K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

Gurugram, Delhi-NCR

School of Engineering and Technology

PRISM

April - May 2022

ABOUT SCHOOL OF ENGINEERING AND TECHNOLOGY

The School of Engineering & Technology at K.R. Mangalam University offers various undergraduate and postgraduate programs. The aim of these programs is to equip the students with knowledge, skills and provide a professional approach in the field of Engineering and Technology, to make their capable in successfully meeting the present requirements and future challenges in the Engineering Profession. SOET brings together outstanding academicians, industry professionals and experienced researchers to impart hands-on and multi-disciplinary learning experience.

SCHOOL OF ENGINEERING & TECHNOLOGY

- B.Tech - Computer Science & Engineering (CSE) with AI & ML with academic support of Samatrix and IBM
- B.Tech - Computer Science & Engineering (CSE)
- B.Sc.(Hons.) - Computer Science with Academic Support of IBM
- B.Tech - Mechanical Engineering (ME - Automotive Designs & Electrical Vehicle) with Academic Support of Siemens
- B.Tech. (Civil Engineering) with specialization in Sustainable Development & Smart Cities
- BCA with Specialization in AI & Data Science with Academic Support of Samatrix and IBM
- B.Sc.(Hons.) - Cyber Security
- B.Sc.(Hons.) - Data Science
- B.Tech - Computer and Electronics Engineering (CEE)
- B.Tech - Computer Science & Engineering with specialization in Cloud Computing in association with Xebia*
- B.Tech - Computer Science Engineering with specialization in Full Stack Development in Association with Xebia*
- Integrated B.Tech (CSE) + MBA With Academic Support of IBM and Samatrix*
- B.Tech. in (Computer Science & Engineering) (CSE) with specialization in UX/UI in association with ImaginXP

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Assistant Professor

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MOBILIZE YOUR TECHNICAL IDEAS - IDEA PRESENTATION COMPETITION

CHOOL OF ENGINEERING AND TECHNOLOGY organized Idea Presentation Competition titled as Mobilise Your Technical Ideas to To promote problem solving skills and entrepreneurial culture among students, Computer Society of India (CSI) - Student Chapter of K.R. Mangalam University organised a pan-university offline event called "Mobilise Your Technical Ideas" on Monday, 11th April 2022. The event took place in the university campus, in B222, 2nd floor, B Block. The aim of the event was to encourage students to solve real world problems using technology, and come up with innovative ideas and solutions.

In the event, students took part in teams of 2-5 members each. Each team was given a total time of 5-8 minutes in which they presented a PowerPoint Presentation that they had prepared on their idea. At the end of each presentation, judges and other participants and attendees asked the presenting team questions about their idea. A total of 10 teams, i.e. 24 students registered for the event. Judges evaluated the presentations based on the novelty of content, clarity of the problem statement being solved, demonstration of idea/prototype, and the overall presentation skills exhibited. The event was concluded with a thank you note, followed by announcement of the winning teams by the Head of Department of Computer Science, Dr. Shweta Bansal.

1st Prize was awarded to the team including Onkar Vatsa, Sagar Vashnav, Sahil, Ronak Soni of B.Tech CSE IVth semester and Tarang Balani of B.Sc (H) Computer Science IInd semester presented project on Feel like Real but not Reality, followed by the team including Milind Udbhav, Robin Kumar of B.Tech CSE VIth semester and Rohit Kumar, Nitin Kumar of B.Sc (H) Data Science IVth semester that won the 2nd prize for their project Home loan status prediction, and team Manav Dewan, Pratham, Paramjeet, Vansh and Ritik Yadav of B.Tech CSE IVth semester winning the 3rd prize.

The event was organised under the guidance of CSI faculty coordinators Dr Swati and Dr Meenu, with HoD Computer Science, Dr. Shweta Bansal was the key guest and judge for the event. Student coordinators Mohit Chahal and Abhinav Sinha of B.Tech CSE VIth semester and Rishav Jha and Sagar Vashnav of B.Tech CSE IVth semester volunteered and helped coordinate the event.

AWARENESS PROGRAM ON ROLE OF SCIENCE AND TECHNOLOGY IN NEARBY VILLAGES

SCHOOL OF ENGINEERING AND TECHNOLOGY organized an awareness program on role of science and technology in Swachh Bharat Abhiyan in nearby village at Spark Minda Foundation,NGO (Bhondsi).

Introduction: School of Engineering & Technology, organized a visit to the NGO, Spark Minda Foundation (Bhondsi) on Tuesday, 12th April 2022 in order to increase awareness about the importance of science & technology in every aspect of one's life.

