P E S COLLEGE OF ENGINEERING

Mandya—571 401, Karnataka, Estd. in 1962
(An Autonomous Institution affiliated to VTU, Belagavi)
Approved by AICTE, New Delhi
Grant in Aid Institution (Govt. of Karnataka)
Accredited by NBA (Six Programmes) & Accredited By NAAC
Secured Rank 161 by NIRF-2019 Rankings, Approved by MHRD, Govt. of India

Chairman - BoG: **Dr. Ramalingaiah,**   Principal & Director **Dr. H V Ravindra**
TEQIP Coordinator & Editor: **Prof. B Dinesh Prabhu**

TEQIP-NEWS LETTER

Vision:

"P.E.S.C.E. shall be a leading institution imparting quality engineering and management education developing creative and socially responsible professionals"

Mission:

- To provide state of the art infrastructure, motivate the faculty to be proficient in their field of specialization and adopt best teaching-learning practices.
- To impart engineering and managerial skills through competent and committed faculty, using outcome based educational curriculum.
- To inculcate professional ethics, leadership qualities and entrepreneurial skills to meet societal needs.
- To promote research, product development and industry-institution interaction.
- Highly committed to provide quality, concurrent technical education and continuously strive to meet expectations of stakeholders.

➢ The Project, 3rd phase of Technical Education Quality Improvement Program (referred to as TEQIP-III) is fully integrated with the Twelfth Five-year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions to improve their policy, academic and management practices.

Project Objectives:

- Improving quality and equity in engineering institutions in focus states
- System-level initiatives to strengthen sector governance and performance which include widening the scope of Affiliating Technical Universities (ATUs) to improve their policy, academic and management practices towards affiliated institutions, and
- Twinning Arrangements to Build Capacity and Improve Performance of institutions and ATUs participating in focus states.

Project Scope:

- Only the Government and Government aided AICTE approved Engineering Institutions/Engineering Faculty/ Engineering Teaching Department/ Constituent Institutions of Universities / Deemed to be Universities and new centrally funded institutions in SCS will be the part of the project.
- An estimated 200 Government and Government funded engineering institutions, including Affiliating Technical Universities (ATUs), selected under different sub-components in one or two cycles.

Project Strategy:

- The project is implemented in alignment with the 12th Five Year Plan (2012- 17), based on faster, sustainable, and inclusive growth.

Project Design:

- TEQIP seeks to enhance quality and equity in participating engineering education institutions and improve the efficiency of the engineering education system in focus states.

1. TEQIP-III Assignments

The TEQIP Team and Institution Academic Team members assigned specific tasks related to the development of the Institution supported by TEQIP-3. This task may be a MoU activity with other elated institution/ TEQIP-III assignments/ related to Twinning programme that shall be carried out under project for better execution of the TEQIP-3.

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Type of Academic Activity	**Review of Procurement and Training – W/s on Procurement of Goods & Consultancy Services**
Details of Academic Activity	Training Assignment
Faculty / Staff	• Dr. H V Ravindra Principal PESCE Mandya • Dr. Umesh D R Nodal Officer-Procurement
Date & Place	17th to 18th Dec 2019, Lucknow, UP

➢ The SPIU-UP's hosted Two Days programme on Procurement Review and Training on Procurement at Lucknow on 17-18 Dec 2019. The World Bank officials reviewed the Procurements ensuring completion of procurement by Mar 2019 of all Mentor / Mentee Institutes of UP TEQIP Institutions. Dr. Umesh D R, Nodal officer (Procurement) of P.E.S.C.E., Mandya, presented the institute procurement details to the committee and the same was appreciated by the NPIU / World Bank officials.

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2. Twinning Programme activities

A good Mentor, in Twinning Arrangements, is a 'critical friend' to an institution. Someone who is committed to supporting both the needs of those institutions to which they have been assigned, as well as the needs of the TEQIP project overall. Mentors are principal project representatives and 'agents of change' who keep up to date with initiatives and developments related to the institution and the project as a whole. Mentors listen, understand, guide and advice - principally to support and assist institutions to stay focused on the goals and targets set by the institution in their Institutional Development Proposal and any institution strategic plan.

A good Mentor feeds back and explains to institutions what they find (good and bad practices) and bases their feedback on sound evidence. A good Mentor tries to leave an institution better than they found it. Some of the suggested activities under the scope of the project are, Improvement in Teaching, Learning and Research competence, Improve student learning, Student employability, Increasing faculty productivity and motivation. In total, establishing a twinning system between Mentor and Mentee Institutes for overall academic interaction between the institutions.

Few Aspects under twinning program shall include, Implementation of curricular reforms, Exercise academic, administrative, financial and managerial autonomies and accountabilities, improve student performance and evaluation, obtaining accreditation of eligible undergraduate and postgraduate programs.

Conferences Conducted Under Twinning Programme	
2nd International Conference	**4th International Conference**
Organized by	Organized by
Departments of Mech. Engg. Sciences (ME, IPE & AE)	Circuit branches of Engineering (CSE,ECE, EEE & ISE)
On **ICAMES-2K20**	On **ICEECS 2020**
During 28th & 29th February 2020	During 10th & 11th January 2020
At PESCE Mandya, In collaboration with UNSIET, VBSPU, Jaunpur, UP	At UNSIET, VBSPU, Jaunpur, UP In collaboration with PESCE, Mandya

Details of Academic Activity	**Recent Trends in Electrical, Electronics and Computer Science (ICEECS 2020)**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. K A Radhakrishna Rao • Dr. Punith Kumar M B Dept of E&CE
Date & Place	6th to 9th Jan 2020, UNSITE, Jaunpur

Session Chair: Dr. Punith Kumar M B-: Attended the conference as organizing Chair.

observations: Good organization and Good hospitality to guests and speakers. Good speakers but time provided to them was very short and Too many plenary and invited talks and Fairly good oral and poster presentation (in terms of numbers)

➤ Roles Played: Dr. K A RadhaKrishna Rao: One of the guest in the Inaugural function speaking about the Conference and representing Principal and TEQIP Coordinator of PESCE

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➤ Dr Umesh D R was presided as Session Chair for International Conference on Recent Trends in Electrical, Electronics and Computer Science & Engineering which was held in Twinning collaboration with PES College of Engineering, Mandya with UNSIET, Jaunpur, UP at UNSIET, Jaunpur, UP on 10th – 11th, January, 2020.

Session Chair: Dr. Umesh D R -: Attended the conference as organizing Chair.

observations:

Details of Academic Activity	**ICEECS 2020 - Session chair and Critical Subject Training**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. Nagarathna • Dr. M L Anitha • Dr. D R Umesh • Dr. S Vinay Professor of Dept. of CS & IS Engg.
Date & Place	10th to 11th Jan 2020, UNSITE, Jaunpur

Good organization & hospitality to guests and speakers. Good Number of Papers revived from various Inter Disciplinary streams. Good converses ion and invited talks and Fairly good oral and poster presentation (in terms of numbers)

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Details of Academic Activity	**ICEECS 2020 - Session chair and Critical Subject Training**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. K A Radhakrishna Rao • Dr. Punith Kumar M B Dept of EC Engg
Date & Place	10th to 11th Jan 2020, UNSITE, Jaunpur

➤ Primary Tasks: a) Conducting course of Critical Importance (Digital Signal Processing) and b) Attending International Conference on Recent Trends in Electrical, Electronics and Computer Science (ICEECS 2020).

Objectives: 1) Educating 6th sem Students of E & C and E & I on Signal Processing concepts, 2) Provide an awareness on MATLAB tool and its use in Signal processing, 3) Develop confidence and remove fear of difficulty in the subject Digital Signal Processing and 4) Enabling ICEECS 2020 with advises and participations. Outcomes: Student will be able to, a) Differentiate between different class of signals, b) Apply proper frequency transform, c) Understand need for DFT, d) Apply different properties of DFT, e) Compute DFT of a given sequence and f) See the necessity of fast computation of DFT. Mode of delivery: 1) PPT and chalk board for the theory class and 2) Laboratory with MatLab software. Evaluation: One test comprising of written and lab exercise was conducted (question paper attached).

Conclusion: a) Students were struggling from lack motivation b) There were few very enthusiastic students with great carrier aspirations & Interest level of students is generally low and c) Need to work on foundation knowledge & d) Students need to improve their communication skills.

Details of Academic Activity	**Critical Subject Training Intellectual Property Right**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Mrs. Pooja Nagpal • Mrs. Chandrika Assistant Professors in Dept. of MBA
Date & Place	3rd to 6th Feb 2020, UNSIET, Jaunpur

➢ The sessions on day 1 were about, Introduction to IPR, nature, scope and process patenting and development, followed by technological research, innovation, etc in the morning session. Followed by afternoon session on, IPR in international scenario, topics which were covered were IPR conventions, WIPO and TRIPs agreements, procedure to grant the IPR and Patenting under PCT (two different phases of patenting under PCT). Apart from this, we have covered a case study on Canadian firms entering China's market and role of IPR in China – risks and challenges. The sessions on day two was on, patent rights, licensing and transfer of technology, sources of information and databases on IPR – Patent scope, EKASWA, EPIDOS, Canadian Patent databases were covered to give details on them and scope and data availability in those databases. Post lunch sessions were held on Geographical Indications covering meaning and definition as per the IPR Act, Objectives of geographical indications, examples, need and importance, controversies, and recent changes in the related act. A group discussion and an activity to talk on pros and cons on Geographical indications were held. Students' interaction was very good and their involvement helped to widen the scope of understanding of the topic.

The sessions on day three were on recent developments on IPR legislation in India were covered along with, changes that are brought in trade mark act, patent act, geographical indication act, copyright law, protection of plant varieties and rights of farmers related law, new designs law, integrated circuit provisions, and changes that IPR committee in India is thinking of bring in near future were discussed. Post lunch sessions were on Role of Universities, IITs, IIMs, IISc, Research and Development Institutes, etc in IPR in India. We also discussed and analyzed the IPR annual report to gain knowledge on trend and progress of Indian IPR related facts and figures. Sessions also included few case study presentations done by students. The sessions on this full day were concentrated on the topic of Research Methodology, under this research scope, nature, approaches, instrumentations, research ethics, etc. were imparted to students.

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Details of Academic Activity	**Recent Trends in Electrical, Electronics and Computer Science Engg (ICEECS-2020)**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. S Vinay Dept. of CS & IS Engg.
Date & Place	10th to 11th Jan 2020, UNSITE, Jaunpur

➢ Uma Nath Singh Institute of Engineering & Technology V B S Purvanchal University, Jaunpur in association with P E S College of Engineering, Mandya and Institute for Engineering Research and Publication (IFERP) organized two-day International conference on Recent Trends in Electrical, Electronics and Computer Science Engineering" (ICEECS) -2020 at UNSIET, VBSPU, Jaunpur, Uttar Pradesh on 10th to 11th Jan 2020.

Deep learning has recently made significant

advancements in the application of computer vision, scene understanding, robotic arts, and natural language processing. Due to the convincing results that have been achieved in the scope of computer vision, there is an increasing trend towards implementation of deep learning methods in robotics applications. Many recent studies show that the unstructured nature of a generalised robotics task makes it significantly more challenging. However, to advance the state-of-the-art of robotic applications, it is necessary to create a generalised robotic solution for various industries such as offshore oil rigs, remote mine sites, manufacturing assembly plants, and packaging systems where the work environments and scenarios can be highly dynamic. A desired primary ability for these general-purpose robots is the ability to grasp and manipulate objects to interact with their work environment. Object grasping is challenging due to the wide range of factors such as different object shapes and unlimited object poses. Successful robotic grasping systems should be able to overcome this challenge to produce useful results. Unlike robots, humans can almost immediately determine how to grasp a given object. Robotic grasping currently performs well below human object grasping benchmarks, but is being continually improved given the high demand. A robotic grasping implementation has the following sub-systems. a) Grasp detection sub-system: To detect grasp poses from images of the objects in their image plane coordinates, b) Grasp planning sub-system: To map the detected image plane coordinates to the world coordinates and c) Control sub-system: To determine the inverse kinematics solution of the previous sub-system Later Technical sessions were conducted parallel in three track and followed by oral presentations from various presenters.

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➤ "Critical Subject Teaching to the Students of UNSIET" Organized under TEQIP – III conducted at Uma Nath Singh Institute of Engineering & Technology, VBSPU, Jaunpur, UP during 27th to 30th January 2020. As a Part of Twinning Program between PESCE Mandya and UNSIET, Jaunpur, UP, the following faculty members from Department of Mechanical Engineering, PESCE, Mandya were assigned to teaching Critical Subject - Applied

Details of Academic Activity	**Critical Subject Teaching Applied Thermodynamics**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. K J Mahendra Babu • Mr. Pavan K N Dept. of Mechanical Engg
Date & Place	27 to 31 Jan 2020, UNSITE, Jaunpur

Thermodynamics to IV semester students of UNSIET from 27th January to 30th January 2020. Dr. K. J. Mahendra Babu, Assistant Professor and Mr. Pavan. K. N, Assistant Professor, Mechanical Engineering, PESCE, Mandya. The main objective of this 4 days training programme was to introduce the concepts of thermodynamics to the students and familiarize them with the problem-solving methodologies of Applied Thermodynamics subject. The entire course is ICT-based with all necessary material (lectures and tutorials), that will help them to analyze and understand the vast application of

the subject. The Program was conducted in different sessions as per the schedule mentioned below: Prof. Pavan. K. N gave introduction to the students on condensation techniques used in the power plants with classification. Also, explained the various parameters to evaluate the performance of the condensers. This session was continued to show the various animations and videos for the better understanding of the working of the power generations techniques in mechanical engineering. The program was concluded on 30th January at 01:00 PM after taking a valuable feedback from the participants.

Details of Academic Activity	**Critical Subject Training Artificial Intelligent for Computer Science students**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. D R Umesh • Dr. Mahesh K Kaluti Dept. of CS & Engg
Date & Place	13th to 16th Jan 2020, UNSITE, Jaunpur

➢ Report on Critical Subject Handling for the course Artificial Intelligence at 13th to 16th Jan 2020, UNSITE, Jaunpur. P.E.S. College of Engineering, Mandya is one of the pioneer Engineering Colleges in India. Presently it is affiliated to the Visvesvaraya Technological University and is recognized by the All India Council of Technical Education, New Delhi. The P.E.S. College of Engineering, Mandya under TEQIP-3 twinning activity with our Mentee Institute - Uma Nath Singh Institute of Engineering & Technology, Jaunpur, UP, the following staffs handled One-week critical subject teaching to around 40 final year / pre-final year students of Computer Science & Engineering towards the course Artificial Intelligence. Introduction to Artificial Intelligence, Foundations and History of Artificial Intelligence, Applications of Artificial Intelligence, Intelligent Agents, Structure of Intelligent Agents. Computer vision, Natural Language Possessing. Introduction to Search: Searching for solutions, Uniformed search strategies, Informed search strategies, Local search algorithms and optimistic problems, Adversarial Search, Search for games, Alpha - Beta pruning. Knowledge Representation & Reasoning: Propositional logic, Theory of first order logic, Inference in First order logic, Forward & Backward chaining, Resolution, Probabilistic reasoning, Utility theory, Hidden Markov Models (HMM), Bayesian Networks. Machine Learning: Supervised and unsupervised learning, Decision trees, Statistical learning models, Learning with complete data - Naive Bayes models, Learning with hidden data – EM algorithm, Reinforcement learning, Pattern Recognition: Introduction, Design principles of pattern recognition system, Statistical Pattern recognition, Parameter estimation methods - Principle Component Analysis (PCA) and Linear Discriminant Analysis (LDA), Classification Techniques – Nearest Neighbor (NN) Rule, Bayes Classifier, Support Vector Machine (SVM), K – means clustering.

Lab Session Covered:
- Program to solve 8 queens' problem and Problem using depth first search.
- Program on best first search.
- Program on 8-puzzle problem using best first search and Solve traveling salesman problem.
- Solving Find-S Program and Solving Candidate Elimination Program.
- Solving Naive Bayes model
- Program on Decision Tree.

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➢ The main objective of this 4 days training programme was to introduce the concepts of Mechanical vibrations to the students and familiarize them with the problem-solving methodologies of Mechanical vibrations subject. The entire course is ICT-based with all necessary material (lectures and tutorials), that will help them to analyze and understand the vast application of the subject. Introduction, Classification of vibration systems, Harmonic motion, Natural frequency & response, Effects of vibration. Single degree freedom system,

Details of Academic Activity	**Critical Subject Training - Mechanical Vibrations**
Type of Academic Activity	Twinning Programme
Faculty / Staff	• Dr. T Nagaraju • Mr. Ranjith K Dept. of Mechanical Engg
Date & Place	27th to 31st Jan 2020, UNSITE, Jaunpur

Equation of motion, Newton's method, Energy method, Example problems. Damped vibrations, Vibrations of systems with viscous damping, Equation of motion, Logarithmic decrement. Numerical problems. Single Degree Freedom: Forced vibration, Forced vibration with Harmonic excitation, steady state vibrations, Forced vibration with rotating and reciprocating unbalance, Support excitation, Vibration isolation, Transmissibility. Numerical problems on Forced vibration, Vibration measuring instruments- displacement, velocity and acceleration measuring instruments, Numerical problems.

Two Degree Freedom systems: Introduction, Principal modes, Double pendulum, Torsional system with damping, Coupled system. Example problems. Multi Degree Freedom system: Influence coefficients, Reciprocal theorm, and Numerical analysis by Rayleigh's method, Dunkerely's method, and Example problems. Stodola method and Holzer's method, Example problems.

