than the speed of sound.

"The Autogyro"

By
Shane Sequeira
IV Sem M2 SEC



In 1923, Juan de la Cierva (1895 1936) pioneered the first autogyro. These machines appear superficially similar to helicopters, but with a single unpowered rotor. Early autogyros were less manoeuvrable than helicopters and were unable to take off or descend vertically. The invention of autogyro predated helicopter and so paved the way for vertical flight. Autogyro rotors are not powered, unlike those of a helicopter and thus worked in a similar way to spinning "Helicopter" seed pods such as those of the box elder tree, Acer Negundo. These seeds are aerodynamically shaped to spin as they fall, allowing the seed to disperse much further; autogyro rotors autorotate in the same way.

Cierva Direct-Control Wingless-Two-Seater Autogiro

The power or thrust of autogyro comes from a powered propeller (or in later designs a jet engine) meaning that most do require some take off runway, but normally only tens of feet. As they can land in an equally small space, the autogyro had distinct advantages over airplanes as they are much more manoeuvrable and stable flying at low speeds, but can also fly faster than the helicopters. The autogyro is unable to "stall" in mid-air, making it considerably safer than other aircrafts.

De La Cierva started developing his ideas for the autogyro around 1920, motivated partially by the frequent crashes that fixed-wing aircrafts often suffered—especially at low speeds. The first successful autogyro flight was in 1923, in a machine called C4. This was not a perfect machine by any means, but each time it stalled or there was a problem in mid-air, it was able to glide slowly back to the earth on its autorotating blades.

Helicopter Facts

- In 1861 a machine was called a helicopter, but it could not lift off the ground.
- There is a nut holding the main rotor to the shaft of the helicopter, called the 'Jesus nut'. This nut was named as such when a pilot said, "Oh Jesus, if that nut comes off..."
- It is believed that there are approximately 45,000 helicopters operating around the world today. This number includes military helicopters.
- The fastest recorded speed of a helicopter is roughly 248 miles per hour.
- The farthest a helicopter has traveled with-

"Mid-Air Collision Control"

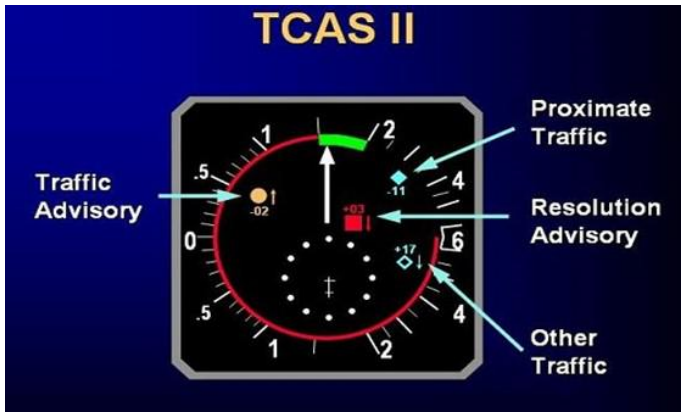
By
Siya Shetty
IV Sem M4 Sec

FLIGHTS are taking off, landing and soaring through the air all over the world at any given point in time - so how do all of these planes avoid each other? One factor many passengers might not consider is the task of avoiding other planes while soaring sky-high. There have been many instances in recent years of aircraft coming into extremely close proximity with each other.

If you look at the live map of air traffic you can see there are a huge number of airplanes in the sky at any given time with so many of them on similar routes, giving us the idea of how congested it all is.

The task of avoiding other planes is left in the hands of pilots, air traffic control and the electronic equipment installed on commercial planes.

British Airways pilot Steve All right explained: "There are three things you should know. Firstly Air Traffic Controllers (ATC) around the world are carefully selected, highly trained and rigorously tested and licensed. Their job is to create a protective bubble around the aircraft which increases in size as the aircraft climbs and gets faster. Secondly, pilots are selected and trained to have a high level of situational awareness and are the most highly regulated professionals in any industry. Thirdly, all commercial aircraft are fitted with electronic equipment which allows them to talk to each other, which removes the human element and provides warning and guidance of any proximity to another aircraft. This is where **TCAS** comes into action."

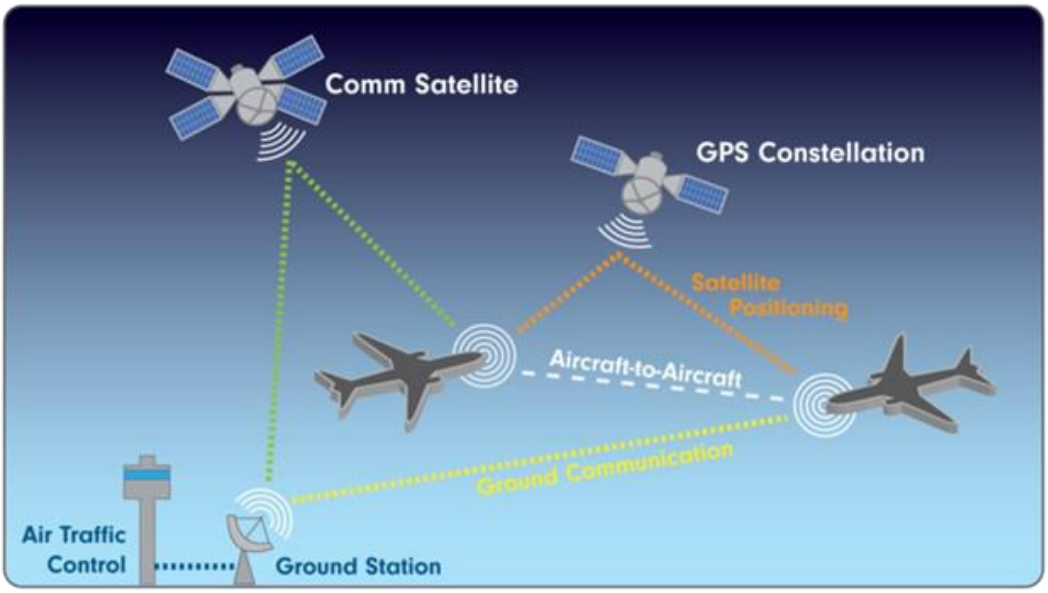


How does TCAS work? It gets signals from other aircraft, equipped with RBS or Mode-S transponders, shows these aircraft to the pilots on a special indicator (usually on a Navigational Display or EHSI — Electronic Horizontal Situation Indicator), monitors the airspace around an aircraft, analyses movements of other traffic and if necessary, gives commands either to climb or to descend in order to avoid near-miss or collision with other aircraft

TCAS uses transponders to be in touch with the other planes within a range of 16 miles. Therefore one plane transponder will tell nearby plane's transponder about its position and velocity and uses that information to build a virtual three dimensional map of other aircraft that's nearby. With this it can also make predictions as to where the aircraft is headed. Therefore when a nearby plane gets too close approximate to 2.5 miles, the pilot receives a resolution advisory (which the pilots are bound to follow immediately) which will then negotiate which flight should climb and which should descend based on which flight will achieve a large altitude difference. In the cockpit the Pilot hears an audible alert "**climb**" or "**descend**". So that the instructions aren't the same, one flight will carry on with climb, which the TCAS broadcasts to other flight to do the opposite.