Objectives: The event was organised to increase awareness about the importance of science & technology in every aspect of one's life. The core areas covered were Gmail, WhatsApp, Social Media, Online Shopping, and Online Payment methods, along with some crucial principles of cyber security

Content of the Event: A group of 28 students, along with 2 faculties visited the premises with the burden to impart their knowledge of specific technologies which one can readily apply and learn. The students of the NGO were taken care of one-on-one by the students of the university. This all the more enabled them not only to impart their knowledge and skills but also to get to know them. The coordinators of the NGO were extremely supportive, helpful, and hospitable.

Activity Outcome: It was an exhilarating experience for students. The outcome of the event are as follows:

During the event students was able to gain knowledge within academics as well as beyond academics.

This provides opportunity for the students to demonstrate their learning experience.

Encourages team building among students

Conclusion: The event thus turned out to be successful by fulfilling its aim of imparting scientific knowledge in an interesting way to the students which will remain fresh in their memories for long. Towards the end, the students of the NGO appreciated the initiative taken by K R Mangalam for this entire camp, along with admitting that they benefited from the entire camp. Moreover, they also welcomed the university to continue organizing such awareness camps in the future. In the end, the students of the university acknowledged that they were truly satisfied with having an opportunity to overflow their knowledge and skills. The event was an overall success. Students that took part had an overall positive experience with the event.

Future Scope: Innovation is one of the most powerful tools a business can wield in today's ever-changing market. Such events are helpful to promote multidisciplinary research among all students in different departments.

Educational Trip to Suraj Kund, Faridabad

SECOND NATIONAL CONFERENCE ON CYBERCRIME INVESTIGATION AND DIGITAL FORENSICS

Students and Faculty of SCHOOL OF ENGINEERING AND TECHNOLOGY- CSE attended Second National Conference on Cybercrime Investigation and Digital Forensics on April 4th 2022 at Vigyan Bhawan, New Delhi.

Introduction: The Second National Conference on cybercrime investigation and Digital Forensics was organized by Central Bureau of Investigation, on April 4th, 2022 at Vigyan Bhawan, New Delhi. Thirty five students from Department of Computer Science & Engineering, School of Engineering & Technology, K. R. Mangalam University, Gurgaon attended the same.

Objectives: To make students aware about advancements in Digital Forensics and Digital Evidence Gathering Techniques, Strengthening International Corporations for combating Cyber Crimes, Leveraging Technology and Public Awareness for Real-time prevention of Cyber Enabled Financial Crimes, and protecting elders and children from cybercrimes and reducing vulnerabilities on Digital platforms.

Content of the Event: Shri Ashwini Vaishnaw, Union Minister of Railways; Communications; Electronics and Information Technology inaugurated the conference. Shri Vaishnaw also launched new website of CBI (https://cbi.gov.in) during the conference.

The Minister stressed that tackling fraudulent use of information in cyber space is a huge challenge and felt that it could be tackled on 05 fronts which include need for over handling the legal structure in a big way. The Minister called upon the university students, the young scientists, the young engineers to come up with the solutions like using blockchains, encryptions, extremely good firewalls, isolating infrastructure etc.

Activity Outcome: Students learnt about advancements in Digital Forensics and Digital Evidence Gathering Techniques, Strengthening International Corporations for combating Cyber Crimes, Leveraging Technology and Public Awareness for Real-time prevention of Cyber Enabled Financial Crimes, and protecting elders and children from cybercrimes and reducing vulnerabilities on Digital platforms.

Conclusion: Students learnt a lot from various cyber security experts from organizations, such as Meta, aps they emphasized on the growing demand of well-equipped cyber security experts with sufficient knowledge to deal with any mishap.

Future Scope: Such conferences help the students to explore several domains apert from their syllabus and motivate them to learn the new and upcoming technologies and their usages.

TERI GRAM RETREAT FIELD VISIT REPORT

SCHOOL OF ENGINEERING AND TECHNOLOGY organized a field visit to TERI GRAM RETREAT on April 6th, 2022 at TERI Campus, Gurugram.

Introduction: To provide exposure to students about latest work with relation to environment. Concern bodies involved work in sustainable development of society with better utilization of resources.

Objectives: Briefing students about role of sustainable development with reference to present scenario. Latest research of distributions of load demand with nature inspired technique is deliberated.