3. Training Programme/Workshop, STTP, FDP

The Professional Skills and Technical Training Program is responsible for the design, development, and delivery of competency-based courses to meet critical skill development needs. In addition to conduction of Training Programme Workshop, STTP and FDP, the Professional Skills and Technical Training Program provide a variety of ancillary support to academic organizations. FDP cover areas such as technical education policy, new concepts, methods and techniques, theory and skills development and up gradation of pedagogy educational technology, motivation, communication skills, management and other relevant issues to keep pace with the changing scenario in Technical Education. Training Programs designed to enhance the teaching and other skills of the faculty, and to make them aware about modern teaching tools and methodologies. It provide an opportunity to acquire knowledge about current technological developments in relevant fields. It will not only promote the professional practices relevant to technical education but also motivates the faculty to achieve competitive teaching and learning environment, thus channelizing development with respect to academic qualifications and personal matters.

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3 (a) Programme Conducted for Teaching, Technical Faculty & Students

(1) Blockathon

The Department of Information Science and Engineering is conducted one day **"Block-athon - Block-chain Workshop and Hackathon"** under TEQIP Phase III on Oct 12th 2019. Blaock-athon event was organized in association with Srichid Technologies, Bangalore. 91 teams who were shortlisted in the first round conducted on Sep 13th 2019 attended the event. The teams represent engineering colleges from PESCE, Mandya and colleges from Mysore, Bangalore, Tumkur, Hassan and Chickmagalur participated in this event. The event was inaugurated by Dr. Ravindra H V, Principal, PESCE, and Mandya. Dr Satchidananda S Sogala, Founder & CEO, SRICHID Technologies and Dr. Vinay S, Professor and Head, ISE were present on this occasion. A MoU between PES College of Engineering, Mandya and Srichid Technologies, Bangalore was signed to set up Srichid Research Lab on AI and Blockchain on this occasion. During the morning session, resource persons from Srichid Technologies, Bangalore conducted workshop on Blockchain technology. A written test was conducted to shortlist 6

teams to take part in the oral quiz. 6 teams representing following colleges were shortlisted.
a) AIT, Chickmagalur, b) SDMIT, Ujire, c) PES University, Bangalore, d) Raja Rajeshwari College of Engineering, Bangalore and e) 2 teams from PESCE, Mandya
After oral quiz comprising 4 rounds, following 4 teams were shortlisted to take part in final round which will be held in Srichid Technologies, Bangalore in January 2020.
a) AIT, Chickmagalur, b) SDMIT, Ujire, c) PES University, Bangalore and d) PESCE, Mandya. Winner were distributed prizes sponsored by Srichid Technologies, Bangalore and PESCE, Mandya

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(2) Android Application Development using Block Coding

The Department of Information Science and Engineering conducted two days under TEQIP Phase III for the 3rd semester 44 students from of ISE department, PESCE Mandya. Two day Workshop on **"Android Application Development using Block Coding"** conducted during Oct 18th and 19th 2019.
Following topics were covered as part of the 2 day workshop:

- Create Android Application of their own using blocks & User Interface Design Blocks
- Do it yourself - design, code, test and deploy on your own Android Phone/Tab & Understand Requirements
- Object Property, Method, Events Blocks
- Conditional and loop Blocks & Method blocks
- The Basics of Block Coding, Overview of the Platform -Create First Simple Button Text App
- Adding Sounds to Button and Image
- Text To Speech Conversion - Speech to Text Conversion & Login App, List Viewing, List Picking
- Calculator, Simple Stop Watch, Date and Time Picker

(3)   Being Innovative and Entrepreneur

One-day Workshop on **"Being innovative and Entrepreneur"** Department of Electronics and Communication Engineering, 5th Semester Students (3 Batches) at 14th to 16th October 2019.

Dr. Sudeendra Kaushik CEO Co-founder of PRASU started his presentation with a brief introduction on challenges faced during innovation. Then the speaker addressed the ways in innovating. Problems are to be identified which are worth solving, but not creating a problem that suits the innovation. There were discussions about how to generate ideas. Activities were performed to demonstrate how ideas were generated. Students were given few moments to think of a valuable problem and find solution for them. Later they were given platform to discuss about their innovation.

Conclusion: The speaker effectively demonstrated the importance of entrepreneurship and how innovative ideas can fire up and make the whole world fall behind it. There were lot of activities and brainstorming sessions that improved the effectiveness in planning and execution of skills. Students were asked to present their innovative ideas and made them to be aware of importance of being an entrepreneur and how one can be. Lastly, students was asked to take up a project that will solve a problem of their own, where some students came forward to assure that they will complete a project which will be beneficial for student's community of PESCE and that will be innovative of its kind. The role plays, Idea generating session, Brainstorming session were all helpful for students in building their ideas and to bring it with a proof of concept.

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(4)   Academic Educational Reforms

PES College of engineering, Mandya organized an Academic Education Reforms meeting for the newly admitted post graduate students at the institute premises on 12th October, 2019. The major objective of the programme was to make the students aware of the academic aspects of the course, the rules and regulations of the Institute of the students. Dr. H V Ravindra, Principal, while delivering a speech on the occasion, said that it was not the events but the attitude that caused success. One third of what constitutes a person is his genetic inheritance; another one third comes from the kind of upbringing he

/she receives and the remaining one third from one's own self. He also stressed the importance of dedication to one's profession and the need to have proper planning before taking up and implementing any project. Dr. K Narasimha Chary, Dean – Controller of Examination and Dr. Nagarathna, Dean – Academic, detailed the insight about the college and autonomous rules and regulation for the students. Dr. Umesh D R, Dy. Dean – Academic, proposed a vote of thanks to all the dignitaries and the students participated in the event.

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(5)   Academic Educational Reforms for B.E. Lateral Entry Students

Academic Education Reforms meeting conducted for the newly admitted B.E Lateral Entry students at the institute premises on 21st September, 2019. The major objective of the programme was to make the students aware of the academic aspects of the course, the rules and regulations of the Institute of the students. Dr. H V Ravindra, Principal, while delivering a speech on the occasion, said that it was not the events but the attitude that caused success. One third of what constitutes a person is his genetic inheritance; another one third comes from the kind of upbringing he /she receives and the remaining one third from one's own self. He also stressed the importance of dedication to one's profession and the need to have proper planning before taking up and implementing any project.

Dr. K Narasimha Chary, Dean – Controller of Examination and Dr. Nagarathna, Dean – Academic, detailed the insight about the college and autonomous rules and regulation for the students. Dr. Umesh D R, Dy. Dean – Academic, proposed a vote of thanks to all the dignitaries and the students participated in the event.

(6) Design Thinking

The Department of Information Science and Engineering conducted One day workshop on **"Design Thinking"** under TEQIP Phase III for the 5th and 7th semester students of ISE and CSE department, PESCE on Oct 16th 2019. 48 students attended the workshop. Workshop covered following aspects related to Design Thinking:

1) Design Thinking is an iterative process in which we seek to understand the user, challenge assumptions, and redefine problems in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. At the same time, Design Thinking provides a solution-based approach to solving problems. It is a way of thinking and working as well as a collection of hands-on methods.

2) Design Thinking's Phases: All variants of Design Thinking embody the same principles, which were first described by Nobel Prize laureate Herbert Simon in The Sciences of the Artificial in 1969. Here, we will focus on the five-phase model proposed by the Hasso - Plattner Institute of Design at Stanford, which is also known as school. We've chosen d.school's approach because they're at the forefront of applying and teaching Design Thinking. The five phases of Design Thinking, according to do school, are as follows: a) Empathise – with your users, b) Define - your users' needs, their problem, and your insights c) Ideate - by challenging assumptions and creating ideas for innovative solutions, d) Prototype - to start creating solutions and e) Test – solutions. It is important to note that the five phases, stages, or modes are not always sequential. They do not have to follow any specific order and can often occur in parallel and repeat iteratively. you should look at it as an overview of the modes or phases that contribute to an innovative project, rather than sequential steps.

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(7) GATE-2020, Coaching (for Civil Engineering students)

Under the MHRD - TEQIP-1.3 Program, P.E.S. College of Engineering, Mandya, structured Coaching for Gate-2020 examination for Final year students of the Department of Civil Engineering during the academic ear 2019-20. This training was organised in collaboration with THINKCell - Gate Forum, Hyderabad, a MHRD empanelled GATE Coaching/training institute. 51 students of Department of Civil Engineering have undergone the GATE Coaching/training from 12th October 2019 to 19th of January 2020. And total 150 hours of training was conducted by the said forum for the training the contents of the Gate Syllabus in civil engineering stream. Students attended the gate coaching classes and examination, but could not succeed in getting qualifying score. Few Reasons identified/understood with the students interaction is that, a) Lack of Practice and analysis of mock tests, b) Chosen portion of syllabus is not sufficient and needed depth of knowledge to get the qualifying score in the GATE exam, c) 150 hrs. of coaching is not sufficient for completion of syllabus and d) Classes could have been conducted on regular basis. Coaching classes would have been initiated early & completed well earlier to the examination date.

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(8) Rapid Prototyping

"RAPID PROTOTYPING" workshop held at GT & TC in Mysore for the students of 5th sem Mechanical Engineering, PESCE Mandya, on 22nd Oct 2019 on Tuesday. Rapid Prototyping is a group of techniques used to quickly fabricate a scale model of a physical part or assembly using three dimensional computer aided design (CAD) data. Construction of the part or assembly is usually done using 3D printing or Additive layer manufacturing technology. The ability to reproduce designs from a dataset has given rise to issue of rights, as it is now possible to interpolate volumetric data from one dimensional images. As with CNC subtractive methods, the computer aided design-computer aided manufacturing CAD-CAM workflow in the traditional rapid prototyping process starts with the creation of geometric data, either as 3D solid using a CAD workstation, or 2D slices using a scanning device. For rapid prototyping this data must represent a valid geometric model, namely one whose boundary surfaces enclose a finite volume, contain no holes exposing the interior, and do not fold back on themselves. In other words the object must have an inside. The model is valid if for each point in 3D space the computer can determine uniquely weather that point lies inside, on, or outside the boundary surface of the model. The 3D printing or Rapid Prototyping, the prepared geometric model is typically sliced into layers, and the slices are scanned into lines mimicking in reverse the layer-by-layer physical building process.

(9)   Big Data & Hadoop

The learning outcome of 2 Days Data Analysis using Big Data & Hadoop session held starting with career scope and Recent Trends is data analysis domain students further learn various technical concepts. The Workshop agenda was to have the hands-on learning with students in parallel. Day 1 Starts with Basic concepts of file system, memory, Data & its various Types/Formats. Application of Big –Data & real-time use cases. The History of Apache Hadoop & Introduction to HADOOP Eco-System. In Hadop Eco-System students get familiar with the power of Hadoop in terms of Data handling, Data Processing & Data Storage. The traditional Databases system with their benefits & limitation has been demonstrated practically, in advancement they learned the concept of No-SQL database like MongoDB & Cassendra. They went through the concepts of Schema on read & write. Moving forward the learn how to work in Virtual Environment using Virtual Box & other virtualization technique. They have implemented the Concepts of Linux OS like - RHEL & Debin with all the basic & Advance commands.

Architecture of HADOOP has been discussed in details with practical examples & hands-on session. During admin task students learned how to set-up Hadoop Eco-system in standalone machine & do the configuration as per the need of client. The concepts of MAP-REDUCE have been discussed with hands-on session using Java Technology & real-time project demonstration. The study materials of respective topics are well documented during session as class-notes. The advance processing modules of HADOOP ECO-SYSTEM has been explain using Apache PIG, A data-flow system. There was a comparative analysis of Hadoop with existing Programming language. The basic syntax, function and code has been demonstrated & student learnt how to debug the error if any in code.

In Data injection part student are having experience with both Batch Data as well as Real-time online streaming data from Web-server. The dump the data from Data warehouse to HDFS & process all the queries using Apache Pig & Java. The advance concept of Apache Flume has been demonstrated & student having the Idea of API creation & implementation with a sample project work.

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(10)   Industry Coordination Committee Meeting

Industry Coordination Committee Meeting held on 5th October 2019 to TEQIP Cell PESCE Mandya
Suggestions and views were expressed by the Industry Experts (copy of List of Experts enclosed) to bridge the gap between Institute and Industries

- ➢ UG and PG Projects should be carried out using Iterative Method or Agile method. Further, faculty should also involve in every phase of Project development work and also Incorporate Basic Science Knowledge in Project Work, Encourage Research project using new technologies like AI, Machine Learning and IOT

- ➢ Students should acquire soft skills, technical skills and morality before attaining any placement drive/interviews, Take care of huge gap between urban and semi urban area for all the activities pertaining to academics, learning activities and placements

- ➢ Revisit syllabus every semester, courses should be designed along with hands on training. Further, add new Elective Courses in a syllabus framings, like, Python programming, Network Management, Agile way of teaching, Business Intelligence, Virtualization, Open source, Computer Vision, Robotics, Information Retrieval, Block Chain, Ethical Hacking , Web Security, Cloud Infrastructure, etc….and Address the difficulties faced by students in understanding core courses. Fundamental information should be taught by application oriented. Add Art of Learning in learning.

- ➢ Technical talks should be carried out by alumni who have more experience on latest technologies, Improve personal skills of the students and Conduct Info session between professors and company person during every semester and to Vocational training for students to be carried out every semester, Create discussion forum that include Placement officer and various company HR. Get Signed more MOUs, so that various activities to be conducted at college campus

- ➢ Systematic approach should be made to remove gap between industry institute interaction

- ➢ Conduct Hackathons to explore new/innovative ides related to societal issues, environmental issues etc…and Training should be given on latest topics for staff members

- ➢ Create a common portal for various companies, so that they can put job information that should be useful for final year UG and PG students and Alumni network to be made strong and Following Important gaps in the different areas should be taken care by college and industry.

(11) Rapid Prototype Technology

One day workshop on Rapid Prototype Technology (RPT) for 3rd SEM I&P Engineering students held at GT&TC Mysuru. On 21st October 2019. Govt. Tool Room and Training Centre (GT&TC), Mysuru is a State Government Education Organization. It is associated with industrial giants like Siemens and Designates in the advanced field of manufacturing process. The workshop gives an idea on CNC Programming and on Rapid Prototyping which are used in the industries. Introduction to RPT and 3D printing Technology was given by the experts. Hands on training on Coordinate Measuring Machine and laminated objective manufacturing type of prototyping machine given to the students. Students were exposed to the new manufacturing technique using the latest Production process i.e., creating any model or object using rapid prototype technology scanner. Also they understand the basics of 3D printing technology and experienced the working of 3D printing machine. At the end of day Certificates were issued to the participants by the Principal, GT&TC.

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(12) Making of Documentary Film about activities of TEQIP-III

As per the directions of Central Project Advisor, National Project Implementation Unit, New Delhi, through SPIU, a documentary film on implementation and achievements of TEQIP-III in the state was carried out at our Institution, by experienced professional company, assigned by SPIU, on 04th November 2019. In view of this, a documentary film was made covering all the TEQIP-III activities was carried out at our Institution. The film being shot, by experienced professional company, at the Institution Location covering interviews with Management, Principal, TEQIP-III Coordinator, and Students. Some of the Important and Specific items such as Research Equipment's, Activities and locations were considered for shooting. Two Minutes of interview was carried out with Principal, Coordinators, Students and the Chairman/Management-Members at Institution. The total film at national level is estimated to be of 45 Minutes. In order to avoid the repetition in presentation, each institution was given separate subject depending upon the best performances and implementation of TEQIP-III activities at that Institution. The subjects for presentation/Interview during Documentary shooting at our Institution are;

- System level initiatives for Best Governance, Administrative and Management practices.
- Twinning Arrangements to build capacity and improve performance of Participating Institutions.
- Improvement in Teaching, Learning and Research and Collaboration.

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(13) Women Empowerment Cell Activity

The Department of Civil Engineering, PESCE, and Mandya has brought up a new initiation of starting a "Women Empowerment Cell" in the department on 5th November, 2019. Empowerment includes the action of raising the status of women through education, raising awareness, literacy and training. Women's empowerment is all about equipping and allowing women to make life-determining decisions through the different problems in society. On this occasion the "Women Empowerment Cell" organized a seminar on "She- the Power". Our honorable chief guest, Queeny Esther Sharath delivered her thoughts on women empowerment, status of women in society and contribution of women to our society. The main agenda of this seminar was successfully explained by Queen Esther Sharath. The core mechanism of this programmer was promoting women's self-help group to make women effective. To really bring women empowerment there should be changes in the women's mobility, social interaction, labour patterns, control over decision-making and access to and control over various resources. Women need to more mobile and start interaction to range of officials. According to the statistics, it has been seen that most of the women started travelling to longer distances, interacting to staff of banks, development organizations, NGOs, etc. There should be changes in the labour patterns. Women empowerment refers to increasing the spiritual, political, social, educational, gender or economic strength of individuals and communities of women. Women's empowerment in India is mainly dependent on different variables that include different variables that include geographical location, educational status and social status.

(14) Auto Industry Trends and Electrical Vehicles

A Technical Talk on "Auto Industry Trends and Electrical Vehicles" for Mechanical Engineering Sciences, held on 13th Nov .2019. The word automobile is made up of two words i,e. auto and mobile. Auto is self-propelled and mobile is vehicles and meaning of these two words is? Self-propelled vehicle?