Now TCAS doesn't work if Pilots don't obey their instructions. What if the TCAS says something that conflicts with the human air traffic controller? Back in 2002 there was a tragic incident in Germany where one pilot listened to TCAS and other obeying the instructions given by air traffic controller, resulting in mid-air collision. Since then Pilot training has always emphasized that they should always listen to TCAS.

To enhance safety even further an advanced system called Automatic Dependent Surveillance Broadcast is rolled out in number of countries. ADSB allows planes to locate their exact location using GPS. That information is broadcast to other nearby aircraft and ADSB ground stations which will send the information to ATC. Additionally a signal of flight ,weather and radar data is broad-



ADSB will enable air travel that is safer, more efficient and better for the environment. Here's how- The technology will put more information in the hands of the Pilots who will now have the control over ATC data on the display screens right in the cockpit while controllers will guide them through displays which will be more accurate than ever before.

It will also benefit the environment by enabling more direct approach and a power saving continuous descent to the runway. For example when an airliner uses these procedures on every landing would save enough fuel to reduce its annual carbon emissions by an amount equal to 100 cars.

Since TCAS systems are expensive and bulky ADSB could go a long way for smaller flights to avoid any mishaps too.

With this entire tech, it means while accidents are still possible they are thankfully exceedingly rare.

"Near Death Experience"

Article & Sketch
By
VARUN M
IV SEM M3 SEC

Greeting Reader!!

Human body, close to death is found to have a bright spark at the tip of eye. Doctors say that, this is caused by hallucination due to insufficient supply of oxygen and blood to the eyes by heart. There is an enormous level of Dopamine and Melatonin hormone secreted when the brain believes that the death is being approached.

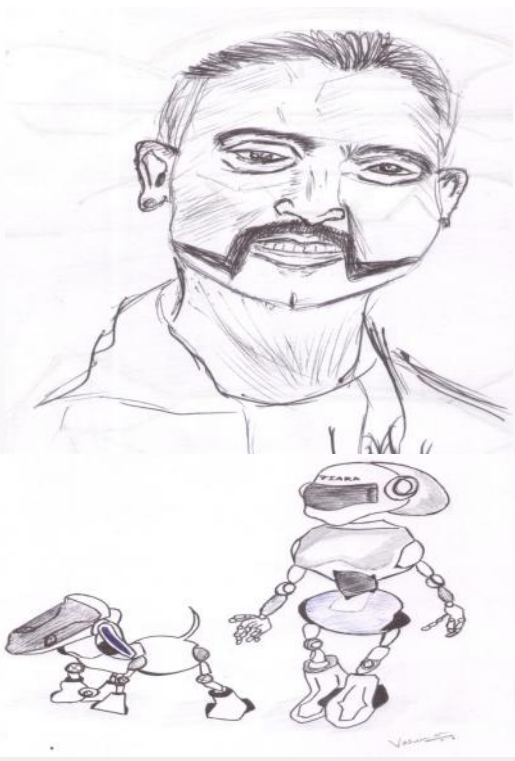
The Last Seven Minutes of Life are as follows; in the first minute, the heart stops pumping the blood completely and brain remembers the scene of the person's mother giving birth to him/her which can never be remembered by a normally living brain though the brain capacity is 2.5 Peta Byte (1 PB=1000TB). In the second minute, the brain remembers the pleasant, best childhood memories like the first train/flight travel, first surprise from parents, etc. The third minute makes the brain remember about the first teenage crush/love followed by the best romantic moments of life.

The most crucial period is the fourth minute which makes the brain feel the all the pain and backstabs experienced, moments of loneliness and sadness, etc. The brain in fifth minute, remembers the miracles/turning points of life which either lifted the person to a great level or put down to the ground.

Most important is the sixth minute during which the brain comes to a conclusion by judging all the negatives/positives done to others. These six crucial minutes are common to all the people who approached death (like coma, extreme level of brain tumour, etc.) but came back alive. Doctors fail to address the seventh minute of brain activity visually but mentally it is proved that, during this minute, all the hormones responsible for happiness, sadness, etc. is released by the brain simultaneously and brings up a blur kind of flash light in front of the eyes.

The above data is researched and proved by Doctors and Professors of Asia and Europe. Modern scientists agree with the same and they also match it with the shut down operation of a Mobile Phone, which closes all the applications one by one, and then shut down few seconds later.

ABHINANDAN VARTHAMAN



"Educational Technology"

By
Nidhi C Shetty
IV Sem M2 SEC

Educational technology is "the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources".

Educational technology is the use of both physical hardware and educational theoretic. It encompasses several domains including learning theory, computer-based training, online learning, and where mobile technologies are used, m-learning. Accordingly, there are several discrete aspects to describing the intellectual and technical development of educational technology.

The Association for Educational Communications and Technology (AECT) defined educational technology as "the study and ethical practice of facilitating learning. It donated instructional technology as "the theory of practice and design, development, utilization, management, and evaluation of processes and resources for learning. As such, educational technology refers to all valid and reliable applied education sciences, such as equipment, as well as processes and procedures that are derived from scientific research, and in a given context may refer to theoretical, algorithmic or heuristic processes. It does not necessarily imply physical technology. Educational technology is the process of integrating technology into education in a positive manner that promotes a more diverse learning environment and a way for students to learn how to use technology as well as their common assignments.

Educational technology is an inclusive term for both the material tools and theoretical foundations for supporting learning and teaching. actional content, pervasively embedded in objects, is all around the learner, who may not even be conscious of the learning process. The combination of adaptive learning using an individualized interface and materials which accommodate to an individual, who thus receives personally differentiated instruction , with ubiquitous access to digital resources and learning opportunities in a range of places and at various times, has been termed smart learning. Smart learning is a component of the smart city concept. Helping people and children learn in ways that are easier , faster, more activate, or less expensive can be traced back to the emergence of very early tools, such as paintings on cave walls.

Various learning theories may be considered in designing and interacting with educational technology. E-learning theory examines these approaches. These theoretical perspectives are grouped into three main theoretical schools: behaviourism, cognitivism, and constructivism. Educational media and tools can be used for:

- ⇒ Task structuring support : help with how to do a task.
- ⇒ Access to knowledge bases.
- ⇒ Alternate forms of knowledge representation

E-learning is being used by companies to deliver mandatory compliance training and updates for regulatory compliance, soft skills and IT skills training, continuing professional development (CPD) and other valuable work place skills.