Content of the Event: Students of Electronics & Communication Engineering, Electrical & Electronics Engineering, and Mechanical Engineering visited The Energy And Research Institute on 06 April 22. Ms. Minakshi katoch (Assistant Professor, Electrical & Electronics Engineering), Ms. Puja Acharya (Assistant Professor, Electronics & Communication Engineering) and Dr. Bhavesh Vyas (Assistant Professor, Electrical & Electronics Engineering) visited TERI Gram, Gwal Pahari, Gurugram, Haryana recently. The faculty with students visited sustainable facilities Air Earth Tunnel, Waste Water Treatment using Root Methods, Micro propagation and vermi-composting. The visit started with a presentation in GANGA conference hall. The Teri expert Mr. Suresh Dev, Deputy Manager, TERI Gram explained about the history of TERI, Research, and Innovation of at TERI. The research work at TERI focused

on the real time problems which drag us away from attaining Sustainable Development Goals (SDG). After the presentation the inquisitive minds of K R Mangalam University ECE, EEE and ME students raised many questions and had a healthy discussion with the experts. The various facilities visited at TERI had enhanced the student knowledge. The students have got many ideas to identify the issues in attaining the SDG goals.

Activity Outcome: Finally, students capable to learn following outcomes.

- Briefing students about role of sustainable development with reference to present scenario.
- Latest research of distributions of load demand with nature inspired technique is deliberated.
- Utilizations of agro waste obtained from nature is to create coal substitutes was explained.
- With smokeless chulha running on reduced emission-based fuel prepared from waste obtained from nature.
- Less can be more was practically shown to the students.

Conclusion: Basics of technology implementation were briefed and future opportunity to work with the organization was put forwarded in from of students from research point of view.

Future Scope: It raises the future possibilities of students from internship and projects-based work as carried by the organization. All along with-it practical implementation of environment-based projects are fascinated to students for developing intellectual interests in the field.

Figure 1: Students at TERI

Figure 2: Producing identical plants by culturing plant tissues

Figure 3: Water Waste Management Root Zone

Figure 4: Earth Air Tunnel motor room

HANDS-ON SEMINAR ON ELECTRIC VEHICLE DESIGN

SCHOOL OF ENGINEERING AND TECHNOLOGY organized a Hands-on Seminar on Electric vehicle Design for undergraduates of SCHOOL OF ENGINEERING AND TECHNOLOGY on April 6th, 2022 at K R Mangalam University in association with the SIEMENS.

Objectives: To acquaint students about

- Knowledge of electric vehicle design
- Scope of Electric Vehicles.
- knowledge of the most up-to-date technologies in the globe, as well as additive manufacturing.
- Demonstrated the NX design software

Content of the Event:

Department of mechanical engineering under School of Engineering and Technology organized a Hand on Seminar in association with the SIEMENS on the topic "Electrical Vehicle Design" on 26 April 2022. It was a wonderful and knowledgeable session, and the speaker and trainer were Mr. Pardeep Singh and trainer Mr. Pushpender.

The speaker discussed that the Modern technology has paved the way for multi-functional devices like the smart watch and the Smart phone. Computers are increasingly faster, more portable, and higher-powered than ever before. With all these revolutions, technology has also made our lives easier, faster, better, and more fun. They have a wealth of knowledge and experience in this field, and he shares his knowledge with us. Also, share their knowledge of the most up-to-date technologies in the globe, as well as additive manufacturing.

Mr. Pushpender (Trainer) assists to students in honing their talents, which will aid us in both industrial job and placement. Also discuss the manufacturing process, the involvement of engineers, and the design aspect of any product. Also, talk about drawing and computer-aided design. Because the ABCD alphabet was also designed using an engineering process,

Finally, Mr. Pushpender demonstrated the NX design software, which was very remarkable. NX is an advanced high-end CAD/CAM/CAE, which has been used by the industry for Research and development. Overall, the session was very informative and insightful.

Activity Outcome: Demonstrated the NX design software, which was very remarkable. NX is an advanced high-end CAD/CAM/CAE.

Conclusion: The seminar thus turned out to be successful by fulfilling its aim of imparting knowledge of electric vehicle design in an interesting way to the students.

Future Scope: Such seminars are crucial for learning, innovation in automobile sector. Such type activities will be conducted in every semester for capacity building of students.

EDUCATIONAL TOUR TO KASOL

SCHOOL OF ENGINEERING AND TECHNOLOGY organized an Education tour to Kasol, Himachal Pradesh for undergraduates of the school from April 25, 2022 to April 30, 2022

Introduction: Educational institutions aspire to implement student-cantered teaching and learning techniques. Many of experiments are feasible in laboratories which provide complete insights of scientific methods but for others sometimes field visit is required.