Now a days the Indian automobile market in world is in second rank. First the technology gap are being bridged not only between India and world but also the present and future. Almost every player is introducing new engines which are smaller but powerful, lighter but efficient.

Today, the modern global automotive industry encompasses the principal manufacturers, General Motors, Ford, Toyota, Honda, Volkswagen, and Daimler Chrysler, all of which operate in a global competitive marketplace. It is suggested that the globalization of the automotive industry, has greatly accelerated during the last half of the 1990's due to the construction of important overseas facilities and establishment of mergers between giant multinational automakers. Increasing global trade has enabled the growth in world commercial distribution systems, which has also expanded global competition amongst the automobile manufacturers. Japanese automakers in particular, have instituted innovative production methods by modifying the U.S. manufacturing model, as well as adapting and utilizing technology to enhance production and increase product competition.

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(15) HACKMANIA 2.0

In order to identify and encourage the talented students all over India, **Hackmania 2.0** organized at P.E.S. College of Engineering, Mandya. The event was on 25th & 26th October 2019. It is a group event where a group may have minimum two and maximum four along with one mentor. The below are the details of the Hackmania2.0.

The innovative idea presentation and implementation was carried out in the Dr. H D Chowdiah Auditorium. In Hackmania 2.0, 28 teams with around 115 students along with the mentors,

from various institutions across India are participating to showcase their skills and develop technological methods for the benefit of society. The Themes for the event were, a) Social and Societal Problems b) Environmental Problems c) Physically Challenged Problems.

All the requirements of the students were fulfilled. Students downloaded the necessary tools and started implementing their innovative ideas. In the first round of evaluation, the jury members will go to their allotted teams and examine the ideas or the solutions they have built. The participants have to write their abstract on the give paper, jury panel will modify the abstract, and participants has to modify their solution. In second round of evaluation, the progress of each team has been checked. The Technologies they have used and marks were allotted. In final round of evaluation all teams have to give, a presentation on the solution they have bulit and jury panel will allot the marks .Finally the Winner and runner up prizes will be announced on 26th evening. The total number of teams expected were 30 teams (four in a team) and 28 teams came to picture. During the event, we provided Lunch and refreshments to all the participants. The participation certificates were also provided to all the participants. The cash prize have been awarded to both Winners and Runner Ups (2) along with appreciation certificate and the cash prize for winners was Rs.20,000/- and Up(1) was Rs.15000/- and Runner Up(2) was Rs.10000/- .The event was proposing development and implementation of innovative ideas using new tools.

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(16) Student Assessment by NASSCOM

As per the mandate of TEQIP-III, the National Project Implementation Unit (NPIU) in association with National Association of Software and Services Companies (NASSCOM) has come up with emerging technology areas which are projected to have huge employability potential for engineering graduates in coming 2-3 years. Hence, in order to enhance employability and improve placement of students, NPIU has decided to prepare students from TEQIP institutions to acquire a good knowledge / skills in fast growing key areas which includes Artificial Intelligence, Data Analytics, Cloud Computing, Cybersecurity, etc. The skills acquired in these areas need to be certified by NASSCOM. In order to enable the student to get NASSCOM certification, NPIU has formulated a systematic procedure which includes. A) Diagnostic Test (To check competency level of students for the requisite training and to identify knowledge / skills as well as strengths and weaknesses), B) Necessary Training through certified trainers & Formative Progress Review and C) Post Training Assessment (Certification)

Assessment of English usage building block through evaluation of grammar. Topics that were assessed are nouns, pronouns, articles, tenses, verbs, adverbs, adjectives, prepositions, conjunctions, subject-verb agreement and modifiers. Vocabulary: Assessment of English usage building block by evaluation of vocabulary. Topics that were assessed are word power and contextual relationships between words. Spelling & Punctuation: Assessment of English usage building block by evaluation of spelling and punctuation. These aid in construction of error free and meaningful sentences. Topics that were assessed are commas, colons, exclamations, apostrophes', common spelling errors, etc. Writing / Recording: Assessment of your ability to record text and data in formal organizational setting. Topics that are assessed include sentence formation, email / chat etiquette, filling and review of a given format/template. Reading Comprehension: Assessment of comprehension of English passages and ability to make inferences from a large amount of information. Assessment of being able to connect the dots and make conclusions based on information and ideas spread across the passage.

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(17) Surface modelling Using Solid-work 2015

Two days Expert Training program on **"Surface modeling using Solid works 2015"** Organized by the Department of Industrial and Production Engineering at 25th to 26th November 2019.

An expertise training on surface modeling using Solid Works 2015 by the trainers from M/s Keylynk, Bengaluru to the 5th semester students of our department. Training on usage of the features of surface modeling using simple models was given. A brainstorm session regarding solid modeling was done in the morning. Afternoon session was dedicated to introduction to the tools and icons to be used for surface modeling. Training was given with 5 different model using the tools and features of surface modeling. The training team was well appreciated by the students for their effective teaching solving the problems through attending individually every one. Students gave good feedback about the program and the trainers. They demanded few more programs of this kind in near future. During the program, snacks, tea and lunch was arranged by the TEQIP. Certificates were distributed to the participants. Outcomes of the program: After completion of the training program, the students are able to, a) use the tools and feature of Surface modeling and b) To create the models of different components using solid and surface modeling with Solid-works 2015 and to use techniques and skills to design the models using Solid-works 2015.

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(18) Women's Empowerment Cell Activity

Women Empowerment Cell of PES College of Engineering, Mandya is established with the motto of **"En Route towards Self-Empowered Women".** The cell's objective is to create awareness among girl students, women faculties and staff, on the issues related to their rights and duties towards gender equality, to provide them with a platform to share their experience and views regarding their status in the society and also to empower, equip and uplift them intellectually and socially through series of programs like lectures, seminars, awareness camps and other welfare activities.

Objectives: A Women Empowerment committee is constituted at the Institution Level with the following.

- To promote the culture of gender equality and To identify and develop strong leadership among female students and women staff and To create awareness among the girl students about women protection laws and rights, through series of guest lectures, seminars and workshops
- Encourage study projects, surveys and discussion forum to bring in innovative and out of box thinking and to strengthen them physically, mentally and extending more support to face the day to day situations through assorted activities like self-defense concepts, spirituality, meditation and yoga
- To conduct various cultural competitions to persuade their artistic talents within them.
- Make female students to interact with rural and urban women who lack formal education and identify projects to get financial support by identifying the sources.

(19)　Swatch Bharat Abhiyana

one day NSS program arranged and very useful work done by our PES College of engineering students on 10th Nov 2019 at Santhae Kasalagere. I herewith submitting the whole report of the program. Around 90 students are travelled by TWO college cabs, and then we have given some basic instruction to them and divided into four groups (Cauvery, Krishna, and Thunga & Bhadhra). We identified group leader in both Girl and Boy. We distributed some basic material. Before that we finish induration of camp by planting tree in primary school campus. Next we had delicious breakfast. Afterwards by all our students moved to Jatha around village holding play cards, giving message on plastic, environment, toilet etc. around 3.5km finish jatha by shouting slogans. Ext we divided the work assignmt into FOUR groups, 1). At Chowdeswari Temple, 2). At Primary School Area, 3) At Milk Producers Society and 4). At Mariyamma Temple Area. Along with students Villagers youths, Publics are also join hand in cleaning various area. After an hour of rest, students are enjoyed in sports competition. Musical chair for boys & Girls, followed by quiz competition. Uninterrupted rain has disturbed the evening program. Kum. Sangeetha performed Bharathnatyam so nicely and students are enjoyed, followed by Guest speech and mementos are distributed to those village youths are helped in smooth conducting of Camp. Mementos are also given to Gram panchayat Secretary for remembrance. In FOUR places students are removed unwanted materials, they have removed plastic materials and planted FOUR plants in all these places. Finally students are enjoyed in self-satisfied in cleaning this village. This is a memorable day for them. It is an effort for the contribution given to "SWATCHHA BHARATH ABIHAYAN".

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(20)　Modern Equipment's in Mechanical Engineering

Five days Training Program on Modern Equipment's in Mechanical Engineering for Teaching and Technical Staff from 13th to 18th Jan 2020 at CRC -205. This program was aimed to enhance the knowledge of teaching and technical staff of our department about modern equipment's acquired by the department under TEQIP-III. Fifty participants from both teaching and technical staff have attended the

training program. Each day during the first session, professors of the department taught basics of the topics relevant to the modern equipment's and hands on training on these equipment's was given to the participants in the succeeding session. The participants showed greater interest to know about the experiments on modern equipment's. They created simple solid models using solid works software and also they were keen to know the working of Fused Deposition Modelling machine, 3D scanner and latest instruments in metrology laboratory. They expressed that this training program was useful as it helped them to understand latest technology in mechanical engineering field.

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(21)　Data Science Elective Course offered by SUNY School

The State University of New York (SUNY), Binghamton University, New York, USA, as part of MoU institute/University with PES College of Engineering, Mandya, is offering an Open Elective Course on "Data Science" for VIII Semester students of CSRE, IS&E, E&CE, E&EE of our institute. In this connection, Dr. Sang Won Yoon, Professor in Systems Science and Industrial Engineering, Thomas J. Watson School of Engineering and Applied Science, State University of New York at Binghamton, New York, USA delivered the complete course lecture from 5 January to 8" January, 2020. Profile of Prof. Sang Won Yoon: Sang Won Yoon obtained his Ph.D. in Purdue University's School of Industrial Engineering, and he is currently an Associate Professor in the Systems Science and Industrial Engineering department at SUNY Binghamton.

So far, he has secured more than $4 million over 50 research projects from a variety of sponsors

including Analog Devices, Innovation Associates, Montefiore Medical Center, Raymond, Samsung, Toyota, Xerox, United Health Services, etc. His research team has been studying a variety of emerging research domains including distributed decision making, coordination protocol design and collaborative control theory, large-scale data analytics and predictive modeling, healthcare systems optimization, production & manufacturing systems optimization, and warehouse management and transportation. Also, he has co-authored more than 100 internationally renowned journals and peer-reviewed conference proceedings.

(22) 2nd Induction Programme

The 2nd Phase Induction Program was conducted in our college as per the schedule given in the above tables. Every day from 20th to 25th Jan 2020 in Session - I and Session - II two eminent speakers gave the talk on their respective chosen fields to motivate our students to develop their personality through proper education for need of society and nation. Report on 10 Days Induction Program, Academic Year: 2019-2020. Induction Program is designed to make the newly admitted undergraduate students feel comfortable in their new surroundings, to expand their vision, and to prepare them for the new stage in their life. It is run for three weeks, during which there are no regular classes. Activities are conducted during this time to assimilate the new students in the culture and ethos of the institution, open them up in thought, set a healthy daily routine, create bonds in the batch as well as with faculty, develop awareness sensitivity and understanding of the self, the people around them, the society at large, and nature. AICTE/ MHRD has recommended a 3-week Induction Program for newly admitted UG students, compulsory for all technical colleges in a phased manner in the country. Since the Program has to be conducted by faculty members of the institution, a five to seven days Faculty Development Program for Student Induction are being organized in different parts of the country. Faculty Development Program for Student Induction is organized by 'Induction Program Outreach Cell (IPOC)' with support from AICTE Regional office. Several state Cells have been opened. Each Cell is run by their respective Coordinators. IIT (BHU) is playing a national coordinating role.

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(23) New Produce Development, Geometrical Dimensioning & Tolerance

Three days' workshop on New Product Development, Geometrical Dimensioning & Tolerance for 4[th]semester students of Mechanical Engineering Department from 22nd to 24th Jan 2020 at CRC Seminar Hall. This program was intended to improve the knowledge of 4[th]semester students of Mechanical Engineering about product development, materials, dimensioning and tolerance About one hundred students have attended this workshop. This training program was conducted by Keylynk Business Consulting Pvt. Ltd. Bengaluru. Three resource persons of this company provided elaborate training on topics like New Product Development, Sheet Metal forming process, Geometric Dimensioning and Tolerance. They also involved the students in activities like making of simple sheet metal products using thick paper sheets, exact way of measuring part dimensions and tolerance calculation. All the students showed lot of interest and enthusiasm to involve in these activities. Students were pleased about this workshop as it exposed them to industrial point of view on these topics.

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(24) Web Programme:

With a view to meet the trained human resource requirements of the IT industries, we organized Two day Workshop on "Web Programming (With hands-on)" under TEQIP, Phase-III. The workshop was held at the Department of Information Science and Engineering of P. E. S. College of Engineering from 24th January and 25th January, 2020. The workshop was attended by 42 participants from the IS&E department. Throughout this workshop, students will learn about the underlying structure of the web - HTML. Students will learn how to use this tree-like structure to create websites. Students will also learn how to apply styling to a website through CSS. Students will learn about CSS syntax, selectors, and units. Along the way, students will also learn about code editors and a browser's Developer Tools.

Therefore, the purpose of the workshop is to enhance and sharpen the required skills among the students and make them employable in the IT industry. A Brief Introduction to the Internet, the World Wide Web, Web Browsers, Web Servers and Introduction to HTML/XHTML". In these sessions participants were learned the usage of Internet, World Wide Web, Web Browsers, Web Servers and HTML/XHTML. All the sessions were very much informative. The discussed Web Programming concepts like HTML/XHTML and CSS are of great benefit for the participants as the topics match with the current working domain. Participants were enlightened by creating static Web pages using HTML/XHTML and developing Web pages with visual effect using Cascading Style Sheets.

(25) Research Guides Meet

Research Guides meeting held on 22nd Jan 2020. Dr. Ajit Prasad S.L., Dean R&D presented the overview of the research progression at PESCE research center, since its inception and the futuristic challenges before the research community of the institute.

Principal Dr. H.V.Ravindra expressed his views on current status and the responsibility of younger generation in carrying on the research activities of the institute. Later the session was open for interaction among the participants and the views expressed by research guides to;

- Get the institute recognized as QIP centre to carry out full time research.
- Bring out a technical journal in the name of the institute and to Strengthen center of excellence.
- Tack Necessary actions to improve the technical report writing skills and to prepare proposal for research grant from various Agencies.
- Sponsor faculty members to IITs/NITs for their Ph.D degree, in order to enhance quality of research and to encourage research in recent technologies and applying for Patent
- Encourage application oriented research and to Provide incentives for quality publications.
- Provide centralized research facility with necessary infrastructure, to carry out research
- Enhance institute budget for research activities and to Encourage collaborative research.
- Encourage industry oriented research, Provide innovation Centre in each department to bring out innovative ideas of the students and to involve bright UG and PG students in research activities and Encourage interdisciplinary research and to Request to conduct workshop on research methodology.
- Provide Incentive to the research scholars for the best paper and best presentation award in the conference and other purposes and to showcase the institute research activities in social media and Insist Research scholars to publish 2-3 papers in a reputed journals before submitting the thesis.
- Undertake Product development and to initiate open projects at UG, PG and Ph.D. levels.
- Upgrade the research center to R & D to enhance the research activities like MOU with company, foreign university supporting research, and start-up and product development.
- Awareness of filing patents for UG, PG and Ph.D. level.

- Conduct Hackthon and Ideathon - In order to boost the patenting and product development, each department should conduct Ideathon events to encourage the students and faculty to exhibit new idea and implement into a working model. Proper cash prizes should be awarded for the best idea.

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(26) Synthesis, Characterization and Application of Advanced Materials

FDP held on Synthesis, Characterization *and* Application of advanced materials at 27th to 31st January 2020. Department of Mechanical Engineering, PESCE, Mandya.

A more insightful and focused approach to advanced materials is to consider materials that are early in their product and/or technology lifecycle. In other words, there is significant room for growth in terms of the improvement of the performance characteristics (technology lifecycle) and their sales volume (product lifecycle). Examples of these elite of materials include ceramics, glass, metals, composites, semiconductors and polymers. Advanced materials and their associated process technologies, with the potential to be exploited in high value-added products, is both a multidisciplinary area within itself and cross-cutting over technology areas and market sectors.

In this regard, the Department of Mechanical Engineering, PES College of engineering organized a Faculty development Programme in order to share and impart the recent advances in materials synthesis, characterization and application of advanced materials to the faculty members and students of engineering colleges and other technical institution. The principal focus of the programme is to impart the knowledge of advanced materials for their synthesizing, characterization and applications with the faculty members. With the view of sharing the knowledge of resource persons in concerned field to the faculty members, research scholars from many engineering colleges and research scholars and students from our college.

(27) 2nd Strategic Development Plan & Implementation

Interaction with Dr. Vasudev Naidu on Strategic Development Plan & Implementation for 2020-26

Dr. Vasudev Naidu addressed the College council members about developing Strategic Development Plan for 2020-26 for our Institute. Dr. Naidu said that, Strategic plan is a road map for pro- growth and pro -active development of any organization. It provides the ways and means of realizing the vision and mission of an organization. It provides the strategies to achieve the goals both long and short term and also the metrics associated with the performance indicators. A good strategic plan is one when all the stakeholders are involved in its preparation rather than made by external consultants.

Further he added that, Contemporary strategic plans have multiple components and each component serves a specific purpose. These components are planning tools used either separately or in groups, but their development is usually, of necessity, a linear progression. One of the purposes of the planning process is to ensure these individual components are aligned with each other and mutually supportive.

The two days' interaction, included ample brain storming sessions about how to improvise the strategic planning of 14-2020 by overcoming the lacunas in SDP of 2020 -26 with more opportunities.