BENIFITS:

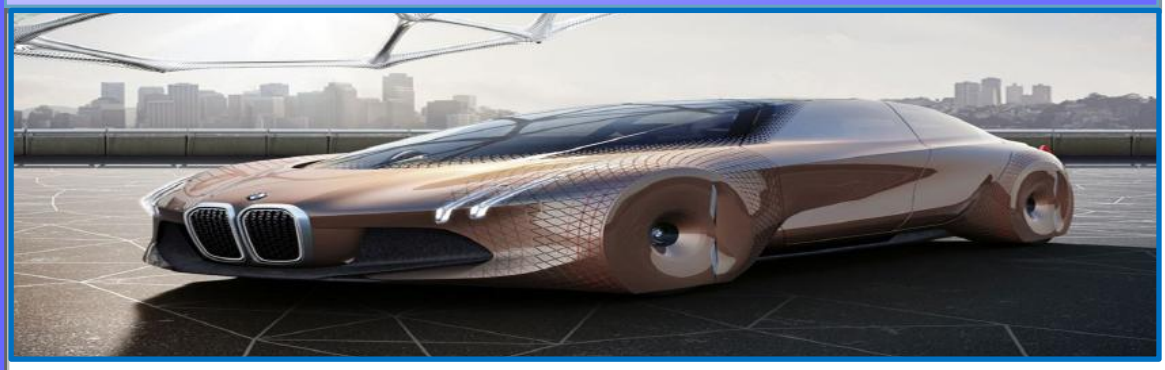
Effective technology use develops multiple evidence based strategies concurrently. Using computers or other forms of technology can give students practice or core content and skills while the teacher can work with others, conduct assignments, or perform other tasks.

The importance of self-assessment through tools made available on Educational Technology platforms has been growing. Self-assessment in education technology relies on students analysing their strengths, weaknesses and areas where improvement is possible to act realistic goals in learning, improve their educational performances and track their progress.

The timing has never been better for using technology to enable and improve learning at all levels, in the places of all backgrounds. From the modernization of E-rate to the proliferation and adoption of openly licensed educational resources, the key prices necessary to realise best the transformations made possible by technology in education are in place.

It is a time of great possibility and progress for the use of technology to support learning.

"Self Driving Cars"



By
Ashley Fernandes
VIII SEM MI SEC

The future is a well thought of documentary of feeble minds of scientists and young inventors, close your eyes for a moment and imagine what the future would be like, everything is instant right ? fast track data, no hard work, basically a Joe Dude attitude right ?What's the future of personal transportation? Well, you'll likely be spending a lot less time behind the wheel, for one. The rise of self-driving from some scenes out of science-fiction flicks are now reality. Cars today already include many semi-autonomous features, like assisted parking and self-braking systems. And completely autonomous vehicles able to operate without human control are rapidly becoming more of a reality.

The pros of autonomous cars are many. "The sensors in a self-driving car are always observing, are not affected by the state of the driver and can scan in multiple directions simultaneously," says Dr. Dominique Freckmann, an automotive engineering manager at TE Connectivity, a global technology leader providing connectivity and sensor solutions that are essential in today's increasingly connected world. "Autonomous driving is a key aspect of the industry's drive toward safer roadways."
Recent NHTSA research shows that approximately 94 percent of accidents are caused by human error. Cars with advance safety features and eventually, self-driving cars, can significantly reduce the number of collisions. The impact of this innovation can be far-reaching, including reduced demand on emergency response systems and reduced auto insurance and health care costs. What technology makes self-driving cars possible? It's really three technologies. Most of the sensors required for autonomous driving are available today and are used in advanced safety features such as blind-spot monitoring, lane-keep assistance, and forward collision warning, Sensors for other features such as radar, Ultra-Sonics, and cameras provide the input necessary to navigate the car safely. Connectivity means cars have access to the latest traffic, weather, surface conditions, construction, maps, adjacent cars, and road infrastructure, he says. This data is used to monitor a car's surrounding operating environment to anticipate braking or avoid hazardous conditions.

Finally, software/control algorithms are needed to reliably capture the data from sensors and connectivity and make decisions on steering, braking, speed, and route guidance. Two of the most talked about self-driving advancements come from Google and Tesla. They take different approaches: Google is using lidar (a radar-like technology that uses light instead of radio waves) sensor technology and going straight to cars without steering wheels or foot pedals. Tesla has rolled out a software system called Autopilot, which employs high-tech camera sensors as a car's own eyes to some of its cars already on the market. While technologies and capabilities continue to evolve toward making autonomous vehicles a reality, there are some hurdles. Right now, autonomous cars are legal only in a few U.S. states, as regulators weigh how to best ensure their safe interaction with standard human-driven vehicles. But as we know, we are working towards are goal slowly into a better, safer and a brighter future!

By
Suhas
IV SEM M4 SEC

AUTODIDACTICISM

It's said "don't be a fool, stay in school". But in reality college costs continue to skyrocket in Indian institutes. Luckily, there are many inexpensive educational resources than there have been at any time in human history and they can take you further than you might imagine.

Autodidacticism, or autodidactism, is education without the guidance of masters (such as teachers and professors) or institutions (such as schools). An autodidact may have some formal education, but his or her main field of study is sometimes completely self-taught and they're more than just hobby. Some autodidacts have been responsible for major inventions and contributions throughout history. Becoming an autodidact requires two important qualities intensity and intentionality. People like Leonardo da Vinci may have been gifted with intelligence, but the most important factor in their success was the intense way in which they approached learning. Instead of waiting for information to come to them, they rigorously sought out knowledge themselves. An autodidact does not simply learn, but they do it so efficiently by minimizing input while increasing outputs. They are their own masters.

"Pessimistic person always see a difficulty in every opportunity and optimistic person always see opportunity in every difficulty". Self education will make you an optimistic person because you will have more knowledge from various sources. In other words, you will think like " if he can do it, then I can do it too ".Unfortunately, most people never look for referrals, so they believe it is hard to become successful in life. When you educate yourself you will think of many possibilities which makes you much more productive than others leading to a fruitful life. Like Jim John quoted " Formal education will make you a living; self-education will make you a fortune".

By
Shradhha A
IV SEM M2 SEC

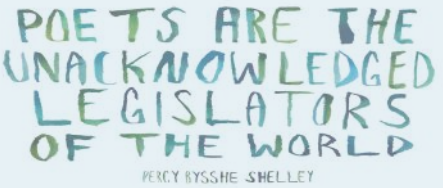
GETTING DREAM BRANCH

A dream doesn't become reality through magic, it takes sweat, determination, hard work and courage to pursue them. We have to take challenge of our life to reach-out our goals. There is no limit to what you can achieve.

I wanted to do aeronautical engineering and it was my dream but instead I joined computer science engineering in this college. Later I came to know that mechanical and aeronautical engineering are related. At that moment I got lot of questions in my mind, I have opted CS engineering and now how can I change my branch to mech? Should I continue CS engineering and let my dream die? Being a girl can mechanical engineering be easier to me? I googled my questions and read lot many articles regarding girls being a mechanical engineer and I got positive hopes about that. I interacted with my parents and elders about changing my branch to mechanical and they were very supportive to me.

At that point of time I got lots of confidence to change my branch as I wished. I felt its just our thinking and mentality which will not let our dream to come true. If I want to go according to my dream then I have to face it. Option to change the branch gave me a second chance to study what I wished. So I decided not to miss this opportunity and applied to change my branch. Finally I changed my branch to mechanical.

The department of mechanical engineering is excellent, faculties are very supportive and I easily got adjusted to my new branch. Now I feel that it is one of the best decisions in my life and I will never regret taking mechanical engineering.