Objectives:

To get lively exposure before research, to get the real-feel of the problems associated with the hilly areas, get to know about the traditional "handcrafted" solutions and can get more ideas to deal them with the technological advancements. To stimulate these ideas into their Minor/ Major Projects and can write research/ survey papers.

Content of the Event: School of Engineering and technology, K R Mangalam University, Gurugram organized 5 days educational tour to Kasol, Himanchal Pradesh on April 25 2022 to April 30, 2022 where students from all the courses (B. Tech. (CSE), B. Sc. (CS), BCA) visited the Kasol along with four faculties (Mr. Ashwani Kumar, Mr. Amar Saraswat, Ms. Jyoti Kataria and Ms. Pallavi Pandey). The visit proved to be a great way to arouse curiosity in the minds of students and was a thrilling and motivating experience. After reaching Kasol, students visited to Parvati river. Later on next day, students started trekking to Kheer Ganga. There was a shiv temple as well as a hot spring over there. Vising these areas students returned back from Kheer Ganga to Kasol. From there they went to Kullu and did river rafting as well. They learned a lot about hilly areas, several waterfalls and the life style at hilly areas and how people have dig the mountain which may be the reason of landslide.

Activity Outcome: It was an intriguing experience for students. Students will stimulate the ideas into their Major/ Minor Projects as well as research work. Topics covered are Landslide Identification Using Machine Learning, Landslide Susceptibility Mapping Using Machine Learning and Deep Learning Algorithms, Subsurface Characterization and Machine Learning Predictions of Hot Springs of Gurudwara Manikaran Sahib and Exploratory Analysis of Geo-Locational Data

Conclusion: The tour therefore proved to be a success, as it achieved its goal of conveying project knowledge to the students in an engaging manner that would linger in their minds for a long time.

Future Scope: Such visits are crucial for understanding natural phenomena of hilly areas. Visit to mountains, Parvati-river, Manikaran and Kullu like areas provides pleasure to students and because of these kind of trips students get enthusiasm to initiate and complete their projects and research works.

CODING SHASTRA COMPETITION

SCHOOL OF ENGINEERING AND TECHNOLOGY organized Coding Shastra Competition on May 10th, 2022 at Block A Lab 1, KR Mangalam University, Sohna Road, Gurugram being a part of Computer Society of India.

Introduction: Computer Society of India (CSI) Student Chapter of K. R. Mangalam University organised an offline web based competition named "Coding Shastra Competition" on May 10, 2022. The event took place in the university campus in A-Block Lab 1 from 11:00 AM to 12:45 PM. The aim of the event was to encourage students about web development and keeping themselves up to date with updates in the IT field and to promote an environment of staying updated with the new web technologies being developed throughout the world.

Objectives: The competition aim was to inculcate in the minds of young students in filed of full stack web development technologies and to provide a platform to fulfil their industrial needs and to grow their skills in web development.

Content of the Event: In the event a total of 20 students registered and took part in the offline competition. The event comprises of creating a fronted or UI/UX design to show their creative designing skills and they worked under a limited period of time of two hours. The aim of the event was to encourage students to build carrier in web development field. As per the rules of the event, students took part in solo or a teams of 2 each.

Activity Outcome: It was an exhilarating experience for students. The outcome of the event are as follows:

- During the event students was able to gain knowledge about many new technology like react.js , vanilla.js and git deployment.
- This provides opportunity for the students to demonstrate their learning experience.
- Encourages team building among students.

Conclusion: The event thus turned out to be successful by fulfilling its aim of imparting web development knowledge in an interesting way to the students which will remain fresh in their memories for long. The following winners were identified-

Team including Sachin Kumar and Kanak Jadaun of B.Tech 4th semester won 1st prize, followed by the team of Yatin Jhamb and Payushi Tyagi of B.Tech 4th semester that won 2nd prize, and the team of Ronak Soni and Onkar Vatsa of B.Tech 4th semester winning the 3rd prize. Cash prizes of amounts Rs. 1000, Rs. 600 and Rs. 400 were given to teams winning positions 1st, 2nd and 3rd respectively. All other participants were given e-certificates to honour their effort and participation in the event.

The event was an overall success. Students that took part had an overall positive experience with the event. The contest renewed a competitive spirit among students whilst maintaining a healthy environment for learning and development.