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(28) Vector Design using INKSCAPE

The Vector Designing Workshop was held on 15th Feb 2020 at Computer Science and Engineering Mandya by GNU/Linux Users Group PESCE. 36 students from various branches and semester were part of the workshop. Workshop Objectives: a) To provide knowledge on Vector Designing using Inkscape, b) To make students understand Inkscape as a Tool, c) To use Inkscape for Web UI (User Interface) Development and d) To contribute to Wikimedia using SVGs.

Workshop Outcomes: a) Make sure all Students have installed Inkscape and use the software with ease, b) It will allow the students to develop UI Designs in Inkscape, c) Everyone will have a Wikimedia Account and d) Everyone would have contributed to Wikimedia by uploading SVGs at the end of the workshop.

The session started by 10:00 am. All the participants were provided with required software, files and were installed in their systems. All the coordinators downloaded the Inkscape software and instructed the participants step by step to install, it took about 25-30mins to install for all the gathered ones.

Following topics were covered during the workshop:

- Introduction to vector designing using Inkscape as tool.
- Comparison between the various other software similar to inkscape and Various image formats that are present and inkscape's svg format
- How to include inkscape designs code in Web user interface i.e to the HTML document an activity was given to participants in which hey were given a design,and asked do same in given sitpulated time as the winners of the activity were given goodies in return.

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(29) Solid modeling using Solid works 2015

Three days Training program on "Solid modeling using Solid works 2015", for 4th sem. Students of Automobile and Industrial & Production Engineering at 22nd to 24th January 2020.

Solid modeling is the state of the art technology in manufacturing fields in particular, mechanical and automobile industries. Solid modeling tools give an insight into key factors of quality and performance early in the product development phase. Digital prototyping, combined with digital analysis and simulation, allows product development teams to virtually create and analyze a mechanical product in its operating environment. They address the specific requirements of a wide range of industries and processes, covering for example cast and forged parts, plastic injection and molding operations, composites part design and manufacturing, sheet metal parts design and advanced fastening operations. The topics covered in this workshop includes: 1) Introduction to Solid Modeling and Introduction to Solid works 2015, 2) Understanding the tools to be used in Part Modeling, 3) Use of Sketching tools, 5) Creating the simple models using the features, 6) Modifying the parts using fillet, chamfer, dwarf features, 7) Creating planes to make additions and 8) Use of other features & Assembly. **Outcome of the program:** Students have learnt the use of Solidworks-2015 application software to create solid models. Also they were able to

- Understand importance of the application of CAD software in industry.
- Possess a good understanding of the solid modeling
- learn the skills and techniques of Solid modeling
- To create CAD models of different machine components and design the models at ease.

(30) Free Software Movement Karnataka (FSMK)

Free Software Movement Karnataka (FSMK CAMP) Held at Vemana Institute of Technology, Bangalore from Jan 25th – 31st 2020. FSMK Camps present a different perspective to technology. Camps not only focuses on imparting technology, but also has various talks about a technology focused society and how each individual can contribute towards a safer and ethical ethical techno-society. The students are trained in their respective tracks from scratch and are trained to meet industrial standard. The camps are residential in nature which improves the interpersonal relationship and networking of participants.

It is one of the emerging field of technology. The track focused on understanding and manipulating data, mathematics of learning, segmentation and machine learning basics. The participants will be trained in basic python, advanced python, introduction to numpy and pandas.

The session started with Introduction to Data Science track and topic wise syllabus breakup. Next started with Installation of GNU\Linux with Debian Distro, with making the usb bootable with debian iso. Basically first day was full fledge installation which took maximum time. The final day of the camp was mainly dealing with project and criston along with all volunteers helped all participants their project and ended the tack with fun filled knowledge filled workshop at the end.

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(31) Enhancing C Programming Skills

Department of Electronics and communication and Engineering PESCE Mandya had organised a 3 day workshop for the 6th semester students from 14th to 16th February 2020 on the topic "**Enhancing C programming skills".** The day one teaching was directly started by making students to write a C programme using functions to add two numbers. Later the complete structure of programming, compilation process and the structure of programming were taught by taking the programme which students had written into consideration. Further, different type of function declarations and function definitions were taught and made the students to solve many more examples using functions. Popular interview questions introduced to students and give them simple puzzles to solve to make the concepts if functions clear and more understandable.

In the late part of the session different data type's link integer, floating point, character data types were taught. In further stages of application, unsigned and signed data types, character data type, character literal, operators like increment, decrement (post and pre), binary, logical, mathematical operators, and logical operators were taught in detail. Finally, the day was concluded by introducing different type of looping statements like 'for' loop, 'while & do while' loop, conditional statements and operators were taught in detail by giving some interesting examples and making students solve some tricky logical questions. Some homework questions were also given for the students to solve.

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(32) C Programming Puzzles

Four day Workshop on "C Programming Puzzles (With hands-on)" held under TEQIP, Phase-III. The workshop was held at the Department of Information Science and Engineering of P. E. S. College of Engineering from 20th January to 23rd January, 2020. With a view to meet the trained human resource requirements of the IT industries, the workshop was attended by 43 participants from the IS&E department. This effort has the following objectives: (i) Helping II year B.E. students of IS&E to understand requirements of IT industries and (ii) Helping II year B.E. students of IS&E to find jobs through appropriate training. Therefore, the purpose of the workshop is to enhance and sharpen the required skills among the students and make them employable in the IT industry. Mr. Mahesha Padyana has delivered an interactive lecture on a) Data Types, Overflow, Implicit conversions, b) Operators and Control Flows, c) Arrays and Pointers, d) Constants and String Literals, e) Structures and unions, f) Variable scope/life, working with multiple files and g) Macros, arguments to main. In these sessions participants were learned the usage of Macros, arguments to main with few C programming puzzles. OUTCOME: All the sessions were very much informative. The discussed C Programming Puzzles are of great benefit for the participants as the topics match with the current working domain. Participants were enlightened with the most of the C Programming Puzzles.

(33) **Matlab and simulink application to electrical Engineering**

Three days Training Program conducted on "MATLAB and SIMULINK" at the Department of Electrical & Electronics Engineering of PESCE, Mandya in association with cranes software, Bangalore from 15th to 17th February 2020. The workshop aims to provide opportunities to students in the field of virtual instrumentation software's. The Programme also intends to develop the knowledge of participants for simulation with MATLAB software in the relevant field for power systems and electrical circuit simulations. The workshop attended 6th semester students of the Department. MATLAB is a powerful mathematical software package for computation and visualization used by thousands of engineers and scientists in both academia and industry. More than just a programming language, MATLAB provides hundreds of pre-written algorithms to solve almost any task: from simple calculations to complex

simulations. The Course aims at introducing and help the budding engineers learning MATLAB, So that they are familiar with the software and can use it effectively and efficiently for simulating analyzing and solving complex technical problems statement .Over all the course aims to help the students to become a skilled and efficient MATLAB user, and apply their knowledge effectively in Industrial and R& D environment. Outcome of the Program: a) Ability to write program & simulation for engineering problems, b) Ability to write basic Mathematical, Electrical, Electronics Problems in MATLAB and c) Ability to model simple circuit in MATLAB SIMULINK Environment.

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(34) **ICAMES-2K20**

The 2nd International Conference on Advances in Mechanical Engineering Sciences (ICAMES-2K20) organized by Departments of Mechanical Engineering Sciences (Mechanical, Automobile and Industrial & Production Engineering) of our institute. The two day "International Conference on Advances in Mechanical Engineering Sciences" conducted on 28th & 29th February 2020. The conference is being jointly organized in association with State University of New York (SUNY), Binghamton, New York, USA, along with our Twinning Partner UNSIET, VBSPU, Jaunpur, UP (under TEQIP-III), and in collaboration with IFERP. This conference is funded by TEQIP-III. ICAMES-2K20 will provide an excellent international

forum for sharing knowledge and results in Recent Challenges in Multidisciplinary Research. The aim of the Conference is not only to bring all the researchers, students at one platform, but also inculcates the research culture among the entire fraternity of Education in the country, thereby, contributing to the development of nation.

The conference has peer reviewed process for all the articles to maintain the quality interactions and keynote sessions have been arranged to benefit the researchers to work on recent challenges in emerging technical areas. The various thematic sessions showcase important technological advances and highlight their significances and challenges in a world of rapid changes.

Total number of papers received from National and International institutions for this conference is 73. Out of which, 54 papers were peer reviewed and selected for presentations. The total papers, divided into Thermal, Design Manufacturing and Management Streams, were presented during both days of the conference.

Presided by Sri. Basavaiah, Vice President, PET®, Mandya, Prof. Michael V Testani, Director, Thomas J. Watson School of Engg. & Applied Sciences, Binghamton University, New York, USA Inaugurated and delivered keynote address. Prof. Rohit Y Sharma, Department of Electrical Engineering, IIT Ropar, was the chief Guest and delivered keynote address. On the second day of the conference, Dr. Somashekhar S Hiremath, Professor, Department of Mechanical Engineering, IIT Madras, Chennai and Dr. L Prasanna Kumar, Professor, Geology, Coordinator for Bio Fuel Centre, PESCE, Mandya delivered the keynote address.

(35) Electronic Circuit Simulation and PCB Design using OrCAD tool.

The department of Electronics and Communication Engineering, PESCE, Mandya had organized three days' workshop on "Electronic Circuit Simulation and PCB design useing OrCAD Tools" for 4th semester students from 3rd to 13th February 2020. The planned schedule is has shown below.

Introduction to OrCAD Tools and Pspice: OrCAD is a software tool used primarily for Electronic Design Automation (EDA) developed by Cadence design Systems. a) or – Oregon – US state and b) CAD – Computer Aided Design. Cadence OrCAD PCB Designer with PSpice comprises three main applications.

- Capture is used to drawn a circuit on the screen, known formally as schematic capture.
- PSpice simulates the captured circuit. We can analyse its behaviour in many ways and confirm that it performs as specified.
- PCB Editor is used to design printed circuit boards. The output is a set of files that can be sent to a manufacturer or the electronics workshop in the Rankine Building [Manufacturer home].

The theory and practical concepts were explained in parallel. Being more comfortable with the OrCAD tools the day-2 started with designing the project by using Capture CIS and simulating it by using Pspice simulator and analysing the results obtained. The workshop started with PCB design by using OrCAD PCB editor window, the students were following the instructions given the Trainer in order to design a PCB. At last half an hour few slides were projected, explained regarding different PCB types, and its classifications. Interesting videos on how printed circuit boards are manufactured are also displayed and why things happen in that particular way was also explained with reasons by the Trainer. Finally students were asked to write a quiz and feedbacks were collected from them.

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(36) Hackmania 3.0

At PES College of Engineering, Mandya on 29th February and 1st March, 2020, H*ackmania 3.0* - A South India level Hackathon event is being organized by PES College of Engineering, Mandya in association & support by State University of New York (SUNY), Binghamton, New York, USA with twinning partner Uma Nath Singh Institute of Engineering & Technology, Jaunpur, Uttar Pradesh to bring together all the best and brightest hackers from India. It is a social coding event where the participant as to design a solution to the problem within 30 hours during the event. This event is happening for the third time, earlier on 9th February 2019, Karnataka State Level Hackathon "Hackmania 1.0"& in 25th - 26th October 2019, a National Level Hackathon "Hackmania 2.0" is hosted by PESCE, Mandya. In Hackmania 3.0, 51 teams with around 200 students along with the mentors, from various institutions across south India have participated to showcase their skills and develop technological methods for the benefit of society. The Themes for the event are a) Healthcare & Biomedical devices, b) Robotics & Drones for Human aid, c) Agriculture & Rural Development and d) Smart Vehicles

The basic necessary requirements for the participants were provided. Participants downloaded the necessary tools and started implementing their innovative ideas. In the first round, the jury panel members revived the abstract submitted by the participants. In second round of evaluation, the progress of each team reviewed the technologies that they have used. In final round of evaluation all

teams have to present on the solution that they have built and jury panel announced the winners of Hackmania 3.0. During the event, we provided Lunch and refreshments to all the participants. The participation certificates was also provided to all the participants. The cash prize have been awarded to both Winners and Runner Ups (2) along with appreciation certificate and the cash prize for winners was Rs 50,000/- and Runner Up(1) was Rs 35,000/- and Runner Up(2) was Rs 20,000/- .The event was proposing development and implementation of innovative ideas using new tools.

(37) Industry Oriented Internship Training Programme & site visits of live construction Projects.

"Two Weeks Internship & School Finishing Program" conducted for final year B.E. Students of Department of civil engineering under the guidance of, training and skill Development Cell.

This report explains the different activities carried out as a part of the internship at Prayojana Construction Management Training Institute. The training program helps to learn skills, technologies and knowledge required as an upcoming civil engineering graduate from the expert trainers who are already working in the industry. During this course, the institute provides many opportunities to visit various sites in order to understand the nature of work in the field. It is a wonderful opportunity to connect with brilliant people from the industry who share their work experience and train the upcoming engineering graduates as per the industry requirements.

I am also grateful for having a chance to meet so many wonderful people and professionals who led me through this internship period and helped me gain more knowledge and enhance my skills to have a successful career. We are glad that the U.G. students of final year from the Department of Civil Engineering, PESCE Mandya got this wonderful opportunity to become a skilled professional.

To conclude:

- The construction planning should be done in such a way that it should consume less time, it should be economical.
- External climatic conditions should not affect the construction work.
- The safety of all the people working on site is most important.
- The rules must be followed to avoid accidents at the site.
- The proper procurement and estimation will make the construction work more economical.
- For the best aesthetic view, interior designing is important and for creating a beauty inside and outside of the building, landscaping can be done.

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(38) Presentations on innovative Projects/activities by students and Faculty

Presentations on innovative Projects/activities by students and Faculty seeking financial assistance, held on 6th March 2020. The Presentations held in the presence of Honorable Chairman **Dr. D K Subramanian** of Innovation cell of our Institute, our Beloved Principal Dr. H.V.Ravindra and members of Innovation cell. The topics presented are:

- GKDC-Gokart national level design - implementation - testing on track competition. By 2 teams, of Students and Faculty, from Automobile, Mechanical and Indl. & Prodn. Engineering Branches. The Chairman appreciated the attempt made by the group.
- App development for sharing of academic materials. By Students and Faculty of Computer Science and Engineering Branch. The Chairman suggested for improvement
- IOT based Automatic Street Light Controller for Smart College - By Students and Faculty of Electronics and communication Engineering Branch. The Chairman suggested for improvement
- Characterization and development of Memristor based memory circuits - By Faculties and Students of Electronics and communication Engineering Branch. This was very well appreciated by the Chairman. In addition to this,
- ➢ A batch of 4th semester Automobile Engg. Students, approached for another GKDC kind of national level competition. But the Chairman suggested to develop and compete for the electric vehicle category.

- ➢ A batch of 8th semester Ind. & Prodn. Engg. Students presented and sought financial assistance for project on Multi axis CNC milling M/c. but the Chairman suggested for improvement.
- ➢ A Faculty & students group of Civil Engineering Branch presented a reformed method of concrete mold. Chairman appreciated the attempt made by the group.

(39) Learning MATLAB 2019a tool for DSP and M/c Learning Applications

A Workshop conducted on Learning MATLAB 2019a for DSP and Machine Learning at 27th to 28th Feb 2020, Dept. of ECE PESCE Mandya. Workshop began with the introduction to CoreEL and Mathwork and understanding Mathwork product, the introduction to the MATLAB 2019a and the new features and modification in this software was explained. The MATLAB software documentation along with features of MATLAB toolboxes was taught to the students. Provided and the session was resumed by teaching the MTALAB programming basics such as data addressing, language fundamentals, operators, functions and system objects, then the students were given a hands on session to write the program on matrix arithmetic, import and export data and MTALAB scripting. The second session included the teaching of Model based design using simulink. The introduction to mathematical and physical modelling was taught along with the overview of the simulink block library. The Dampler spring model

was designed and implementation of mathematical equations in Simulink. Later, the design and implementation of Solar cell modelling and array in Simulink and comparing the results was done. Introduction to Machine Learning for computer vision application using MATLAB was taught and we were able to do the hands on projects such as image processing apps for pre-processing, train and compare classifiers using classification learner App as well as the feature extraction and machine learning for image processing.

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(40) Academic Collaboration with College of Agricultural Engg, UAS, GKVK, Bangalore

P E S College of Engineering, Mandya and College of Agricultural Engineering, UAS, GKVK, Bangalore recognize the benefits to be derived from increased collaboration, cooperation and interaction for the further promotion and understanding of high performance research. The goal is to foster a collaborative framework with a view to benefiting from each other's initiatives and working procedures and to support collaboration among the researchers associated with the institutes.

As part of this a team from PESCE, Mandya visited UAS, Bangalore on 18th March 2020. Following members were part of the team: Dr. Ravindra H V, Principal, Prof. B. Dinesh Prabhu, TEQIP coordinator, Dr. K A Radhakrishna Rao, HoD, E&C, Dr. Prasanna Kumar L, Professor, Department of Geology, Dr. Nagarathna, Dean Academics and Dr. Vinay S, HoD, ISE

A meeting with the Dr. S. Rajendra Prasad, Vice Chancellor, UAS, Bangalore along with the core faculty members of UAS was scheduled. This was followed by interaction with the faculty members of Department of Agricultural Engineering, UAS, Bangalore.