"ಕನಸುಗಳ ಬೆನ್ನಟ್ಟಿ"

ಸಿ.ಇ.ಟಿ ಬರೆಯುವಾಗ ಇತ್ತೆಷ್ಟು ಕನಸುಗಳು
ಆಗಬೇಕು ಮೆಕ್ಯಾನಿಕಲ್ ಸಬ್ಜೆಕ್ಟಿನಲ್ಲಿ ಇಂಜಿನಿಯರ್‌ಗಳು
'ಕ್ರ್ಯಾಂಕ್' ಎಂದು ಉಲಿದಾಗ ಯಾವುದೇ ಮಶೀನುಗಳು
ಎನಿಸಿತ್ತು ಹಾಕ್ಟೇಕದಕೆ ಒಂದಿನಿತು ಲ್ಯೂಬ್ರಿಕೇಂಟ್‌ಗಳು

ಸೀಟು ಗಿಟ್ಟಿಸಿ ಮೊದಲನೇ ವರ್ಷದಲಿ ಫಿಸಿಕ್ಸು ಕೆಮಿಸ್ಟ್ರಿ
ಮೆಥಮ್ಯಾಟಿಕ್ಸ್ ಪುನರಾವರ್ತನೆಯ ನೆನಪುಗಳ ಮಿನಿಸ್ಟ್ರಿ
ದ್ವಿತೀಯ ವರುಷ ತಾಂತ್ರಿಕ ಕಲಿಕೆಯ ಮುಸಲಧಾರೆ
ತೃತೀಯದಲಿ ವಿಧವಿಧ ಅನುಭವದ ಪ್ರತ್ಯಕ್ಷ ಧಾರೆ

ಚತುರ್ಥಕ್ಕೆ ಪ್ರಾಜೆಕ್ಟಿನ ತಲೆಬಿಸಿ ಪ್ಲೇಸ್‌ಮೆಂಟಿನ ಕಸಿವಿಸಿ
ಓದಿ ಓದಿ ಅನುಭವಿಸಿ ಸುಸ್ತೋ ಸುಸ್ತು ಎಂದೆನಿಸಿ
ಕೈಯಲ್ಲಿ ಪದವಿಯ ಸರ್ಟಿಫೀಕೇಟು ಉದ್ಯೋಗದ ಬೇಟೆ
ಮನೆಯಲ್ಲಿ ಮೂದಲಿಕೆಯೋ ಹೊಗಳಿಕೆಯೋ ಏನೇನೋ ತೀಟೆ

ಅಂಗೈಯಲಿ ಮೊಬೈಲ್ ತೆರೆದಿದೆ ಬಾಹ್ಯ ಜಗತ್ತಿನ ಹೊಸಲು
ಎಲ್ಲಿ ಸೇರಲಿ ಈ ಮೆಕ್ಯಾನಿಕಲ್ ಪದವಿಯಿಂದ ಏನೋ ದಿಗಿಲು
ಗೊತ್ತಾಗದು ನೆಲೆ ಎಲ್ಲಿ ಈ ವಿಸ್ತೃತ ಸ್ಪರ್ಧಾತ್ಮಕ ಜಗತ್ತಿನಲಿ
ಉದ್ಯೋಗ ಸಂದರ್ಶನದಲಿ ನಾನೆಷ್ಟು ಅಲ್ಪ ಮನವರಿಕೆಯಲಿ

ಸಿ.ಇ.ಟಿ. ಬರೆದಾಗ ಇತ್ತು ಕನಸುಗಳಿಗೆ ಪುಕ್ಕ
ವಿಸ್ತೃತ ಜಗದಲಿ ಕಳೆದುಳೊಳ್ಳುತ್ತಿದೆ ರೆಕ್ಕೆ ಪುಕ್ಕ
ಆದರೂ ಧೈರ್ಯದಲಿ ಮುನ್ನುಗ್ಗಿ ಒಂದು ಕೈ ಮಿಗಿಲು
ಬಿಡಲಾರೆ 'ಕ್ರ್ಯಾಂಕ್' ಎನ್ನಲು ಬೆನ್ನಟ್ಟುವೆನು ಮುಗಿಲು.

– ಚಾರ್ಲಿ ಕುಲಶೇಖರ
ಪರಿಚಾರಕರು, ಮೆಕ್ಯಾನಿಕಲ್ ವಿಭಾಗ

"ಮೆಕ್ಯಾನಿಕಲ್ ಇಂಜಿನಿಯರ್"

ಹೌದು,
ನಾವು ಇಂಜಿನಿಯರುಗಳೇ,
ಯಂತ್ರ ಶಿಲ್ಪಿಗಳು,
ಮಂತ್ರಗಳಿಲ್ಲದೇ ಯಂತ್ರ ಮಾನವ
ತಯಾರಿಸುವ ತಂತ್ರಜ್ಞರು;

ನಮ್ಮ ಮಂತ್ರ ವಾಗಿಹುದು,
'ಕಾಯಕವೇ ಕೈಲಾಸ'
ಪ್ರಯತ್ನಿಸುವೆವು ಮಾಡಲು
'ಕಸದಿಂದ ರಸ'
ಇರುವುದು ಎಂದೂ
ಮುಖದಲ್ಲಿ ಮಂದಹಾಸ,
ಪಣತೊಟ್ಟು ನಿಂತಿರುವೆವು
ಬರೆಯಲು ಇತಿಹಾಸ,
ಜಗತ್ತೇ ಓಡುತ್ತಿರುವುದು
ಇಟ್ಟು ನಮ್ಮ ಮೇಲೆ ವಿಶ್ವಾಸ ;
ಮಾಡಿಕೊಂಡಿದ್ದೇವೆ
ಯಂತ್ರ ವಿದ್ಯೆಯ ಕರಗತ,
ಆಡಿತೋರಿಸೆವು ಮಾತು,
ಮಾಡಿತೋರಿಸುವೆವು ಕಾರ್ಯಗತ;

ಹುಡುಗಿಯರ ಬಗೆಗೆ
ಜ್ಞಾನ ಅಲ್ಪ ;
ಹೀಗಾಗಿಯೇ ಸಾಧಿಸುವೆವು
ಕಾರ್ಯಕಲ್ಪ ;
ನೋಡಿದರೂ
ಯಾವುದೇ ವಿಷಯ,
ತಿಳಿಯುವೆವು ಅದರ ಗಹನ,

ಹೀಗಾಗಿ ನಮ್ಮಲ್ಲಿ
ಅಪರಿಮಿತವಾಗಿದೆ ಸಾಮಾನ್ಯಜ್ಞಾನ;

ಬಸ್ಸು, ಕಾರು, ರೈಲು, ಮೋಟಾರು
ಯಂತ್ರಗಳು ;
ಎಲ್ಲಿ ನೋಡಿದರಲ್ಲಿ,
ಚಲಿಸುವ ಒಂದೊಂದು ವಸ್ತುಗಳು,
ಅವು ನಮ್ಮದೇ ಸೃಷ್ಟಿಗಳು ;

ಇಲ್ಲದೇ ಮೆಕ್ಯಾನಿಕಲ್ ಎಂಬ
ತಾಂತ್ರಿಕ ಅಧ್ಯಯನ,
ವಿಜ್ಞಾನವೆಂಬುವುದು ಬರೀ ಕಥನ;

ಲೇತ್ ಯಂತ್ರಗಳು, ಸ್ಪಾನರ್ ಗಳು,
ನಟ್-ಬೋಲ್ಟ್ - ಶಾಫ್ಟ್ ಗಳು
ಇವೇ ನಮ್ಮ ಜಗತ್ತು,
' ರಾಯಲ್ ಮೆಕ್ ' ಎನ್ನುವುದೇ
ನಮ್ಮ ಗತ್ತು....