Future Scope: Web development is one of the most powerful tools a business can wield in today's ever-changing market. Such events are helpful to promote multidisciplinary designing skills among all students in different departments.

WORKSHOP ON INSIGHTS OF COMPUTER FUNDAMENTALS

SCHOOL OF ENGINEERING AND TECHNOLOGY organized an **Online Workshop on Insights of computer fundamentals** on May 6th, 2022 at B-211 2nd floor, B Block of K. R. Mangalam Univesity.

Introduction: To enhance the knowledge of computer fundamentals among students, Computer Society of India (CSI) - Student Chapter of K.R. Mangalam University organised a pan-university online workshop called "Workshop on Insights of computer fundamentals" on Friday 06 May, 2022. The aim of the event was to encourage students to work on computer networking and come up with innovative ideas and solutions.

Objectives: The main aim for conducting this event is to introduce students to the fundamentals of computer networking and fundamentals of different streams.

To enhance the knowledge and skills of the student and motivate them to compete in the global competitive engineering field.

Content of the Event:

In the workshop, students took part in a large scale in both online and offline mode. Each and every student gained good knowledge of computer networking fundamentals. Mr Vishnu Dutt, was the eminent speaker of the workshop, who explained each and every terms in a very well mannered way and cleared each and every doubt asked by students.

Activity Outcome: The webinar served to develop good skills, ability in computer networking and to support and contribute to the growth of relevant industries for all participants.

- It also provided an opportunity for the students to enhance their learning experience.

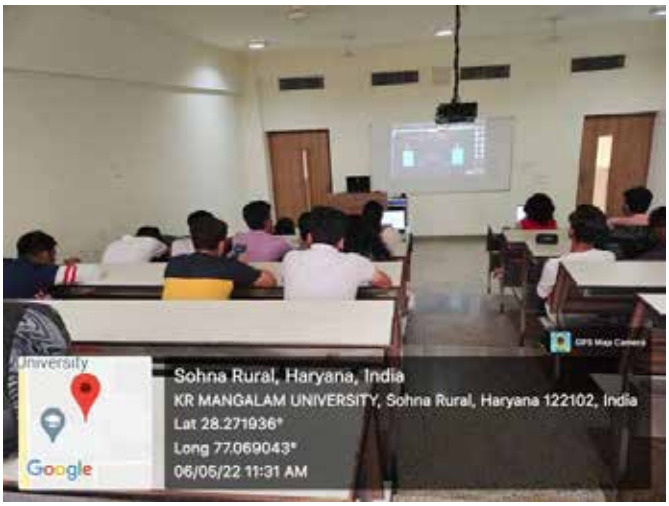
Conclusion: The event was successfully conducted by fulfilling its aim of imparting scientific knowledge in an interesting way to the students which will remain fresh in their memories for long.

The following guest was invited for the event:

- Mr Vishnu Dutt

Currently working in Cisco Technology as a Senior Network Architect.

Future Scope: Through this workshop students got a very well versed basic knowledge of Computer Networking Fundamentals and this will help them fulfil their industrial need.



VISIT TO APPWARS TECHNOLOGIES

SCHOOL OF ENGINEERING AND TECHNOLOGY organized an An Industrial Visit to Appwars Technologies at sector 2 Noida on 26th May 2022 for students of B.Tech and BCA.

Introduction: To bridge out the Industrial Academia gap, Department of Computer Science & Engineering, School of Engineering & Technology organized an Industrial Visit to Appwars Technologies, Noida. A total of Twenty-two students of B.Tech, B.Sc. and BCA attended the visit. The students got exposure about the workflow of IT Companies and the latest Technologies. A special session for discussing the career opportunities was also conducted by the company.

Objectives: The industrial visit was aimed to provide an exposure about the workflow of IT Companies and the latest Technologies

Content of the Event:

In the beginning, the student visited the various departments of the Appwars Technologies, wherein they accumulated knowledge about the work process in the IT companies.

Mr. Sonu Prakash, CEO briefed some of the most commonly used features in Python and R Programming. He discussed that Python supports object-oriented programming with classes and multiple inheritances and code can be grouped into modules and packages. The language supports raising and catching exceptions, resulting in cleaner error handling. He demonstrated certain examples by executing the code. Mr. Prakash also discussed that R Language has an effective data handling and storage facility, and provides a suite of operators for calculations on arrays, lists, vectors, matrices, and includes conditionals, loops, user defined recursive functions and input and output facilities.

In the end, Mr. Prakash discussed the career opportunities related to IT sector and motivated the students to sharpen their coding skills.