The major outcomes of the meeting are as follows:

- Co-guiding Ph.D candidates registered at UAS, Bangalore subject to fulfillment of University norms.
- Explore possibility of faculty of PESCE and UAS teaching students in UG/PG course in the role of visiting faculty.
- Internship programs for students of PESCE and UAS.
- Few of the emerging areas identified were: Remote Sensing and Analytics, Computer Imaging, Energy Harvesting, Design and Fabrication of Agricultural equipment, Robotics, Bio-gas plant
- Submit joint research projects which are multi-disciplinary in nature. The project must cater to Environment, Technology, Economic and Social Science aspects.
- A draft MoU was shared by UAS which focuses on following aspects:

- ➤ Technological collaboration in the field of Science and Technology for the benefit of farmers.
- ➤ Joint submission of proposals seeking grants.
- ➤ Joint conduction of workshops / seminar / conference / training programs
- ➤ Usage of lab facilities of mutual institutions
- ➤ Providing technological assistance & validation in testing of agricultural products when required by UAS and Sharing technical experts and human resource for innovative projects.

3 (b) Programmes Participated by Teaching and Technical Faculty

Teaching and Technical Faculty have one of the most demanding vocations in the world and in order to fulfill their important roles with excellence, they need training, motivation as well as regular mental, emotional and spiritual rejuvenation. That educational systems the world over recognize the importance of the faculty is often evident by the resources spent on their capacity building. However, the issues often have been about building an effective model and mechanism that would develop and enhance the faculties' capacity and provide them avenues for professional development. In view of this, faculties are encouraged and supported to undergo training Programmes to enhance their knowledge in academics and allied areas.

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Details of Academic Activity	**Joint Review Mission**
Type of Academic Activity	Workshop
Faculty / Staff	• Dr. Umesh D R Dept. of CS Engg
Date & Place	29 Sept. 2019, AICTE Office New Delhi

➢ Education Event held on 1st October 2019 at JACRANDA HALL, India Habitat Centre New Delhi.

The 4th Joint Review Mission of the TEQIP-III is scheduled from 23rd September 2019 for reviewing the progress of the project jointly by GoI and the World Bank. During the Review Mission, a special session is co-convened by the World Bank Group, the Association of Indian Universities (AIU), and the Department of Higher Education at MHRD, the Technical Education Quality Improvement Programme (TEQIP) and the All India Council on Technical Education (AICTE). Realizing the Promise: Education for All in South Africa is a companion piece to the World Development Report 2018 and examines the record of South Asian countries in the areas of early childhood education, schooling, teaching, skills, and higher education. It provides the most recent data and analyses on these topics as well as operational lessons.

Shabnam Sinha is Lead Education Specialist, INDIA for the World Bank Group, leading the World Bank's India program on school education and skills. She narrated on basic education and its return on investment; performance-based financing, teacher performance and incentives; skills development and labor markets. In Labor Markets, her working role in private sector and governments in skills development and the contribution of MSMEs in the labor market and female labor force participation. She focuses on results-based financing and analytical tasks in Vietnam, Indonesia, Korea and Africa.

She leads the World Bank's support to the Ministry of Skills (Govt. of India) and the World Bank support to new program of the Government of India on school education, the Samagra Shiksha, through a Bank project named STARS. She also works in the areas of Public Private Partnerships (PPPs) in Education and CSR in human development.

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Details of Academic Activity	**Joint Programme SPIU Karnataka and APIU Uttar Pradesh**
Type of Academic Activity	Visit of SPIU
Faculty / Staff	• Prof. B. Dinesh Prabhu TEQIP Coordinator
Date & Place	11th Oct 2019, SPIU office Bangalore

➢ Joint programme - SPIU-Karnataka and SPIU-Uttar Pradesh: A joint programme was planned to be conducted to provide a platform to 1.1, 1.2 and 1.3 TEQIP Institutions to enhance the academic activities, skill and employability and sustaining the TEQIP Mandate even after the completion of the project period. This meeting was conducted in continuation to the joint meeting between SPIU - Uttar Pradesh and SPIU - Karnataka on 21st September 2019 about the modalities.

In this regard active participation/hosting by BMS College of Engineering and Dr. Ambedkar Institute of Technology was requested by the SPIUs.

The Principals and TEQIP Coordinators (at least one officer from each Institute) was requested to attend the meeting on 11th October 2019 at SPIU office without fail.

So, in view of conduction of joint programme a meeting of the Principals/TEQIP – III Coordinators of BMS College of Engineering, Dr. Ambedkar Institute of Technology, PES, Mandya and NIE Mysore was convened on 11th October 2019 at SPIU office to discuss the arrangements to be made for organizing and finalizing the action plan for the programme. Dr. Anil Kumar State Project Administrator and Officers from SPIU Uttar Pradesh attended the meeting.

Details of Academic Activity	**Explore Possibility of Incubating start-ups**
Type of Academic Activity	Visit, Pratian Technologies
Faculty / Staff	• Dr. Vinay S M Dept. of IS Engg
Date & Place	14th Oct, 2019, Pratian Technologies, Bangalore

➢ Visit to Pratian Technologies, Bangalore on Oct 4th 2019 to explore possibility of incubating startups in PES College of Engineering, Mandya.
Incubating startups in the institute has become one of the important criteria for evaluation as per NIRF ranking, ATAL ranking of institutions on innovation achievements and AICTE.
Our institute is looking to explore possibility of getting industry support in incubating startups in our campus.

Pratian Technologies, Bangalore who specialize in incubating startups has shown interest to guide our students and incubate startups in our institute. Outcomes of the meeting:

1. Pratian technologies is an IT company started in 2006. Pratian Holdings is a global 'Digital Business Ecosystem' solution provider serving from Start-Ups to Fortune 500 Co's across 7 Countries globally with a Partnership Mindset.
2. Pratian technologies have successfully created startups in their campus in Whitefield, Bangalore. They provide required technical, legal, financial support for innovative ideas validated by industry experts and Pratian technologies visited our campus on Oct 17th 2019.
3. Pratian technologies have proposed a model for P E S College of Engineering, Mandya to incubate startups. The proposed plan is as follows:
   - Conduct profiling of current students to analyse their strengths and weakness through a 2 week training program. The training program will cost Rs 3000-00 per student.
   - Pratian Technologies will get companies to interview students who have taken this readiness program and Students shortlisted from this training program will be put into in innovation accelerator program. The cost of the program will be decided later.
   - Around 2-3 startup ideas coming out of this innovation accelerator program will be incubated in campus with the support of Pratian Technologies.

Institute has decided to create awareness on this. Interested students can register for the 2 week Readiness program which will be planned in January / February 2020.

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Details of Academic Activity	**Smart Village Using Artificial Intelligence**
Type of Academic Activity	Short Term training Programme
Faculty / Staff	• Jayashankara M Dept. of CS Engg
Date & Place	12th to 16th Nov 2019, IIITM Gwalior

➢ FDP programme on how to apply our computer technology like IOT and Machine Learning to Agriculture field.
Further the Lecture session conducted are –Rural Development through Entrepreneurship, Application of Computer Vision Technology in Rural development, Applications of Reinforcement Learning in Agriculture, Application of Nano Technology in Agriculture, Big Data and Future of Agriculture, The Role of ICT in

Agriculture, The role of Artificial Intelligence in Agriculture, The Industrial Approach for AI- based smart village development, Development of soft computing and applications in agriculture and biological engineering, Analysis of agriculture / village data using data mining techniques, Application of Big Data, Agricultural Risk management, Machine Learning in Smart Villages : Applications and Techniques, The future of Artificial Intelligence in Agriculture and smart village development and Agriculture Marketing

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➢ A Brief Report after Attending Workshop of Three day's intensive workshop on "Digital Security" at Ramaiah Institute of Technology (RIT), Bengaluru from 17th to 19th Oct, 2019. Gain / Achievement from the Workshop Attended: a) Learned fundamentals of Cyber security, Memory error attacks, Threat modelling, Malware trends and gain practical experience

Details of Academic Activity	**Digital Security**
Type of Academic Activity	Workshop
Faculty / Staff	• Mr. Bramesh S M Dept. of IS Engg
Date & Place	17 to 19 Oct, 2019, RIT, Bangalore

through simple, yet very illustrative and informative exercises, b) Understood the purpose and use of the Data center, Data vault, DigiLocker & Sandboxing tool, c) Learned how to secure a Home platform, Private & Public Cloud and d) Learned how to build a secure applications.

Details of Academic Activity	**Institution – Industry Interaction**
Type of Academic Activity	Summit Connect
Faculty / Staff	• Prof. B. Dinesh Prabhu TEQIP Coordinator • Dr. R Girisha • Dr. D R Umesh • Dr. Vinay S Dept. of CS IS Engg
Date & Place	8th to 9th Nov 2019, BMS College of Engineering Bangalore

➢ Summit Connect is a TWO days grand platform for Institution – Industry interaction, hosted by SPIU-Uttar Pradesh & SPIU-Karnataka in collaboration with B.M.S. College of Engineering, Bengaluru and Dr. Ambedkar Institute of Technology, Bengaluru. The event is hosted exclusively for TEQIP Institutions of Uttar Pradesh and Karnataka. The top multinational companies like Siemens Digital Industries Software's, Schneider Electric, DASSAULT SYSTEMES, HPE, NAL, FLEXERA and Adobe address the gathering on emerging technological trends, HR aspects and entrepreneurial success stories. The TEQIP Institutions of Uttar Pradesh and Karnataka Principal's / Directors, TEQIP Coordinators & officials, Training and Placement Officers, Dean's and faculty members had taken part and get benefited from the event. The brainstorming session was initiated and insisted for group presentation and preparing action plan to sustain activities like teaching learning process and industry institute partnership to enhance the employability. The Brain storming will be focused on:

• Challenges faced by the institutions, Measures taken to address the issues and Issues unable to address.
• What are the reforms you found out?
• Which reforms are appropriate and which are implemented, about NESCOM everybody should say something.
• Which industry's output you like, and which part of the industry you like and what we can adopt.
• How sustain or continue these reforms.
• Preparation of action plan (road map for the journey ahead), and the respective teams presented their views on the above issues.

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Details of Academic Activity	**Google Cloud platform**
Type of Academic Activity	Workshop
Faculty / Staff	• Yoga B S • V Chethan Kumar Dept. of CS Engg
Date & Place	12th to 14th Dec 2019, Christ University, Bangalore

➢ A w/s on Google Cloud Platform (GCP) during 12th to 14th December 2019, Offered by Google, is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products, such as Google Search and YouTube. Alongside a set of management tools, it provides a series of modular cloud services including computing, data storage, data analytics and machine learning. Registration requires a credit card or bank account details. Google Cloud Platform provides infrastructure as a service, platform as a service, and server less computing environments. In April 2008, Google announced App Engine, a platform for developing and hosting web applications in Google-managed data centers, which was the first cloud computing service from the company. The service became generally available in November 2011. Since the announcement of App Engine, Google added multiple cloud services to the platform.

Google Cloud Platform is a part of Google Cloud, which includes the Google Cloud Platform public cloud infrastructure, as well as G Suite, enterprise versions of Android and Chrome OS, and application programming interfaces (APIs) for machine learning and enterprise mapping services.Google Cloud Platform offers a range of tools and services that are unique among cloud providers, for example:

• Google App Engine is a simple way to build and run an application without having to configure custom infrastructure and Google Big Query is a fully managed cloud data warehouse for analyzing large data sets with a familiar, SQL-like interface.
• Cloud Vision API allows computer science students to incorporate Google's state-of-the-art image recognition capabilities into the most basic web or mobile app.
• Cloud Machine Learning is Google's managed service for machine learning that lets you build machine learning models on any type or size of data.

It's based on Tensor Flow, the most popular open-source machine learning toolkit on Git Hub, which ensures your machine learning is not locked into our platform.

Details of Academic Activity	Recent Trends in Machine Learning & Pattern Recognition
Type of Academic Activity	Two Week FDP
Faculty / Staff	• Shruthi P S Dept. of CS Engg.
Date & Place	11th to 24th Dec 2019, MIT Manipal

➢ Two weeks FDP on "Recent trends in machine learning and Pattern recognition" held at Manipal on 11th to 24th Dec 2019.

FDP arranged by Manipal institute of technology attracted faculty and industry members towards pattern recognition system to provide a platform for understanding the advanced concepts of machine learning and pattern recognition. Facilitate with gaining of insight into several important topics associated with Machine learning such as regression, Classification of models using SOFTMAX, some of the supervised and unsupervised learning models which include deep learning, neural network and clustering techniques. The FDP also covered feature extraction, feature selection models such as nearest neighbor classifier and its variants, the Bayes classifier and Navie Bayes classifiers, Decision trees, discriminate functions and combination of classifiers. The learning model facilitates the development of the main component of Pattern Recognition System for real life applications. It also covered pattern recognition applications such as UNET based medical image segmentation and unconstrained handwritten numeral recognition using neural network. Talks by the experts generated new knowledge using machine learning and pattern recognition for solving real world problem. It was an eye opening session it introduce innovative themes on machine learning and pattern recognition.

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➢ The QIP-Short Term Course on "Recent Advances in Materials Processing and Materials Tribology". The Short Term Course held on 6th to 10th January, 2020 at Indian Institute of Technology (BHU), Varanasi (India), gave me an opportunity to meet leading academic scientists, researchers and scholars in the domain of interest from around the nation. Topics of interest for submission include: a) Composites Materials and

Details of Academic Activity	Recent Advances in Materials Processing and Materials Tribolgy
Type of Academic Activity	FDP
Faculty / Staff	• Dr. H M Nanjundaswamy Dept. of I&PE
Date & Place	6 to 10 Jan 2020, Varanasi

Engineering, b) Nanocomposites, c) Hybrid materials, d) Advanced Composite laminates, e) Advanced manufacturing processes f) Nano-fibres and composites and i) Tribology applications of composites materials. The knowledge outcome is advantageous to the institution and to my department for expanding research work in the composites materials like MMC, CMC and PMC. The knowledge gained by interaction will also help in research activities in MMC, CMC and PMC from various eminent subject experts from around the globe. This QIP-Short Term Course helps to guiding UG, Research students more effectively. Moreover, the present QIP-Short Term Course also helped in creating new relations with the researchers from both academia and industries to share their experience and knowledge on new technologies and instruments related to my research area. It helped me in obtaining new ideas from the participating professionals and research students to the institutional development.

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Details of Academic Activity	Management Development Programme
Type of Academic Activity	Workshop
Faculty / Staff	• S B Boregowda • Dr. T M Prakash Dept. of Civil Engg
Date & Place	13 to 17 Jan 2020, IIM Indore

➢ Five Day Management Development Programme on Professional Development Training held during 13th to 17th 2020. The document on hand is a narration of the detail the events and proceedings of Management Development Programme on Professional Development Training Under TEQIP-III that was conducted by IIM Indore for the faculty members. The training was conducted at IIM Indore premises and the whole session lasted for five days. The delegates who participated in the program were from various engineering/Technical institutions across the country. The main objective behind the programme was to train the faculty members on Professional Development. The core concepts covered in the training programme are a) Mission/vision/goals of technical institutions, b) Project management c) Team building, d) Sponsorship for R&D activities, e) Stress management and f) Pedagogy. The training program was conducted successfully and all the participants took active part in all the five days of the programme.

Details of Academic Activity	**Introduction to Robotics**
Type of Academic Activity	Workshop
Faculty / Staff	• Ranjith K • Santhosh Babu K C • Chethan L • Yoga B S ME, EC & CS Dept. of Engg
Date & Place	17 to 18 Jan 2020, GNIT Telangana

➢ Two days' Workshop held at IIT Bombay to spread education in embedded systems and Introduction to Robotics on 17th to 18th 2020.
Contents of the workshop: a) Introduction to Fire Bird V robot, b) Introduction to AVR Micro-controller and Programming environment, c) Simple Motion Control using I/O ports, d) Introduction to LCD interfacing, e) Robot velocity control using pulse width modulation, f) Analog sensor interfacing using Analog to Digital conversion: a) Interfacing with white line sensors, and b) Interfacing with Infrared range finder sensor.

Interrupt programming: a) Closed loop position control of robot using position encoders and b) Robot programming for white line following. Expected Outcome:

- Become an e-LSI college by establishing e-yantra lab.
- Ssuccessfully train students on robotics and embedded systems through a dedicated e-yantra Robotics lab.
- Eencourage students to participate in e-YRC and e-IDEAS competitions.

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The Consultative on Incubators office of development commissioner MSME on 30th Jan 2020 at Dr. Ambedkar International Centre Janpath, New Delhi, was the national level forum for the platform for the new advances innovations and research result in the fields of Micro, small, medium enterprises under the ministry of MSME, Government of India. The workshop was held on 30th Jan 2020 at Dr. Ambedkar International Centre

Details of Academic Activity	**All MSME Incubators**
Type of Academic Activity	Workshop
Faculty / Staff	• Dr. H M Nanjundaswamy Dept. of I&PE
Date & Place	30 Jan 2020, New Delhi

Janpath, New Delhi, gave me an opportunity to meet leading academic faculties, scientists, and researchers in the domain of interest from around the nation with new innovative ideas. The knowledge outcome is advantageous to the institution and to my department in seeking incubating incubators under MSME programme. In the workshop they explained national jury selection committee who involved in the selection procedure. Given brief knowledge for process flow to get seed money from MSME.