– ಪಿ. ವಿಗ್ನೇಶ್
ಗಾಣಿಗ

ಆರನೇಸೆಮಿಸ್ಟರ್
ಮೆಕ್ಯಾನಿಕಲ್ ವಿಭಾಗ

Unknown facts about Kannada language

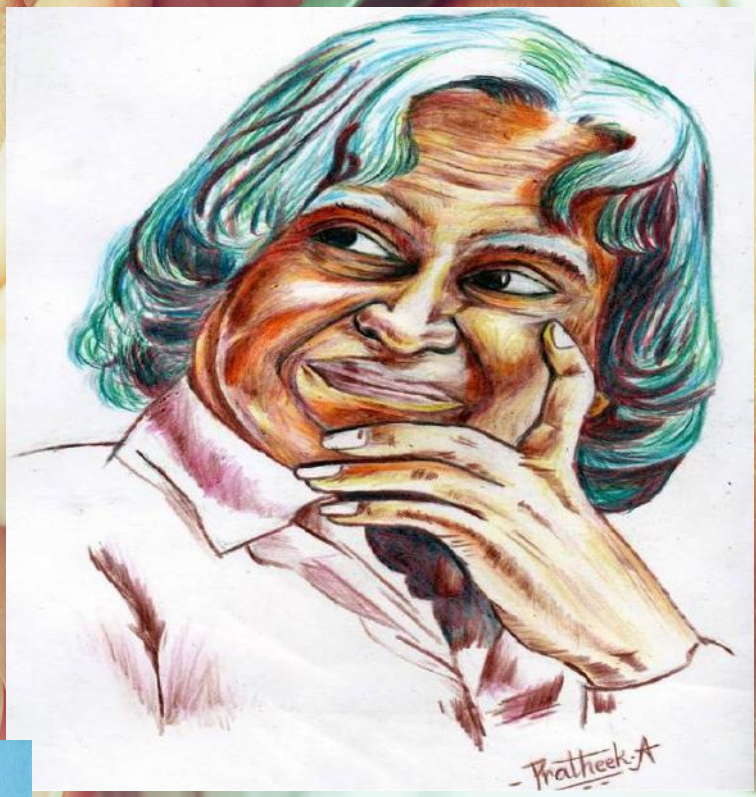
- ◊ Kannada is one of the oldest Indian language (2000 years)
- ◊ Kannada is the only Indian language for which a foreigner Ferdinand Kittel wrote a Dictionary
- ◊ When the Kannada literature "Kavirajamarga" was written by Amogavarsha, English was a baby in the cradle and Hindi was not born at all.
- ◊ Kannada is 99.99% perfect logically and scientifically
- ◊ The only Indian author who got maximum awards for literature is Shri Kuvempu who is a proud Kannadiga
- ◊ Charition mime, an ancient greek play (In 2nd century) had used Kannada phrases

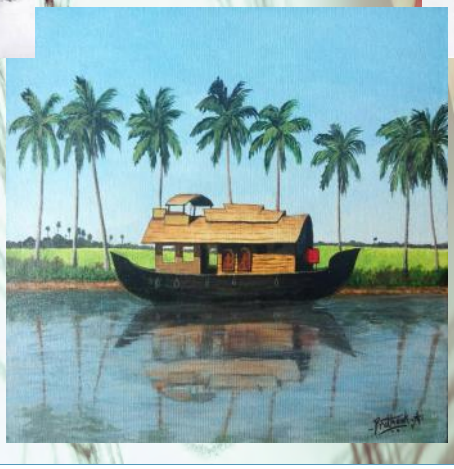
Art By
Mr Pratheek
VIII SEM M2

End is not the end, if fact E.N.D. means "Effort Never Dies"
—Abdul Kalam

The way to build a nation is to build a good citizen. The majority of the citizens should be efficient, of good character and possess a reasonable high sense of duty.

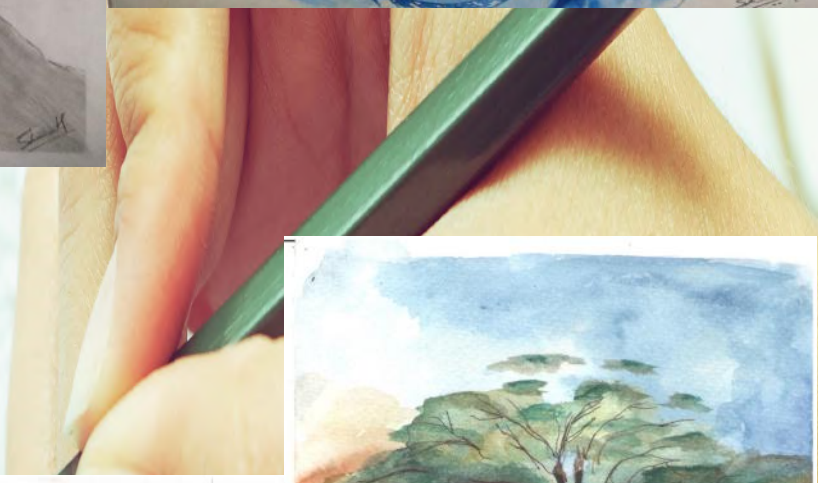
—Mokshagundam Visvesvaraya

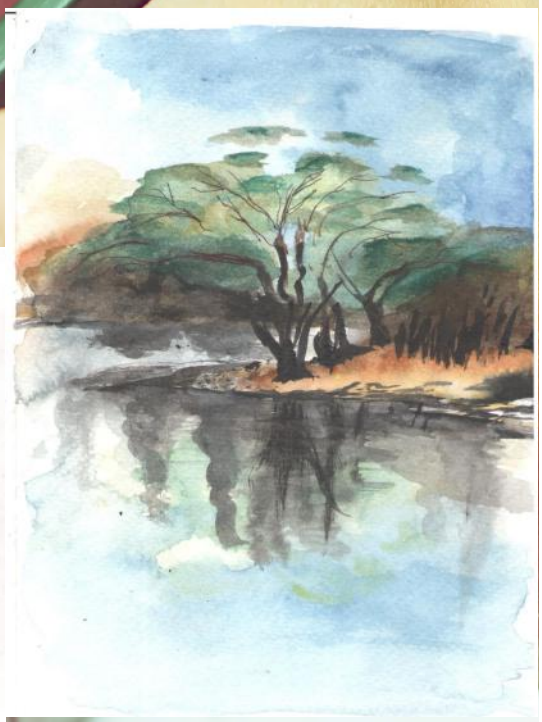




SKETCHING

Art By
Mr Shamanth
IV SEM M2





Art By
Mr Sonal Raj
VIII SEM M3 Sec

ALUMNI INTERACTION

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Alumni Q+A

CHIARA PETRIA D'SOUZA

SITE COMMUNICATION MANAGER AND BODYSHOP BUSINESS PLANNER

GENERAL MOTORS

CLASS OF 2010

Email: chiaradsouza@gmail.com

Q. Being a female mechanical engineer, share your opinion on working in an industry which is male dominated.

There are unconscious and subtle bias against women in the workplace as well as in the outside world. This bias generally cannot be pin - pointed so as to be able to take steps towards its eradication. I believe that the workplace is gender neutral; the workforce being graded on a continuum in from the incompetent at the lower end to the competent at the higher end. In order to overcome the stereotypes gender bias one must gently yet firmly sensitize ones colleagues. In short, I simplistically introduce myself as a Mechanical Engineer, without any prefixes. I let my work speak for itself. If I am still overlooked, I blow my own trumpet. My advice to those who are sidelined is to: Toot your horn!