Activity Outcome: The students got exposure about the workflow of IT Companies and the latest Technologies. The students also learnt about few of the upcoming technologies and programming languages used in the industries.

Conclusion: With this industrial visit, Academia- Industry gap was being filled, wherein, the students were exposed to the work culture and approaches used in the IT industry.

Future Scope: Such kind of industrial Visits should be planned in the future, for motivating the students and bridging the Academia-Industry Gap.

Some Glimpses:

FIELD VISIT TO SOHNA ROAD CORRIDOR PROJECT

SCHOOL OF ENGINEERING AND TECHNOLOGY-Department of Civil Engineering organized an Industrial Site Visit to Sohna Elevated Road Project Gurugram for under and post graduate students on April 13. 2022 at Sohna Elevated Road Corridor, Gurugram along with Ms. Gauri Aglave and Ms. Sarah Khan.

Introduction: Sohna Elevated road project is the construction of 21-km road aimed at reducing the travelling time between Alwar in Rajasthan and Gurugram to under two hours by providing signal-free travel through the traffic-prone zone between Rajiv Chowk and Sohna. This ₹1,897-crore project aimed to ease traffic flow from Netaji Subhash Chowk to Sohna.

Objectives: To acquaint students with technical details and fundamentals of bridge construction by taking them to actual construction site and exposing them to live construction practises, design and detailing.

Content of the Event: Department of Civil Engineering, SCHOOL OF ENGINEERING AND TECHNOLOGY has organized an Industrial visit to Elevated road Project site, Gurugram on 13th April 2022, for the students of Civil department coordinated by Faculty members Ms. Gauri Aglave and Ms. Sarah Khan.

The construction of Sohna Elevated Road Project will be carried out in two phases. In the first phase, the five km-long elevated road on single pillars will be constructed from Netaji Subash Chowk to Badshahpur village and further four-km road will be widened to six lanes at the cost of ₹707 crore in around one-and-a-half years. In the second phase, the remaining stretch from Netaji Subhash Chowk to Sohna on National Highway 248-A will be widened to six lanes and underpasses and flyovers will be constructed in view of the villages on both sides of the road.

The site visit was conducted under the supervision of Mr. Parthasarathy the Project manager, of the oriental India construction company undertaking the Project. Mr. Parthasarathy has first given a brief introduction of the project to the students, then he took them to the actual bridge location over the span connecting badshahpur to vatika chowk explaining technical details and on-site work details to the students. He also explained the designing of prestressed bridge structures, post tensioning procedure and reinforcement detailing. He has solved the queries of students very composedly and also explained the societal impact of the project to them. He has also shared his experiences and more than 20 years of journey in the construction field with the students.

Activity Outcome: The visit was extremely beneficial for the students as it has given them insight about the working mechanism of a construction group and on-site activities carried out in bridge construction.

Conclusion: This is one of a kind projects, including latest technology and design for casting prestress structures as well as advanced equipment which is a great experience for their progressive learning.

Future Scope: Such visits are crucial for understanding on-site construction practises. Visits to construction sites and industries will be conducted in every semester for capacity building of students.

WORKSHOP WITH IMAGINXP ON USER INTERFACE/USER EXPERIENCE

SCHOOL OF ENGINEERING AND TECHNOLOGY organized a Workshop with ImaginXP for Undergraduates on May 27th, 2022 at A-213 2nd floor, A Block of K R Mangalam University.

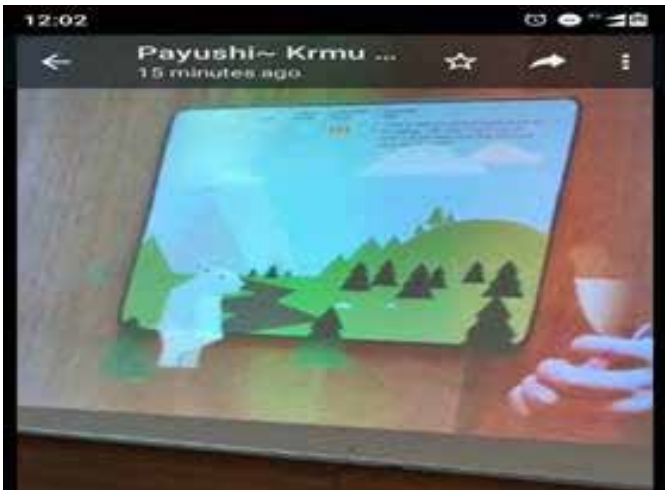
Introduction: The term UI/UX stands for user interface/user experience design and refers to the practice of designing digital products with a user-first approach. UX designers are responsible for making sure that the user's interaction with a digital product is as fast, easy and efficient as possible. They are not concerned with visuals; they map out the user journey and strategise to solve users' pain points and meet their needs. The outcome of that is a wireframe – a blueprint of the product.