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Interaction with vice chancellor of Agriculture University, GKVK Bangalore

4. Industry Institute Interaction Cell Activities

Topic of the Projects	**Industrial visit of KMF**
Name of the Department	**Dept. of Mechanical Engineering**
Date & Place	Mysore

➢ **ISHRAE** Student Chapter, in association with the department of Mechanical Engineering, arranged industrial visits on 24th October 2019, 5th Semester students of PESCE Mandya visited KMF Factory in Mysuru. The students are splitted into two groups and the groups was led by the office barriers of ISHRAE Student chapter and it was assisted by Ullas Nandankumar K S. Providing assured and remunerative market for all the milk produced by the farmer members.

- Providing hygienic milk to urban consumers.
- To facilitate rural development by providing opportunities for self- employment along with providing opportunity for steady Income at village level and First Aid facility at the Society level and Emergency visits to treat the animals on a nominal fee to be collected from the producers.
- Cross breeding facility through Artificial Insemination services at the farmers door step.
- Technical guidance and supply of root slips/seeds for Fodder cultivation by the members of the Co-operative Societies and Organizing exclusive women dairy co-operatives.
- Effective supervision/extension services through field executives of the Union.
- Implementing STEP program through Govt. of India Project.

In review, this industrial visit has been an excellent and rewarding experience for me. I have been able to meet and interact with number of people that I am sure will be able to help me with opportunities in the future. Through this industrial visit, we have learned time management skills as well as importance of ethics in an industry. We also learned that we need to be organized in an appropriate manner. From this industrial visit, we came to know how really a company works and are all the ways in which people work to make that company, a leading producer of goods in a particular field. I enjoy this line of work, but I am not sure if there is enough room to grow through this company. We will continue to work hard in gaining more knowledge and hope to continue to learn about the industry and meet new people. This was an excellent experience and we hope that other students got as much out of it as we did.

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Topic of the Projects	**Varahi Underground Power house**
Name of the Department	**Dept. of Electronics and Communication**
Date & Place	31st Oct to 3rd Nov 2019, Hosangadi

➢ Industrial visit to Varahi Underground Power House Hosangadi, Karnataka on 31st Oct 2019. The visit was organized to get some practical knowledge of the theory concept. Department of Electronics and Communication had organized an industrial visit on 1st November 2019 to SIEMENS energy automation.

We were heartily welcomed by the officials of the industry and were made to sit in a seminar hall for briefing about the industry. We were given introduction about the industry by their Quality manager Mr. Mandeep and showed us a video about the complete campus area, their production units and the kind of work they do. Followed by this we were divided into four groups with 25 in a group with two of their officials Santosh Vaidya and Sooraj Gadkar, who guided individual groups. We were allowed to go in batches. Each of the students were given guidance about the safety precautions and made us to wear safety coats along with the shoe cover. Each batch accommodated four different faculties. SIEMENS energy automation, Goa manufacturing facility included PCB assembly (SMT and THT), device assembly and complete inspection and testing of all PCB's. The industry manufactured Energy Automation devices for smart grid. The products which they usually manufacture in large numbers were Protection Relays, RTU's (Remote terminal units), CRP (Control relay panel), Test plugs and Test switches. All of these were given hands on experience with their detailed explanation and working. Each of the batch were given an explanation of almost about an hour and were made to have the actual experience of a hardware core industry and their working.

Topic of the Projects	**Indian Institute of Management**
Name of the Department	**MBA**
Date & Place	17th Oct 2019, Bangalore

➢ Students of 3rd semester MBA of PESCE, Mandya visited the Indian Institute of Management, Bangalore as a study tour on 17th of October 2019.

Indian Institute of Management (IIM) Bangalore established since 1973, is an Autonomous Business School and it works under the guidelines of the Ministry of Human Resource and Development, Government of India. It offers many postgraduate and Doctoral Programs in Management. Admission for all courses done on the basis of National Level entrance exams like CAT/ GRE/ GMAT/ NET. IIM Bangalore also conducts entrance test for doctoral programs. For NRI students institute accepts GMAT Scores. Campus spread across a boundary of 100acres near Bannerghatta Road, Bangalore-560076, Karnataka, India. The current campus was designed by Pritzker prize winning architect B. V. Doshi and was completed in 1983. IIMB is known for its unique all-stone architecture and lush woods. IIMB to set up its second campus on the outskirts of the city near Jigani in Anekal.

The library is housed in a 55,000 square feet complex consisting of four floors. This fully automated state of art facility consists of about 2,35,000 documents and books apart from 85,000 journals are available for reference. The library also subscribes to 27 newspapers and more than

Nadathur S. Raghavan Centre for Entrepreneurial Learning (NSRCEL) was set up in 2002 to aid the entrepreneurial activities at IIMB. The centre acts as an incubator for new business ideas. It is a vibrant ecosystem of industry experts, mentors, researchers, and academicians aimed at providing incubation to early-stage ventures across various stages, sectors, and scope. More than 100 companies across the globe visit the campus every year for summers and final placements. The placement processes are governed by the Career Development Services and facilitated by the Placement Committee.

With its unique architecture, the classroom block connects and communicates with the students in a way which will create a lasting impression in their journey of life. The primary design intent of the classroom block was to strike a chord with the existing campus. The existing columns were strengthened and some new columns were added along the periphery of the proposed building without obstructing the existing building. The program for the new classroom block was 8 classrooms, discussion rooms and its ancillaries.

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➢ The objective of an industrial visit is to provide us an insight regarding internal working of companies. Industrial visit helps to combine theoretical knowledge with practical knowledge. The industries we are visiting are the manufacturing Industries, SCHWING STETTER, India Pvt. Ltd. and YAHAMA Motors, India Ltd. on 7th and 9th November, 2019 at Chennai respectively.

Topic of the Projects	**The Manufacturing Industries of SCHWING STETTER**
Name of the Department	**Dept. of Automobile Engineering.**
Date & Place	7th to 9th Nov 2019, Chennai

The head office is located in Memmingen. In 1945, the company Stetter, which specialized in concrete mixers, was developed from a former forge. The first transport concrete mixer on a Magirus-Deutz truck chassis was presented at the Hanover Fair in 1958.[2] Through developments such as integrated hydraulic drive, direct drive, special drum shape, design of spirals in the outlet area and integrated oil cooler and filter systems, Stetter GmbH secured an important status in the industry. Overview of Visit: Yamaha Motors is a highly diversified company which produces products for a large number of industries and consumer market segments:

- Motorcycles: Sport bikes, Star Cruiser bikes, trail bikes, road racers and motocross racers
- Commuter vehicles, including scooters, Recreational vehicles: All-terrain vehicles and snowmobiles and Industrial robots and surface mounters.
- Boats: Powerboats, sailboats, Marine engines: Outboard motors, electric marine motors, marine diesel engines and stern drives and Personal watercraft - see Wave Runner
- Electric bicycles, Automobile engines, Industrial-use unmanned helicopters and Golf cars
- Power products: generators, multipurpose engines, water pumps and snow throwers
- Swimming pools, water sliders and pool-related equipment, Intelligent machinery, including compact industrial robots and Electric wheelchairs and wheelchair electric drive units, Yamaha parts and accessories, apparel, cycle helmets and motor oil.

Topic of the Projects	**Varahi Underground Electric Power Plant**
Name of the Department	**Dept. of EE& Engg, 5th Semester Students**
Date & Place	11th to 12th Oct 2019, Hosangadi

➢ Industrial Visit and Interaction to Varahi Hydel Power Plant on 11th to 12th Oct 2019. The main objective of the Industrial Visit to provide students an insight regarding practical working of companies. Theoretical knowledge as good it is, is not enough for making a good professional career. With an aim to go beyond academics, industrial visit provides a practical perspective on the world of work. It provides students with an opportunity to learn practically through interaction, working methods and employment practices. It gives them exposure to current work practices as opposed to possibly theoretical knowledge being taught at college. Industrial visits provide an excellent opportunity to interact with industries and know more about industrial environment. Initially conceived as a surface power house at the blueprint stage, Varahi was later converted into an underground Powerhouse. The decision for the change-over was based on three key parameters:

technical, economical and our concern for environment protection. Stage I of the Varahi Hydro Electric Project has a total installed capacity of 230 MW contributing 1100 MU annually. Often underground power stations form part of pumped storage hydroelectricity schemes, whose basic function is to level load: they use cheap or surplus off-peak power to pump water from a lower lake to an upper lake, then, during peak periods (when electricity prices are often high), the power station generates power from the water held in the upper lake.

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Topic of the Projects	**BEML Industrial visit**
Name of the Department	**Dept. of Computer Science Engineering**
Date & Place	26th Oct, 2019, Mysore

➢ As a part of Industrial visit, the department of computer science and engineering, PES College of Engineering, Mandya had organized an industrial visit to BEML, Mysore Campus for 135 pre-final year CS&E students accompanied by three faculties of the department on 26th October 2019.

The visit started in the early hours of a working day by the bus. The group was received by BEML. They took us to their conference hall and explained about their company, its working, which made all the students curious. It was very insightful for the students and then we split into three teams so that it will be better if mentor student ratio is fair which helps in better understandability and involvement. BEML Limited (formerly Bharat Earth Movers Limited) was established in May 1964 as a Public Sector Undertaking for manufacture of Rail Coaches & Spare Parts and Mining Equipment at its Bangalore Complex. The Company has partially disinvested and presently Government of India owns 54 percent of total equity and rest 46 percent is held by Public, Financial Institutions, Foreign Institutional Investors, Banks and Employees**.** The company has 9 manufacturing units spread over the following locations:

a) Kolar Gold Fields (KGF) Complex (around 100 Km from Bangalore) Earthmoving Division, Rail Coach Unit II, Heavy Fabrication Unit and Hydraulic & Power line Division .b) Mysore Complex Truck Division and Engine Division and c) 3. Bangalore Complex - Rail & Metro Division, Palakkad Complex and Vignyan Industries, a subsidiary located at Tarikere Steel Castings.

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➢ As a part of Industrial visit, the department of computer science and engineering, PESCE, Mandya had organized an industrial visit to Honeywell, Bangalore Campus for 24 pre-final year CS&E students accompanied by two faculties of the department on 21st Nov- 2019. The visit started in the early hours of a working day by the bus. The group was received by Mrs. Meena Prasad who took our introduction and explained us the purpose of industrial visit to Honeywell and she educated us about the

Topic of the Projects	**Objectives of Industrial visit**
Name of the Department	**Dept. of Computer Science & Engg Final Year students**
Date & Place	21st Nov 2019, Honeywell, Bangalore

company and safety measures that have to be taken by us during the visit, which made all the students curious. And then Mr. Parag Rao took over the session and he gave a very brief introduction about the company, its departments and about its products. It was very insightful for the students and then we split into two teams so that it will be better to visit their labs and if mentor student ratio is fair which helps in better understandability and involvement, Sasidharan and Anu guided us throughout the visit.

Topic of the Projects	**Indian Institute of Gurucharan & KIOCL**
Name of the Department	**Dept. of I&P Engg 5th Semester students**
Date & Place	24th to 25th Oct 2019, Mangalore

➢ P.E.S College of Engineering had organized an Industrial visit on 24th to 25th October 2019 to "Gurucharan Industries" and "Kiocl" located in Industrial Sector from Mangalore for the students of B.E (Industrial and Production Department). Spread over a large area, our infrastructure is segregated into different departments such as manufacturing unit, designing unit, quality testing unit and R&D unit. Their production unit is fully furnished with all the requisite machines and equipment that help us in fulfilling the bulk requirements of the clients. The machines installed in our unit are very well maintained to ensure smooth production process of fabricating Single Screw Extrusion Plants. Some of the machines installed at our unit are mentioned below:

a) Lathe machine, b) Power presses machine, c) Heavy Duty Cranes, d) Special purpose machine, e) Welding machine, f) Cutting machine and g) Shaping machine

In-depth knowledge of our experts about these machines enables them to fabricate products in accordance with international quality standards. Owing to the state-of-the-art in-house designing unit, we have been able to meet prevailing and ever increasing demand of domestic as well as international clients. In addition, we have also established other Units in Mangalore that provide localized support and distribution of raw materials and finished products.

OBJECTIVES:

- To experience and understand real life situation in an industrial organization and related environment and accelerating the learning process of how knowledge could be used in realistic way.
- To help students get accustomed to an organizational structure, business operation and administrative functions.
- To gain the knowledge of selecting the optimal solution in handling the situation and to learn the accepted safety practices in the industry.

The essence of the university education lies in the synergic relationship between the student and his department. An industrial visit at KIOCL will be the most logical extension of our academic pursuits and will be very helpful in achieving our objectives.

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➢ Department of Civil Engg. had conducted an industrial visit to Hosangadi Udupi District.We visited Hydroelectric Power Plant, road construction site and then to a Soil Nailing Site. The functions of each of these layers are given below:

Topic of the Projects	**Varahi Undergroud Hydroelectric Power House**
Name of the Department	**Dept. of Civil Engg Final year students**
Date & Place	24th to 27th Oct 2019, Varahi Power Station

a) Surface Course: This is the topmost layer; its *function is to provide a smooth, strong, abrasion-resistant and reasonably impervious course*. Since it is directly in contact with the vehicle tyres, it has to resist the imposed wheel loads and transmit them safely to the layer below. The material may be granular, bituminous or cement concrete depending upon the nature of the construction.

b). Base Course: This is immediately below the surface course and *its function is to distribute the stresses transmitted through the surface course evenly onto the layers below*. Invariably, it consists of granular or bituminous material, and acts as a structural part of the pavement.

c). Sub-Base Course: This comes just below the base course and provides additional help to the courses above it in distributing the loads. It also *helps in preventing soil grains of the subgrade from intruding into the base course above, and counteracts frost action*, if any. It may consist of stabilised soil or soil aggregate mixes, which facilitate drainage of free water from the pavement.

d). Subgrade: It is *the compacted natural soil immediately below the pavement layers*; this act as a foundation for the highway. The top surface of the subgrade is called the formation level.

Depending upon the alignment and the nature of the terrain, a roadway may be constructed over an embankment or a cutting, or at or nearly at the natural ground level. The formation of level, therefore, has to be properly decided to suit these conditions.

Soil Nailing:- Soil nailing technique used to reinforce soil to make it more stable. Added to that, it is used for slopes, excavations, retaining walls etc. to make it more stable.

5. Teaching Faculty Participation & Paper Presentation in Conference (within India)

➢ Second international conference on Recent Innovative Trends in Computer Science and Applications ICRITCSA-2019 held on 25th -26th October 2019 at Ramaiah Institute of Technology, Bengaluru organized by department of computer science and engineering, Information science and engineering and Master of computer applications and presented the paper entitled "Fusion Techniques for the Breast Cancer detection".

I learned lot by presenting my paper; i got the input from both internal and external professors. I learned how to carry my further work, what are the changes i

Topic of the Paper	**Recent Innovative Trends in Computer Science and Applications ICRITCSA-2019**
Type of Conference	International Conference
Faculty/Staff	• Veena M Dept. of CS&E
Date & Place	25th to 26th Oct 2019, Ramaiah Institute of Technology, Bengaluru

can incorporate in my work. It gives the platform to present, discuss ideas and share our views to solve the real world complex challenges in computer science and applications and also to incorporate our ideas in teaching and in research. In implementation my work i came to know that how i can improve my results from both internal and external jury members. It was very innovative, as a learned lot of things in various research areas.

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Topic of the Paper	**Recent Innovative Trends in Computer Science and Applications (ICRITCSA 2019)**
Type of Conference	International Conference
Faculty/Staff	• Prabhakar T S Dept. of IS&E
Date & Place	25th to 26th Oct 2019, MSRIT Bangalore

➢ International Conference on Recent Innovative Trends in Computer Science and Applications (ICRITCSA 2019) aims to provide an opportunity for academicians, researchers, scientists and industry experts engaged in teaching, research and development, gives a platform to present, discuss ideas and share their views to solve the real world complex challenges in computer science and applications. The papers describing original work are invited in any of the areas. Outcomes of attending the International Conference Attending conferences,

especially the international ones, gives me the chance to listen to different points of view and learn new ideas and trends in our field. They also provide me with new techniques, new types of equipment, data that is yet to be published, and investigators that I may not have heard of attending conferences allows me to learn new information and tactics from hearing others' presentations, I also can converse with other researchers from different universities (JNTU, Hyderabad) and even countries I may have only heard or read about. Presenting our research in a conference helps me in different ways.

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➢ International Conference on Ultrasonics and Materials Science for Advanced Technology, (ICUMSAT- 2019) was the 23rd conference in the field of Ultrasonics in India. ICUMSAT-2019 was organized by the Department of Physics, Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical Sciences for Study and Research, V.B.S. Purvanchal University, Jaunpur - 222003, U.P, India. From 16th to 18th Nov 2019.

The objective of the conference was to provide a platform to the researchers in the field of Ultrasonics, Materials Scientists, Entrepreneurs, and Young Budding Scientists for mutual exchange of views, knowledge and planning for the future development in

Topic of the Paper	**Ultrasonics and Materials Science for Advanced Technology, (ICUMSAT- 2019)**
Type of Conference	International Conference
Faculty/Staff	• Gurupavan H R Dept. of Mechanical
Date & Place	16th to 18 Nov 2019, V.B.S. Purvanchal University, Jaunpur

the various area of Science and Technology. In addition, a research strategy was formulated which would help to fulfil the country's current materials needs. Ultrasonic Non-destructive Testing (NDT) is a useful technique that can be applied to a range of materials for the characterization of their microstructures, the appraisal of defects and determination of physical properties such as density, thermal conductivity and electrical resistivity. Advanced materials are very important for many novel technological developments that touch our lives. Now-a-days materials scientists are trying to find new generation of materials with quantifiably exact/desired properties such as nano-materials or intelligent materials. Some relevant examples are: electronic materials for communication technology, bio materials for better health care, energy materials for renewable energy and environment, different light alloys for better transportations, aeronautical applications. The conference included the most relevant topics for the present day technology which is more essential for industrial growth.