Q. Based on your work experience, what skills/tools you recommend for the current students to be more employable.

Hone your skills: Never stop learning and whatever be the stage of your career, engage in self-development. Choose courses in which you are interested. Take the Courses. Read about them. Keep yourself updated in that field.

Network- You never know who will be able to help you through thick and thin of your career. Keep in touch!

Learn to influence and negotiate: This will be of great use. Where you can't convince nor influence... Negotiate!

Move out of your comfort zone and take part in extra-curricular activities- This is necessary for a 360 degree development.

Learn a new language- It always helps to be able to share this common bond. Even a few words may work miracles!

And master MS excel- Nothing can simplify work like it does..!

Q. Do you see any emerging fields in the near future the students need to be aware of?

With global warming being a major challenge- the future lies in renewable energy, product innovation and design. Each product and service will be challenge. The challenge is to make it sustainable and cheap. Start-up are blooming. The focus is to develop them and make big corporates run for their money.

Q. What would you tell the current students about corporate culture, professionalism, etiquettes and work-life balance?

Corporate culture- Depending on which company or clients you work for; adapt your ways to gel with their culture.
Professionalism- Be respectful of everyone's ideas. Explain why you don't agree with the idea with an example. Communication is key
Etiquettes- Be punctual... Time is precious
Work-life balance- Time management is key... Family is most important, it is the back up on having a hard landing in life. Don't compromise your family time.

Q. Share your thoughts and experiences on life at SJEC.

Alumni of 2010 batch. There were only two girls in my batch of 120. So we were already technically ready for a male dominated engineering field. SJEC gave me a platform to develop myself and make the most of my college life.

It attired me with the basic skills-My degree was the proof of academic credentials. It's how you utilize your college resources to gain from it. I still remember lecturers who have taught me the toughest subjects in the simplest form. Thank you!

Furthermore, now I really see the difference between an engineer and a lay person. The thinking and reasoning is a class apart. We are now programmed to think with scientific reasoning. Extra-curricular activities have helped me interact and network with people outside my comfort zone. Fun is as important as studies. Best friends were made at college! Hostel life was a family away from family! The 8 o'clock curfew at the gate (some other rules were broken many times), best of three internals (doing reverse engineering to calculate the passing marks needed), Xerox center… knowing my syllabus better than the subject matter; the late night record writing sessions, the machine shop- all the metal filings, the eye drops after the wonky welding done, muddy die making, all those whirring turbines, the hammering of the hot metal (Great stress buster), feeding of charcoal fires; the lathe machine; the terrific answers we gave at external viva; final year projects, the mechanical association-Torque, Red cross unit, sports day- all these moment I deeply cherish!… Happy memories keep tumbling out.

Alumni Q+A

JOHN BAPTIST

CO-FOUNDER D&D SMARTLABS

CLASS OF 2016

Email: rodriguesjohnbaptist@gmail.com

Q. How does it feel to be a young entrepreneur, and at the same time, a student?

"An entrepreneur is a life long student", so there is no much difference between an entrepreneur and a student, in fact, being an entrepreneur helps you become a good student. However if you ask me some of the challenges I face I would say to keep up with things, I attend the classes from 6 pm to 9 pm and come back home and have meetings and working on the company. It takes a sense of commitment and passion for your work, to stay dedicated, which comes automatically when you love what you do. Dedicating time for studies and company can get hard, but remember one thing, be patient nothing happens overnight spending 30 mins a day and few good numbers of an hour on weekends can make a huge difference, One day at a time.
As an entrepreneur, you are responsible for your team and build the companies vision. Even after all the challenges I face on an everyday basis I am grateful for being a student as well as running a company because being a student you learn things which can help you take your company to the next level, students get opportunities more than a full-time business owner, this initial support and mentorship helps for a long way.

Q. What are your plans for D&D Smart Labs?

One day, I was in New York city in a cafe , I took out my book and wrote on it, India will be one the best Design studio and research centre and it will be D&D SmartLabs. D&D is going to be place where design and engineering will work together. Our goal will always be to design meaningful products that meets the users needs. A well crafted product is a effort of Interdisciplinary team. I, Claran and Winston always vision and practice this at D&D SmartLabs.

Every overnight success has it struggles behind it, while we portray only the success part of it and life looks good on the social media, there is a consistent hardware and struggles behind it. However at the end the good work speaks for itself. Right now we are focusing on three main projects the CoffeeBot, D&D smart prints and the other is D&D Smart kit. Which we dream to be reached in hands of people someday. In the coming months we will be launching our services too.
Where we will be providing services in product design engineering, app and web design and development work. D&D SmartLabs also works with its early vision of virtual collaboration to build it's product and building these processes to bring out products to life without being limited by the location, job or any other factor.

We also plan to create employment opportunity in India where the students get to work on some of the best projects which will help them with career and and explore things which will help to know what to pursue. We observe on everyday
day basis that student come out of college without knowing what to do, this is because of lack of exploration, at D&D SmartLabs we plan to provide the platform to learn new things as they work on some interesting projects with us.

Q. Based on your work experience, what skills/tools do you recommend for the current students to be more employable.

It's simple yet complex one line statement, **Learning how to Learn.** This is what is needed to be learned in order to reach your potential. The technology is changing rapidly and the AI taking over most of the Jobs. It's import to build up that mindset to learn things quickly and implement.

Mastering your skill/craft and having an open mind to collaborate, is what's needed. From experience one of the best way of learning is taking up a personal project and working on it, it will help you to know what you want to do or pursue.

Most of the time we come out of bachelors programming without knowing what to do after that, it's because we did not explore enough to tell ourselves this is what that I want to do.

The tools get outdated over time the skills we have now is absolute in the next 3 years, this makes us think is mastering the tool is what's needed? or learning the process of learning the tools is needed?

That's my philosophical advice, and here is my particle advice for becoming employable, look into what the companies are looking for? go to their career page and plan accordingly.

Having a portfolio will also help you to reach your career goal, I encourage all students to have a portfolio which talks about them and type of projects are they are involved in, which help the employers to learn about you.

some practical advice to gain experience during college, work on some personal projects- quick tips: projects are considered as an experience. During your college days, visit companies and try to solve some of the problems they face, this will defiantly help you be employable.