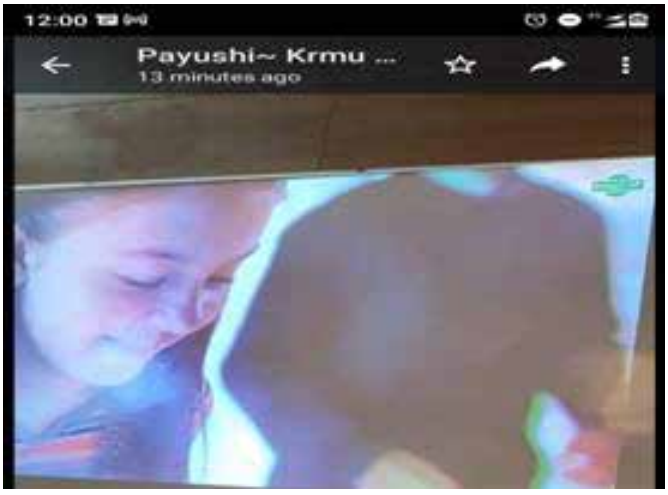
UI designers pick up where UX designers leave off. Their role is to bring the digital product to life based on the wireframe provided. Like in the furnishing example – you already have all the functionalities mapped out, and now it is time to decorate.

Objectives: The aim of the UI/UX workshop is to provide students with the knowledge of user-centered design, user -centered methods in design, graphic design on screens, simulation and prototyping techniques, usability testing methods, interface technologies and user centered design in corporate perspective.

Content of the Event: Department of Computer Science and Engineering organized a workshop on User Experience/ User Interface in collaboration with ImaginXP. Mr. Abhayjeet took the session of the B.Tech(CSE)/BCA and B.Sc students and introduced students with the concept of user interface/user experience. Mr. Abhayjeet interacted with the students and explained about the uses, present and future of the UI/UX technology. Students participated with great enthusiasm and exchanged thoughts with each other and the instructor.

Activity Outcome: Develop professionals having good skills, self-learning ability and confidence to support and contribute to the growth of relevant industries.





- This provided opportunity for the students to learn about user interface/user experience.
- This provided opportunity to know how user interface/user experience enhances and promotes business.

Conclusion: The event was successfully conducted by fulfilling its aim of imparting user interface/user experience knowledge in an interesting way to the students. The event helped the students to explore the career opportunities available in the field of user interface/user experience.

Future Scope: Innovation is one of the most powerful tools a business can wield in today's ever-changing market. Such events are helpful to promote multidisciplinary research among all students in different departments.

SESSION FOR COMPUTER LITERACY PROGRAM FOR UNDER PRIVILEGED STUDENTS

SCHOOL OF ENGINEERING AND TECHNOLOGY – Department of Computer Science and Engineering organized a Session for Computer literacy program for students of 9th and 10th standard of Ghamroj girls senior secondary school, Ghamroj, Haryana.

Introduction: Orientation of session on computer fundamentals organised by KR Mangalam University for Ghamroj girls senior secondary school, Ghamdoj, Haryana

Objectives: To provide technical information to students of Ghamroj girls senior secondary school of the computer, its parts and functions, the way to operate it and the how computer make modern life easy where how the most lengthy things to human mind could be easily done in just matter of seconds. The knowledge of these tools will come in handy for the students in their future prospect.

Content of the Event: School of Engineering and technology, K R Mangalam University, Gurugram organized a one day educational session for Ghamroj Mahila Vidyalaya on May 19, 2022 where students from the courses (B. Tech. (CSE) 4rth semester and MCA) visited the school along with faculties, Ms. Pallavi Pandey and Dr. Sarita. The visit proved to be fruitful and an entertaining session to arouse curiosity in the minds of students for usage of computer and their first stepping stones in technical field.

Activity Outcome: Students learnt about basic computer fundamentals, different parts of computer like input output devices, different kinds of memory units and Microsoft office including excel, word and PowerPoint. Girls students there came to know about Google search engine and it works. How can one Google to extract any kind of information.

Conclusion: We successfully provided the students some basic knowledge in computer field and motivated them to grow carrier in tech sector and could take admissions in various Engineering related subjects.