Topic of the Paper	**Performance Monitoring of Electrode Wear and Surface Roughness in WEDM of Al-410%Si3N4 using Machine vision System**
Type of Conference	International Conference
Faculty/Staff	• Dr. H V Ravindra Dept. of Mechanical Engg
Date & Place	8 to 14 Nov 2019, Aslt lake City, Utah, USA

➢ Report on International Conference: ASME-2019, on 8 to 14 Nov 2019, Aslt lake City, Utah, USA. The International Mechanical Engineering Congress and Exposition (IMECE) is ASME's largest research and development conference focused primarily on mechanical engineering, but encompasses perspectives from many engineering disciplines. IMECE is the place for us to present our technical research and expertise, while also learning from and connecting with thousands of our peer researchers on a global level.

At IMECE we will experience stimulating innovation from basic discovery to translational application of new approaches and foster collaborations that engage stakeholders and partners not only from academia, but also from national laboratories, industry and government funding bodies. No other conference will provide you with more broad, but salient perspectives and knowledge-sharing on technical advances within mechanical engineering, than IMECE.

The conference included the most relevant topics for the present day technology which is more essential for industrial growth. The important topics covered in this conference included: a) Acoustics, Vibration, and Phononics, b) Advanced Manufacturing, c) Advanced Materials: Design, Processing, Characterization and Applications, d) Advances in Aerospace Technology, e) Biomedical and Biotechnology, f) Design, Systems and Complexity, g) Dynamics, Vibration, and Control and Energy, h) Engineering Education, i) Fluids Engineering and j) Heat Transfer and Thermal Engineering.

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Topic of the Paper	**Study of Epoxidized and Benzoic Acid Additive Added pongamia Bio-Lubricant**
Type of Conference	International Conference
Faculty/Staff	• Dr. T Nagaraju Dept. of Mechanical Engg
Date & Place	1st to 4th Dec 2019, JN Tata Auditorium, IISc, Bangalore

➢ The numbers of presentations included in the various topics of India Trib-2019 conference, the variety of perspectives and the richness of the discussions have embraced all aspect of concern including recent research on lubricants and additives, bearing and gear tribology, surface treatment and coatings and bio-tribology with attention to the environmental impact. The papers presented in the track of Lubricants and additives provided some new developments in the area of environmentally friendly lubricants. The presentation of my research paper in the track of Lubricants and additives has provided me an opportunity to interact with the participants from different academic institution and industries. The critical queries and suggestions raised from the participants during the presentation helps to correct my knowledge in future research activities in the institution.

The papers presented by various researchers in the tracks of Lubricants and additives have highlighted about the new developments in the synthesis and development of environmentally friendly lubricants and their chemistry and Rheology and development and application of bio-lubricants and additives. The papers presented in the track of Bearing and Gear Tribology provided some new developments in the area of analysis and design of fluid-film bearings, rolling bearings, etc. My participation in the above three tracks gave me an opportunity to interact with experts and update my knowledge to extend my research activity into new areas of green tribology that related to environment friendly lubricants. The technical exhibition of the conference has provided me a useful knowledge about new test equipment's available for the experimental investigation of tribological characteristics of many components.

Topic of the Paper	**Tribology for Society**
Type of Conference	International Conference
Faculty/Staff	• Mohammedrafi H Kerur Dept. of Mechanical Engg
Date & Place	1st to 4th Dec 2019, IISc Bangalore

➢ International Conference on Industrial Tribology (IndiaTrib-2019) has been organized by Department of Mechanical Engineering IISc, Bangalore. Under the aegis of Tribology Society of India. The conference was focused on the theme "Tribology for Society". The IndiaTrib-2019 was also sponsored by Indian Oil, MAX Lubricants, TATA Steel, Lubrizol, Magnum Engineers, Balmerol lubricants, BRNS, CSIR-India, DRDO and ISRO. It has been conducted from 1st 4th Dec 2019 at J N Tata auditorium, IISc, Bangalore, India. The IndiaTrib-2019 has brings together the resent knowledge, tools and techniques of tribology domain in which researchers and practitioners using for the industrial growth through reduction of losses due to wear and friction. The conference has also arranged six plenary sessions by the eminent personalities. Notably among these, plenary sessions by Nicholas Spencer, ETH Zurich on "Brushes on Gels: Cartilage, Contacts and Catheters", Dr. Jianbin Luo, Tshingua University, China on "The New Advances of Super Lubricity" and by Prof. Mark Robbins, Johns Hopkins University, USA on "Contact and Friction across Scales: How Elasticity determines the real contact area and destroys structural lubricity" attracted the attention of participants. The conference included the most relevant topics for the present day technology which is more essential for society. The important topics covered in this conference included: a) Surface Treatment and Lubricants and Additives, b) Tribology in Design & Manufacturing and Surface Treatment, c) Industrial Tribology and Friction and Wear and d) Lubricants & Additives and Bearing & Gear Tribology.

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➢ Prof Veena M Attended the conference 3rd International conference on Data Engineering and Communication System" jointly organized by Computer science and Engineering Information science and Engineering at RNS institute of technology Bengaluru on 19-20 December 2019.Data engineering and communication system deals with the use of techniques, methodologies in the design development and assessment of information system for different computing platform and

Topic of the Paper	**Data Engineering and Communication System**
Type of Conference	International Conference
Faculty/Staff	• Veena M Dept. of CS & Engg
Date & Place	21 Dec 2019, RNSIT Bangalore

application environment. This conference is a premier forum for researchers and practitioners interested in Digital Image processing, Biomedical image processing data warehousing, Data mining, NLP, Machine learning and advances in data engineering. It is the opportunity to present and observe latest research trends and ideas in these areas. The objective of the research is to share the research ideas and solution approaches for the problems of today's information and communication system. Also they conducted Doctor Conclave where I presented my paper and I got the feedback from session chairs and my research colleges. The session chairs advised me to how to improve my further work and to implement that in my research work. I can also incorporate in my regular teaching.

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Topic of the Paper	**Communication, Computer Technologies and Optimization Techniques (ICEECCOT-2019)**
Type of Conference	International Conference
Faculty/Staff	• B N Harish Dept. of EE & Engg
Date & Place	13th to 14th Dec 2019, GSSSIETW, Mysore

➢ Prof B N Harish attended 4th International Conference on Electrical, Electronics, Communication, Computer Technologies and Optimization Techniques (ICEECCOT-2019), 13-14 December 2019. The periodic connection and disconnection into the power system by the EVs creates a current and voltage harmonics into the power system, it is noticeable that 3rd and 9th harmonics are evident in the voltage distortion. Impact Due to Type of Charger Used: Generally the Charger used for electric vehicles are traditional charger that are one way charger, i.e. charging from grid to vehicle. Smart chargers are implemented to reduce burden on grid during peak load condition, smart chargers are bidirectional here power flows from grid to vehicle and vehicle to grid. Impacts of Nonlinearity in Load: The charging process on the electric vehicle is the combination of Switched Mode Power Supplies (SMPS) and inverter combination with a rectifier at the grid side to charge the battery which has a DC-DC converter as its main conversion mechanism. This non linearity introduces harmonics to the grid which needs attention as this would affect the THD in the grid. Mitigation The mitigation can be carried out by the use of both shunt and series active filters and hybrid active filters. Even Distributed FACTS devices can be introduced in the lines connected densely with the EVs. The control techniques like direct and quadrature (d-q) and real and reactive power (PQ) methods can be incorporated in the distribution system in order to avoid the power quality issue that gets dynamically introduced into the power system due to introduction of large numbers of EVs in the load. Using active hybrid filters both voltage deviation and total harmonic distortion can be minimized.

Topic of the Paper	**International Conference on Recent trends in Electrical, Electronics and computer science Engg, ICEECS – 2020**
Type of Conference	International Conference
Faculty/Staff	• Dr. Rudresh Addamani Dept. of ME & Engg
Date & Place	10th to 11th Jan, 2020, VBS Purvanchal University, Jaunpur

➢ Dr Rudresh Addamani attended international conference on "International Conference on Recent trends in Electrical, Electronics and computer science Engineering, ICEECS – 2020, at Uma Nath Singh Institute of Engineering & Technology, V B S Purvanchal University, Jaunpur – 222003, up, India on 10th and 11th January 2020

to present my research paper titled "Evaluation of Weld Bead Mechanical Properties Using Image Processing during Destructive Testing by Multivision Technique". As it is part of research activity to full fill requirements of PhD.

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➢ Dr Rudresh Addamani attended international conference on "Global Conference on Advanced Smart and Sustainable technology in Engineering" GCASSTE–2020 from January 30-31, 2020 at Mangalore Institute of Technology Campus, Moodabidri, Mangalore, India to present my research paper titled "Estimation and Comparison of welding Performances in Pulsed Gas Metal Arc Welding (P-GMAW) using MRA and GMDH for SS 304 material". As it is part of research activity to full fill requirements of PhD and also for the up gradation of the knowledge. Attending such conferences helps to full fill the requirements higher promotions and yearly appraisal.

Topic of the Paper	**Global Conference on Advanced Smart and Sustainable technology in Engg. GCASSTE–2020**
Type of Conference	International Conference
Faculty/Staff	• Dr. Rudresh Addamani Dept. of ME & Engg
Date & Place	30th to 31st Jan 2020, MIT Moodabidri, Mangalore

Summary of Literature:

• Most of the literature survey is carried to understand the input parameters for the modal, transient and harmonic analysis of delamination in a drilled hole using ANSYS 15.0, and The study revealed the preparation of composite using stir casting with controlled condition

• The study revealed effect of various parameters like speed of cutting, feed rate, thrust & torque on the key accuracy characteristics of drilled holes like cylindricity, circularity, and surface roughness.

• The study revealed creating FE based model, the FE-mesh, the time discretisation and FE based simulation in ANSYS 13.0.

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➢ The 2nd - International Conference on "Advanced Mechanical Engineering Sciences (ICAMES-2020)" held in PES College of Engineering, Mandya, on 28th to 29th February 2020. Institute for engineering research and publication (IFERP) and in association with Binghamton University, state university of New York offers all participants an opportunity for understanding the recent trends in research and applications of mechanical engineering science related variety of topics. Knowledge transfer was taken place from the highly proficient researchers from Binghamton University, IIT Madras and

Topic of the Paper	**Advanced Mechanical Engineering Sciences (ICAMES-2020)**
Type of Conference	International Conference
Faculty/Staff	• Doddaswamy V • Sachin N K Dept. of Mech & IP Engg
Date & Place	28th to 29th Feb 2020

IIT Ropar. The range of topics in material characteristic field, the depth of the presentations, the variety of perspectives, and the richness of the international discussions are going to be truly beneficial to me as an individual. The researcher from various sectors of the mechanical metallurgists in the conference provides a good platform to know the various manufacturing techniques used to synthesize Composites and mechanical characterization of composites, ASTM testing methods followed to evaluate the properties of the Composites which can be used in different sectors. Further, the knowledge obtained in the conference discussion will surely be advantageous to our institution and to my department in guiding research projects. The knowledge gained by interaction will also help in leading research activities more effectively.

6.Student's activities

Details of Academic Activity	**Noise & Vibration Analysis Methods**
Type of Academic Activity	Workshop
Students Name	• Sayeed Ahamed K I • P Raghava Madhyastha • Kiran Kumar N R UG & PG students in Dept. of Mechanical Engg.
Date & Place	20th to 24th Oct 2019, CMTI, Bangalore

➢ P.E.S College of Engineering, Mandya team attended the annual technical festival of IIT Bombay 'Techfest', international competition called International Robotics Challenge (IRC).

For the competition, we were required to build two robots, a manual and autonomous bot that would coordinate with each other to tackle various challenges set forth during the competition. The autonomous bot had to solve a maze without any form of external help from the participants. It had to even identify the positions of different colored blocks and scan a QR code. The manual bot had to be designed to move using a remote controller and to pick and place blocks. Its main objective was to clear the way for the autonomous bot by transferring the blocks detected by the autonomous bot in the maze to specified zones outside the maze. It had to also tackle obstacles and fire a projectile at a target. Each team was allotted with a time limit of 8 minutes to complete all the tasks and a time limit of 5 minutes for a pre-run of the autonomous bot for it to learn the maze. We also got the opportunity to attend a tech exhibition and talks that were conducted during the fest. Side note: Clicking pictures during the event was not allowed. This was done to prevent teams from getting a picture of the maze that had to be kept confidential for the proper functioning of the competition. However, we were granted permission to click a picture of the arena after the event was over.

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➢ The workshop conducted by the association ISNEE (Indian Society for New Era Engineers) under the Event "GKDC (Go-Kart Design Challenge)" on the 19th and 20th of October 2019 at Thiagarajar College of Engineering, Madurai, Tamil Nadu. Who had hosted this workshop? The event was mainly focused towards the benefit of the student teams participating in the National Level GKDC competition which is to be held at KARI Speedway, Coimbatore from 10th to 14th February 2020. 19 Members from Team IGNITE attended the workshop which consisted of 8 students from 2nd year and the rest from the pre-final year.

Details of Academic Activity	**National level GoKart Design Challenge (GKDC)**
Type of Academic Activity	Workshop
Students Name	• Jagadish Kumar M R • Pradhyumna U.R • Thejorashmi H S & Team Members Dept. of Automobilel Engg.
Date & Place	19th to 20th Oct 2019, KARI Speedway, Coimbatore.

In the first day of the workshop, the resource person briefed us about the importance of the non-technical aspect of the competition like the "Business Reports" and entrepreneurial opportunities provided by the competition. The students who mainly focused on the technical aspect of the competition, now showed interest towards the business aspect of the project. The rest of the day was utilized to explain the details and working of competition rules wherein the rulebook of the event was elaborated and explained. The day two of the workshop mainly focused toward the technical aspect of the event. This included the designing of chassis, calculation of track width, weight distribution, brake force calculations etc. Since the day two of the workshop was mainly focused towards technical

aspects, the students showed keen interest towards the information provided by the resource person. Even though the whole day was spent guiding us about the technical aspects, none of students were tired because the concepts that was being thought was interesting and relatable to the subjects the students were studying.

This was the main highlight of the workshop that the students were now actually interested in the concepts because they could now relate to the chapters and concepts thought by their teachers and how to implement and utilize that knowledge for the practical skill development and hence finally helping us in fabrication of the Go-Kart project.

Details of Academic Activity	**Go-Kart Design Challenge (GKDC)**
Type of Academic Activity	Workshop
Students Name	• Ramesha K M • Shri Hari Shashanka • Sohan Varghese V • Sooban Aathif • Sujan K • Sumanth Devang B • M Yunus Sheikh Dept. of Mechanical Engg.
Date & Place	19th to 20th Oct 2019, KARI Speedway, Coimbatore.

➢ Two days' workshop on Go-Kart Design Challenge (GKDC) at 19th to 20th Oct 2019, Thiagarajar College of Engg. Madurai, Tamilnadu.

To promote and enhance the build of go kart through education and training; to promote knowledge of and compliance with regulations.

Automobile engineering is evolving by the day, with changing technologies and the demand for skills aligned with industry standards. So hands-on skills in manufacturing and automobile design is useful. Automobile and IC Engine Mechanics Workshop mainly focuses from Basics to Advanced concepts in Automobile Engineering. It covers chassis design, Steering System, Braking unit, Transmission, Fuel Supply System, IC Engine and Advanced Technologies were the key points focused at this workshop. This was organized by ISNEE (Indian Society of New Era Engineers) at the Thiagrajar College of Engineering, Madurai. The duration of this workshop was two consecutive days i.e. 19th and 20th of October, with eight hours session each day in a total of sixteen hours, properly divided into theory sessions. Where we were explained with the rule book of the competition and the change of certain amount of rules that were made. At the end of this workshop, each participant has got the Certificate of Participation. Importance of Attending the Workshop This workshop was a great way for us to learn about a particular subject, learn new projects, and methods in order implement it. Attending this workshop gave us a broad idea of the technical knowledge that we can implement while fabricating our Go kart.