Alumni Q+A

Q. Share your experiences of education in India and US?

This is indeed an interesting question, the experience study India so completely different from the US. well, it depends on the type of the major you are in, however, I will write a general overview. Even though we undermine the education in India some of the brilliant minds are from our country, education in India is disciplined and kinda pushes your limits.

Here is my experience studying in the US, the education in the US is project based study, where we work entire semester on the multiple small projects which are assigned in such a way that it helps you with your major project, and at the end of the semester we present that major project.

Yes, we don't have exams and if there are exams they are open book exams, I think that's the best part here, instead of cramping everything one day before the exams and getting graded based on how well you present that.

The grades are based on how well you present your project and how punctual you are with the assignment submission. The education here is very flexible with the study, we are allowed to change major any time you want, get subjects
are different major, the interdisciplinary study is highly encouraged. Which kinda gives students the creative freedom and help explore more which students need during their education phase.

But remember here the students work and pay for their education, we have the luxury in India of parents financially supporting us, make best use of that.

If I had the power to change education, I would reduce the college hours and encourage project-based learning. The industry needs that

Q. What suggestions do you have for students who want to initiate a Start-up?

The word start-up itself says it all, the only way to initiate this is my starting up. The best of learning business is by doing it. The most common fear we face in this journey is the fear of failure. Some the questions we have when we start are, what will happen if I fail, what will my friends a family think of it. The real entrepreneurship spirit lies in accepting the failures and learning from it.

It's ok if you don't have much experience in the specific area you are starting a business in, having the mindset of LEARNing-ALONG WAY is needed, this will help you with your venture journey.

Start a startup in a domain which you are passionate about, this helps you to build the vision for your company, as founder once your team grows you can't work much on the product, your role turns into building the vision for the company, bringing together a team, and taking the company forward.

As engineers it's easier sometimes to get stuck with the technical side sometime, which is ok since thats his/her forte, but it's important to understand, whom you are designing the product for, how it is help your end user, considering your end users need, understanding this will help your company to build human cantered design.

Be ready to face pressure from the society , its not going to be a easy path, you will cry most of the time than celebrating success , but there will be days when you will be look back and feel proud of what you have created and you will say, it was all worth it.

"Alumni led Startup sprouts at SJEC Campus-D&D Smart labs"

Design and Development Smartlabs is the first startup to operate out of SJEC Campus. Co-founded by John Rodrigues and Claran Martis along with Harsha Alva as Technical Advisor, all SJEC alumni from the Class of 2016, Design and Development Smartlabs is a Product Design and Development company/ startup.

Incubated at SJEC and virtually incubated at Collaborizm, New York, US, the Company operates from the Engineering Innovation Block of the SJEC Campus.

The vision of the company is to combine the digital world with the physical world to develop meaningful products for the people. The company works towards research and development of products for the future.

The approach for building products is, integrating technologies like robotics, AI, IOT and user-centered design approaches to build meaningful products for the people and alleviate the pain points of the society, creating an enriching user experience around the products we use. D&D Smartlabs will create opportunities to work on upcoming technologies and help our younger generation to build their career in these technologies, which also results in bridging the gap between theoretical and practical based learning.

Alumni *Interaction*

ALLEN JOEL FERNANDES

SUB-LIEUTENANT IN INDIAN NAVY

CLASS OF 2017

Email: allenjoel190895@gmail.com

Mr Allen Joel Fernandes passed out during 2017, presently serving as sub-lieutenant in Indian Navy gave presentation on "Opportunities and Life in Indian Navy".

Mr Allen briefed about procedures in SSB interview and he shared his experience in qualifying different rounds during the interview process. He also shared about his stage 1 flying training in Air Force Academy, Hyderabad from June 2018-Dec 2018. Currently Mr Allen is undergoing Stage 2 flying training in Air Force Station, Yelahanka and is expected to complete by June 2019.

During interactions, Mr Allen shared few interesting points like, he applied though online applications to SSB interview, with no family background in defense he could get selected purely based on merit and performance in selection process. He gave tips to students not to miss a single class and keep their teachers as role models in their life. Mr Allen also shared that the discipline and the attitude towards studies has helped him to achieve his position and he is happy with this and his family also got lot of respect and recognition after he joined Indian Navy.

Khalid Mohammad Zulqurnain
Project Planning Engineer
Expertise Contracting Co Ltd. Dubai
Class of 2017

Alumni Article

10 things to do Before you Die

1. Go on a pilgrimage.

Pilgrimage does not mean taking tours of temples, churches or mosques. It's about spiritual connection between one's own desire (for e.g., if you are spiritually connected with cars then you can take a visit to the world's best car manufacturing factory, if your spiritually connected to photography, then you can visit the world's most popular photography exhibition in Venice). Your desire should be in such a way that up on fulfilling it, you should feel complete.

2. Eat a meal good enough to be your last.

Keeping health in mind, it's not possible to have all sort of food at all ages. Therefore at least once in your life time try to have a satisfied delicious meal with patience which will be remembered forever.

"To eat is a necessity but to eat intelligently is an art."

3. Write a poem.

Poetry is always valued irrespective of languages. Knowingly or unknowingly there is a hidden poet in everyone. Everyone feel uncomfortable to reveal the hidden poet inside themselves, but still no issues keep it yourself and try to get the talent out by writing a poem.

4. Take a solo trip to unknown place.

A man who goes alone can start today, but he who travels with another must wait till the other is ready. As you travel solo to unknown place being totally responsible for yourself, it's inevitable that you will discover how capable you are. Travelling alone will be the most liberating, life changing experience of your life. Try it at least once! (Once a year, go someplace you have never been before)

5. Sleep on the terrace looking at sky.

Due to the modern days apartment culture it is not possible to spend a night gazing at the stars. Though it sounds simple, it is much fulfilling if you get an opportunity to do the same. "If people looked at stars every night life would have been very different".

6. Take a trip through the sea.

Origin of all the civilization has begun at the banks of river or at the sea shores, there is huge connection between humans and water. In today's technology we are able to easily fly in the sky but we are actually missing the beauty of the sea. Everything has beauty. But not everyone sees it. If you want to feel beauty, take a trip through the sea.

7. Time capsule.

This concept might be new to everyone; it actually means surprising the next generation by gifting them of what we have today. For example try to bury a nokia 1100 by packing it in a box. In the next generation when someone gets it surprisingly he or she will have a great feeling looking at it. Sounds strange but trust me it really feels good.

8. Helping an unknown person without expecting any returns.

The joy of giving is priceless. Helping unknown people without expecting anything back in return gives you a great satisfaction. Smallest things in life gives you lot of happiness.

9. Forgive someone.

God's greatest gift to human is to forgive and forget. Remember, when forgive, you heal and when you let go, you grow. Things don't happen for any reason. They happen to teach you something. So try to forgive

10. Gift your parents at least once.

The most beautiful thing in this world is to see your parents smiling, and knowing that you're the reason behind that smile. For all that our parents do for us; there is no way of repaying them. Though they do not expect anything but love from us, an occasional thank you or an acknowledgement to appreciate them, might just make them happy. So always try to make them smile.