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GKDC National Level championship participating teams
from Departments of Automobile, Mechanical & Industrial & Production.
Engineering streams

7. Papers Published by Teaching Faculty in International Conferences & Journals

Sl. No	Name of the faculty	Journal Name	ISSN No	Title of the Paper	Year of Publication
1	Dr. S Ghanaraja	Applied Mechanics and Materials © 2019 trans tech Publications Ltd. Switzerland	1662-7482	Synthesis and Mechanical Property Evaluation of Hot Forged Aluminium Alloy Reinforced with Nano Alumina	Vol. 895, pp.90-95, Nov 2019
2	Dr. H V Ravindra	Measurement		Optimization of machining parameters in turning Nimonic-75 using machine vision and acoustic emission signals by Taguchi technique	Vol. 144, October 2019, pp. 144-154.
3	N Jagadeesh	International Research Journal of Engineering and Technology (IRJET)	2395-0072	CFD bassed study and optimization of manifold system	Vol. 5, Issue.9, pp.1076-1078, Sept.2018
4	Dr. S Gopiya Naik	International Journal for Scientific Research and Development	2321-0613	An Improved design of smart alarm system for hearing impaired people using arduino	Vol. 7, issue.1 pp.413-415, March 2019
5		International Journal of Advanced Research	2320-5407	Design and Implementation of Feedback Control system for 6-DOF Stewart Platform	Vol. 7,No10, pp. 28-40, Oct-2019
6		American Journal of Remote Sensing	2328-5788	Morphometric Analysis of Karadya Micro Watershed: A Case Study of Mandya District	Vol. 6, No.1, pp.15-22, 2018
7	Ningaraju H J	International Research of Journal of Engineering and Technology (IRJET)	2395-0056	Assessment of Sedimentation in Krishanaraja Sagar Reservoir of Karnataka, India using remote sensing technique	Vol.6, issue.09, pp.1290-1293, Sep.2019
8	Raghavendra Babu T M	International Research Journal of Engineering and Technology (IRJET)	2395-0056	A Bar Code Based Library Control Authentication	Vol. 06, Issue. 09, pp.1450-1453, Sep.2019
9				Chronic Kidney Disease on Naïve Bayes Technique	Vol. 06, Issue. 09, pp.1653-1659, Sep.2019
10	Rudresh Addamani	International Journal of Scientific Research and Review	2279-543X	Optimization of P-GMAW welding parameters using Taguchi technique for SS 316L material	Vol.7, Issue no. 05, pp.130-137, May-2019
11	Raghavendra Babu T M	International Journal of Innovative Science, Engineering and Technology (IJISET)	2348-7968	Information Mining Using Genetic Algorithm and Bigdata Analytic Methodology	Vol. 6, Issue no. 12, Dec. 2019
12	Dr. T S Shashikumar	Radiation Protection Dosimetry (Oxford Journal)	1742-3406	Studies on Gamma Dose rates in Indoor and outdoor environment of Hassan City, Karnataka	Jan 2020, pp.1-6
13	Dr. Gopiya Naik S	International Journal of Scientific and research Publication (IJSRP)	2250-3153	Automatic Strategy to Control entire Villagers Water Valves with user level authentication	Vol. 9, Issue.12, Dec. 2019, pp.194-199
14		International Journal of Engg research & Technology (IJERT)	2278-0181	OTP based Lineman Security System	Vol. 9, Issue.12, Feb 2020, pp.456-460
15	S. Jyothi	International Journal of Engineering research & Application	2248-9622	Data Management of Milk Dairy using Cloud Applications	Vol.9, Issue. 5, pp.85-90, May. 2019
16			2248-9622	Smart Garbage Monitoring System Using Internet of Things	Vol.9, Issue. 5, pp.47-51, May. 2019

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8.Publication of Research Papers (SCOPUS)

Sl. No.	Name of author	Title of paper	Type	Dept.	Source Name
42		Surface Roughness Measurement of WEDM Components using Machine Vision System	Emerging Research in Electronics, Computer Science and Technology. Lecture Notes in Electrical Engineering	Mech.	Vol. 545 pp. 539-547. Springer, Singapore
43	Dr. H V Ravindra	Machine Vision Assisted Performance Monitoring in Turning Inconel 718 material Using Image Processing			Vol. 545 pp. 915-925. Springer, Singapore
44		Estimation and Comparison of Electrode Wear and AE Parameters of Titanium Material in Wire Electric Discharge Machining Using ANN	Applied Mechanics and Materials		Vol. 895, pp. 144-151, 2019.
45	N Jagadeesh	Studies om Mechanical and Thermal behaviours of AI6061-SiC-Gr-ZrO2 Nanohybrid composites	Published by IOP Publishing, Materials Research Express	Auto	Vol.5, issue.11, pp.1-8, Sept. 2018
46	Revanesh M	CB-ALCA-a cluster based adaptive lightweight cryptographic algorithm for secure routing in wireless sensor networks	International Journal of Information and Computer Security (IJICS)	ECE	Vol. 11, Issue.6, pp.637-662, 2019
47	Mahesh Kumar A S	Implementation of Automatic Gate Control for Railroad switch and Anti-Collision System using Arduino	International Journal of Recent Technology and Engineering (IJRTE)		Vol. 8, issue.2S11, pp.2894-2900. Sept.2019
48	Dr. H S Sheshadri	Detection and Validation of Segmentation Techniques for MR Brain Tumor of Glioma Patients	International Journal of Innovative Technology Engineering		Vol.8, Issue.11, pp.373-378, Sept. 2019
49	Dr. Prashanth P A	SrTio3:Dy3+nanophosper: synthesis, charecterisation and photoluminescence properties	IOP Publishing	Chemistry	Vol.6, No.12, pp.1-12, 2019
50	Dr. S Gopiya Naik	Optimal Sizing and Siting of DG in Electrical Networks based on Systematic Method	International Journal of Recent Technology and Engineering	E&E	(ISSN no.2277-3878) Vol.8, No.2, pp.2674-2683, Sept.2019
51	Dr. Mahesh Gowda	Efficiency of Buck DC-DC Switching power Converter in CCM and SDCM of Operation	International Journal on Emerging Technologies (IJET)	ECE	(ISSN no. 0975-8364), Vol. 10, No. 4, pp.354-358, Dec-2019
52	Girish Babu M C	A Efficient Solution for Classification of Crops Using Hyper Spectral Satellite Images	International Journal of Innovative Technology and Exploring Engineering	CSE	(ISSN no.2278-3075) Vol.9, No.2, pp.4005-4011, Dec.2019

Sl. No.	Name of author	Title of paper	Type	Dept.	Source Name
			(IJITEE)		
53	H R Divakar	An Ontology Driven System to Predict with Machine Learning Techniques	International Journal of Innovative Technology and Exploring Engineering (IJITEE)	CSE	(ISSN no.2278-3075) Vol.9, No.2, pp.4005-4011, Dec.2019
54	H R Divakar	Modeling and Simulation of Graphene field effect transistor (GFET)	International Journal of Electrical and Computer Engineering Scopus indexed Journal SJR & Cite Score Q2	ECE	Vol. 9, No.6, pp.4826-4835, Dec 2019
55		Estimation and comparison of welding responses using MRA, GMDH and ANN technique of Al6061 and Al7075 material in FSW	ASME International Mechanical Engg Congress and Exposition, Proceedings (IMECE): 2019	ME	IMECE-2019: pp. 1-6, Nov 11 to 14 2019
56	Dr. H V Ravindra	Investigation on the effect of drilling parameters on quality of hole in Epoxy resin with and without carbon fiber reinforced with 6% and 10% Si3N4 using FEA			IMECE-2019: pp. 1-8, Nov 08 to 14 2019
57		Weld bead performance assessment of P-GMAW using acoustic emission (AE) signals through NDT methods for MS ASTM a 106 B grade material			IMECE-2019: pp. 1-7, Nov 08 to 14 2019
58		Estimation and Comparison of Welding Performances in P-GMAW using MRA and ANN for SS 304L Material	IOP Conference Series: Materials Science and Engineering: 2018		IConMMEE- pp. 1-7, Nov 08 to 14 2018
59	Nanda B S	Physical Modeling of Graphene Nanoribbon FET-Quantum Mechanics	International Journal of innovative Technology and exploring Engineering - Scopus indexed Journal	ECE	Vol.9, Issue.3, Jan-2020, pp.3230-3235
60	Dr. H S Sheshadri	Evaluation of hybrid segmentation technique for pre-operative brain MR images	Scopus Indexed: International Journal of Scientific and Technology Research (IJSTR)	ECE	ISSN No. 2277-8616, Vol.9, Issue.2, Feb-2020, pp.6148-6155

9.   Ph.D Awardees

P.E.S. Research center Encourages Faculty Members Pertaining to different disciplines to take up research work under the able guidance of Professors Registered as guides under VTU Belagavi and other Universities. Our research center has ample number of research supervisors who could cater to the need of the research center. Faculty members from various disciplines pursued research under P.E.S. research center and been awarded Ph.D. degree for Basic Sciences & Engineering disciplines.

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OPTIMIZATION OF PROCESS PARAMETERS AND MONITORING THE STATUS AND BREAKAGE OF WELD USING MULTISENSORY APPROACHES FOR PULSED GAS METAL ARC WELDING (P-GMAW)

Dr. Rudreshi Addamani
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Dept of Mech Engg
PESCE Mandya-571401

Dr. H V Ravindra
Principal
PESCE,
Mandya-571401

Registration for PhD on Nov 2013
University /Branch: VTU, Automobile Engg.
Award of P.hD Degree: 22nd Nov2019

Abstract: Welding is a fabrication or sculptural process that seams materials, usually metals or thermoplastics by producing coalescence. This is often done by melting the work pieces and adding a filler material to form a pool of molten material (the weld pool) that cools to become a strong joint, with pressure sometimes used in conjunction with heat, or by itself, to produce the weld. Pulsed Gas Metal Arc Welding (P-GMAW) is broadly used process in industries. It offers an enhancement in quality and productivity over regular Gas Metal Arc Welding (GMAW). The process allows stable spray transfer with low mean current and low net heat input. It applies waveform control logic to produce a very accurate control of the arc through a broad wire feed speed range. Welding trails have been performed on MS ASTM A106, SS 304 and SS 316L materials using copper coated filler material. These materials were widely used in pressure vessels, aircraft industries, automotive industries, chemical processing and petrochemical industries. Stainless steels have good antioxidant properties, corrosion resistant and high tensile properties. During welding process and destructive testing, various signals were recorded. At the time of welding and solidification, Acoustic Emission (AE) signals were recorded viz., AE_{RMS} and AE_{ENERGY}. At the time of destructive testing again AE_{RMS} and AE_{ENERGY} are considered along with Machine Vision signals (MV) viz., area and height to ascertain the capability of these AE signals to rate the performance status. Direct response parameters like Ultimate Tensile Strength (UTS), Yield Strength (YS) and % of elongation were recorded during destructive testing.

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SYNTHESIS OF ALUMINIUM BASED COMPOSITES AND EFFECT OF VARIOUS SIZES OF TiO2 NANO-PARTICLES ON MECHANICAL AND TRIBOLOGICAL PROPERTIES

Dr. Raghu S
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I&P Engg. Dept.,
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Dr. H M Nanjundaswamy
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Registration for PhD on Nov 2012
University /Branch: VTU, Automobile Engg.
Award of P.hD Degree: 10th Dec 2019

Abstract: The research work involves evaluating the effect of various sized TiO2 nanoparticles with LM0 Al alloy with the weight percent of 0, 4, 8 and 12. These composites have been fabricated by stir casting processing involving addition of nano TiO_2 particles in molten aluminium and in order to improve the wettability 5 wt. % of magnesium is added to the nano particulate composites. The Microstructure, X-Ray Diffraction Analysis, Energy Dispersive X-Ray Spectroscopy, Mechanical Properties and Tribological Behavior of various sized nano TiO_2 particulate composites have been investigated and compared with 200nm TiO_2 particulate composites.

Comparative Study of Machining Performances in WEDM of Composite Materials using Machine Vision System

Dr.Gurupavan H R
Assistant Professor
Dept. of Mech. Engg.,
PESCE, Mandya

Registration for PhD on Dec 2014
University /Branch: VTU, Automobile Engg.
Award of P.hD Degree: 21st Dec 2019

Dr. H. V. Ravindra
Principal
PESCE, Mandya

Abstract: Metal Matrix Composite (MMC) materials are widely used in manufacturing industries. Due to the existence of abrasive reinforcing particles, conventional machining of these materials creates severe tool wear and thus decreases the tool life. Wire Electrical Discharge Machine (WEDM) which is non-conventional technique, was used to overcome the difficulty. The study was concerned with machining of Al-6061 alloy and Al with various weight percentage of Si3N4 viz., 6%, 8%, 10% material. All four work materials were processed by stir casting technique. The machine used to conduct the experiment was CONCORD DK7720C four axes CNC WED machine. In this research work, a machine vision system has been implemented on Wire EDM machine to measure wire electrode status of wire and surface roughness of the workpiece. The results obtained in each case shows that the procedure explained in this work is able to correlates wire electrode status with surface roughness by machine vision system. The present work clearly indicates that the Machine vision approach can be used to measure the surface roughness and wire wear in WEDM.

The relation between the performance parameters and machining parameters was mathematically modelled by ANN. Finally, graph of estimated vision parameter of electrode wear and surface roughness has been plotted against the machining time to know how the wire electrode wear causes a change in surface roughness as machining time elapses. For real time surface texture condition monitoring with non-contact techniques, the image processing algorithms can be used for enhancing the automation proficiency in unmanned tool. The methodology described here is expected to be highly beneficial to manufacturing industries and also other areas such as aerospace, automobile and tool making industries.

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Monitoring the Machining Performance of Various Types of Work Material in WEDM using Multi-Sensory Approach

Dr. Prathik Jain S
Assistant Professor
Dayanada Sagar College of Engg. Bengaluru.

Registration for PhD on Oct 2013
University /Branch: VTU, Automobile Engg
Award of P.hD Degree: 7th Jan 2020

Dr. H V Ravindra
Principal
PESCE, Mandya

Abstract: The study was concerned on machining three different materials, viz., Titanium, P-20 tool steel and Stavax materials in Wire EDM using Molybdenum wire. The responses considered for the present study was Surface Roughness (SR), Electrode Wear (EW) and Acoustic Emission (AE) parameters. The influences of the process parameters on different responses are analyzed using Taguchi's Technique. In this study, experiments were designed as per Taguchi's L'16 Orthogonal Array (OA) where in Pulse-on time, Pulse-off time, Current and Bed-speed have been considered as the input process parameters. From the optimized values it was found that the variation of the pulse on time and current has a major effect on the SR, EW and AE signals but pulse off time and bedspeed had no significant effect on the machining characteristics (SR and EW) and machining performance (AE). Hence the effect of the pulse on time and current on the machining characteristics and machining performance was plotted in the raw data and comparison of the materials was studied. The present study also aims at determining process parametric influence and estimation of machining characteristics and machining performances, using Multiple Regression Analysis (MRA), Group Method of Data Handling Technique and Artificial Neural Network (ANN) in WEDM. Comparative study of these mathematical models was also carried out.

SOME STUDIES ON HUB THEORY AND ENERGY OF GRAPHS

Dr. Yasien Nafe Ahmad Shawawreh

Registration for PhD on Feb 2016
University /Branch: University of Mysore
Award of P.hD Degree: 13th Jan 2020

Dr B Shanmukha
Professor
Dept of Mathematics
PESCE Mandya

Abstract: In the present research work we have discussed the hub theory which is very close to the field of domination theory and define both the Laplacian hub matrix of a graph and Laplacian minimum hub energy of graph. The concept of energy is intensively studied in Chemistry; it can be used to approximate the total π-electron energy of a molecule. In this thesis we studied maximum degree eccentricity energy of a connected graph and obtained some coefficients of the characteristic polynomial and also obtained lower and also obtained lower and upper bounds on maximum eccentricity energy and introduce the concept of Laplacian average degree-eccentricity matrix of connected graph G.

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PLANNERS FOR INSTITUTIONAL ACADEMIC ACTIVITIES

Sl. No.	Faculty	Academic activities
1	Dr. K Narasimhachary	Controller of Examination
2	Dr. S L Ajit Prasad	Dean (Research)
3	Dr. Nagarathna	Dean (Academic)
4	Dr. N L Muralikrishna	Deputy Controller of Examination
5	Prof. M J Anand	Deputy Dean (Research) & Coordinator - MOOCs, ICT, NPTEL
6	Dr. D R Umesh	Deputy Dean (Academic) Nodal Officer-Procurement
7	Dr. Shivalingegowda	Coordinator - NAAC, IQAC
8	Dr. R Girish	Training & Placement Officer
9	Dr. B S Shivakumar	Dean (I I I Cell)
10	Dr. L Prasannakumar	Warden, Boys Hostel, Coordinator Bio-fuel center Environmental - Coordinator (TEQIP-III)
11	Dr. M L Anitha	Warden, Girls Hostel
12	Dr. B Shanmukha	Warden, VSVM Boys hostel
13	Prof. T M Devegowda	Dean, Students Welfare
14	Dr. Mahesh Kaluti	Coordinator - GATE Training, NIRF Academic Nodal Officer (TEQIP-III)
15	Dr. S Vinay	Coordinator - Business Incubator, ARIIA
16	Prof. M C Girish Babu	Coordinator - AICTE activities
17	Prof. S K Shivashankar	
18	Dr. Somashekhar	Coordinator - Media
19	Prof. A S Mahesh	
20	Dr. Puneeth Kumar M B	Coordinator - Website

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Late Sri. K V Shankaragowda,
Founder Chairman
PET ® Mandya

Dr. H.D.Chowdaiah,
Former President
PET®, Mandya

Sri. K S Vijay Anand,
President
PET ®, Mandya

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Sri. S L Shivaprasad,
Secretary
PET®, Mandya

Sri. Basavaiah
Vice President
PET®, Mandya

Sri. M B Sreedhara,
Vice President
PET®, Mandya

Sri.K R Dayananda,
Joint Secretary
PET®, Mandya

Sri.H P Ravishankar,
Treasurer
PET®, Mandya

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Dr. H. V. Ravindra
Principal & TEQIP Director

P.E.S. COLLEGE OF ENGINEERING
Mandya-571 401, Karnataka, India, Estd. In 1962
(An Autonomous Institution affiliated to VTU, Belagavi)
Approved by AICTE, New Delhi World Bank funded College (TEQIP - III)
Grant In-Aid Institution (Government of Karnataka),
Accredited by NBA (six Programmes) & Accredited by NAAC
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