From all the above things it is clear that it is the smallest things that make us happy. One fine day when you turn back and look at your life, it's not the achievements that make memories but the smallest things that makes us happy all time.

DINESH KUMAR
Exedy Clutch India Pvt. Ltd
NDP Engineer
Bengaluru

Class of 2017

if you want your articles featured in* *"THE CRANK 2020"***

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Alumni *Entrepreneurs*

John Baptist
4SO12ME040
Class of 2016

Company Name: "Design and Development Smartlabs, Mangaluru"

The Design and Development (D&D) SmartLabs, a start-up based out of St Joseph Engineering College (SJEC), Mangaluru, along with Delara Kiani, pitched for D&D Smart Kit. D&D Smart Kit is an electronic prototyping kit and online learning resource for students involved in product design as well as innovators, that helps to make interactive prototypes with visual programing. D&D Smartlabs received a grant of 1 lakh rupees to further develop their product.

D & D smart lab won the Top Rams Business Competition at Thomas Jefferson University, USA (Philadelphia Thomas+Jefferson University) conducted by Entrepreneurship BlackStone Launchpad in November 2018. For more information click the following link.

Website: http://www.dndsmartlabs.com/

Mohammed Hussainer
4SO12ME040
Class of 2019

Company Name: Al Misbah Car rental & Agro-Support Equipment's Pvt Ltd, Mangaluru

Al Misbah is a Self Drive car rental service. Launched in the year 2018 by our alumnus Mr Mohammed Hussainer. This company provides a car which saves you the cost and hassle of owning a car while giving you all the good parts: Convenience, Mobility and Independence.

Website: https://misbah.in/
Email: mhussainar@misbah.in

Dilish Lobo
4SO13ME034
Class of 2017

Company Name: "WAMLOR – Eco Water Bottle, Mangaluru"

WAMLOR is Glass Water bottles are made of high durable heat resistant premium borosilicate glass. It is resistant to thermal shock and can be used at very high temperatures, unlike normal glass bottles which shatter at high temperatures. It is corrosion resistant, unlike plastic or steel. The presence of optical clarity complements the aesthetics. Glass water bottle is safe and your water will taste just like it should. Fruit juice, tea, coffee, milkshake can be stored for hours long in the bottle (placed inside the fridge, in the car or on the dining table) without any fear of leaching of toxic chemicals. When you own one, you care about your health. This water bottle is Eco friendly and non-toxic.

Email: dilishlobo@gmail.com

Alumni Entrepreneurs

Ananth Mallya
4SO11ME011
Class of 2015

Company Name: Sri Ram Soaps, Mangaluru.

Although graduated as a Engineer, He was more passionate about business. Registered a proprietorship company called SRI RAM Detergent Liquid manufacturing. Major market being Amazon India and Flipkart.

srswmlr@gmail.com

Jackson Noronha
4SO11ME045
Class of 2015

Company Name: Lohatec LLP., Bejai, Mangaluru

Lohatec
Contract Manufacturer of Machine Components

Lohatec was formed with the aim to improve efficiency in the machine parts manufacturing industry, while providing customers with an exceptional experience.
We at Lohatec focus on the manufacture of quality machine components and precision parts. We provide a wide range of custom machining services, including CNC Milling Service, CNC Turning Service, Mechanical Component Design, Grinding, 3D Printing, Laser Cutting & Engraving (Metal & Non – Metal).

With skilled personnel in design, manufacturing and quality control, we have the capability to meet the exacting need of our industrial customers with timely delivery. For more information contact

Website: http://lohatec.com/
Email: lohatec@gmail.com, info@lohatec.com

Pravith Rodrigues
4SO14ME082
Class of 2018

Company Name: Kasera - Easy chair Start-up, Mangaluru

The Kasera is the first product from techfurno which is an updated form of an easy chair. This is particularly made to give immense relaxation. This is best suitable for office workers, the old generation, the young generation and for all the people who just want to relax.

Email: pravith32@gmail.com

Vion Joseph
4SO13ME122
Class of 2017

Company Name: Vtria Engineering Solutions Pvt. Ltd., Mangaluru

Vtria Engineering Solutions Private Limited is a Private Company incorporated on 24 October 2018. It is classified as Non-Govt company and is registered at Registrar of Companies—Bangalore. It's authorized share capital is Rs 1,000,000 and its paid up capital is Rs 100,000. It is involved in Business activities. They provide Automation (PLC, SCADA, DAQ, LabVIEW, MATLAB), Airconditioning (HVAC&HVLS) and Security solutions.

Email: vionjosephmartis@gmail.com

OBITUARY

Khaja Bahauddin

In your absence we will think of you as the most Humble Person in College, because you will be on everyone's minds as the most Kind Hearted and Likely to Succeed, because you've touched all our hearts. As the most wonderful soul, because you rest in a better place.

When you were here, you had:
The Best Smile
The Best Personality

Without you, we will be:
The Most Likely to Miss a Friend
The Biggest Criers
The Most Likely to Feel Sadness

As the year passes, We will find some comfort in your memory because thoughts of our time together are the Best Memories anyone could have.

Message by **Athulya**

Ananth Bhat

"The smartest and the happiest person I have ever met. Ananth Bhat was the spark in my college life. He was the most intelligent, the knowledge that he shared with me will always be second to none.

I wish he had shared the thing that upset him so much. I wish he were here still spreading smiles and sharing knowledge everywhere he went.

Rest in Peace my friend"

Message by **Shawn Mansel**

Dixth Raj

Aristotle once said, 'A friend is a second self'. Dixith was one such person. A gem of person who brightened up our day with his ever-wonderful smile and his fantastic personality. He was a friend who had a good rapport with everyone he met and made an everlasting impact.

He was the best in our group for all things mechanical and his skills were second to none. I still recollect the time I enjoyed with him during our college days and greatly miss his company. The loss of a friend is like that of a limb; time may heal the anguish of the wound, but the loss cannot be repaired.

May your soul rest in peace my dear friend.

Message by **Duane Gonsalvies**

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering was established in the year 2002 with the vision of nurturing technically competent and socially responsible Engineering Professionals. Alma mater to more than 1000 Graduate Engineers over the past 14 glorious years; the Department has soared to newer heights with the efforts of the well qualified and dedicated faculty and state-of-the-art infrastructure. The Department offers Undergraduate (B.E.), Post Graduate (M.Sc. Engineering by Research), and Doctoral (Ph.D) programme; with an annual intake of 180 candidates for B.E. Mechanical Engineering programme. The Department believes in the overall growth of a student in both curricular, co-curricular and extra-curricular activities and encourages them to participate in various paper presentations, seminars, workshops, industrial visits and other technical activities and strives to prepare students for carriers across a broad range of industries. The faculty and research scholars in the Department are actively involved in research and have published their research in many national and international journals in fields of Composite Materials, Tribology, Fuel Cells, Spray Forming, Lean Manufacturing and Six Sigma. All of the Department's laboratories and workshops are accessible to students for conducting project work, curricular lab work and other mini projects. The Department proudly announces re-accreditation of its B.E. Mechanical Engineering programme by the NBA for the third time which is valid till June 2021.

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