Future Scope: By organizing this session students will get motivated about tech sector and try to grow their carrier in fields like IT industry and engineering sector.

DATA ANALYTICS: A TRAINING PROGRAM FROM ICT ACADEMY AND MARICO (VIRTUAL)

SCHOOL OF ENGINEERING AND TECHNOLOGY organized Data Analytics: A Program from ICT Academy and Marico CSR "Empowering Women Graduates" - ICT Academy and Marico CSR program for final year female students. Program executed over virtual mode from 30th May 2022 to 18th June, 12 to 4 PM.

Introduction: With the objective of introducing students to career options in Data Analytics, a program was organized with ICT Academy and Marico CSR program on Analysis and Visualization of dataset, ICT academy introduced students to the R Studio included Data Foundations, Foundational Analytics and Foundational Analytics.

Objectives: To train women graduates for Women Empowerment in Data Analytics, Foundation Analytics, Interpretation of Analytics, Advanced Analytics

To open up career and further education options in the field of Technology.

To acquaint students, Data Analytics as a career option.

Content: Mr. Balachandar introduced final year female students to R Studio for data analytics and visualization. He explained about

1. Data Fundamentals
2. Analytical Testing
3. Basic and Intermediate Statistics
4. Hypothesis Testing
5. Data Visualizations
6. Decision Making with Statistics and Analytics

- Data Foundations - Back-End: Data Architect, Database Design, Data Basics, Types - Ordinal, Cardinal, Attributes, Forms, Normalization/Optimization, Big Data.
- Foundational Analytics - Aggregations, Distribution Analysis, Standard Deviation, Correlation and Causation, Signal and Noise, Probability, Sampling, Decision Tree Modeling and Good hart's Law.
- Interpretation of Analytics - Hypothesis Testing, Type I/II Errors, Visualization Interpretation, Descriptive Statistics, Bias, Histogram/Box Plots, Inferential Statistics
- Advanced Analytics - K-Means Clustering, Markov Analysis, Regression Modeling, T-Test, Chi-Square Test, AB Testing, Algorithms, ANOVA.

He described the eligibility, content and career prospects of all these specializations.

Attendees

1. Students of Final Year SCHOOL OF ENGINEERING AND TECHNOLOGY CSE.
2. Students of Final year SOMC joined the program.

Activity Outcome: Students got an introduction to the R studio in Data Analytics and the possibilities of job opportunities in the field of Data analytics.

They were also acquainted with the system of Google Co-lab for this program.

Conclusion: One of the best parts about this program was that the students got the opportunity to learn from industry professionals who have worked in the same field for years. This was a highly informative program for the students of Final year SCHOOL OF ENGINEERING AND TECHNOLOGY and SOMC who are interested in diversifying their career in Data Analytics as well as in applying for further studies.

Further Scope: In order to expand students' alternatives and awareness, this partnership and collaboration in creating such events that directly assist students in negotiating their future career route and assistance in option exploration can be organized in the future.

Publication in APRIL 2022

(a) Research Paper in UGC Care I/ Scopus/SCI listed Journals	(b) Book/Book Chapters in UGC Care I/ Scopus/SCI listed Journals (c) Conference proceedings in Scopus/SCI	(c) Patent Filled/ published/ Granted	Title of the paper	Name of Journal/ Publisher
Journal article	-	-	Machine Learning for Prediction of Heat Pipe Effectiveness	Energies/MDPI/Basel, Switzerland
-	Conference proceeding article	-	Unfolding the network dataset to understand the contribution of features for detecting malicious activities using AI/ ML	Materials Today: proceedings
-	-	Patent	IOT BASED SMART FARMING WITH AGRICULTURE TASK AUTOMATION	
Journal article	-	-	Neural Network Prediction of Slurry Erosion Wear of Ni-WC Coated Stainless Steel 420	Metals/ MDPI/ switzerland
-	Book: Applications of Computational Science in Artificial Intelligence	-	Chapter: Prediction of Movie Success Using Sentimental Analysis and Data Mining\n	IGI Global

Publication in May 2022

Sr. No.	Faculty Name	School	Publication in MAY 2022				
			(a) Research Paper in UGC Care I/ Scopus/ SCI listed Journals	(b) Book/Book Chapters in UGC Care I/ Scopus/SCI listed Journals (c) Conference proceedings in Scopus/ SCI	(c) Patent Filled/ published/ Granted	Title of the paper	Name of Journal/ Publisher
1	Mr. Amar Saraswat	SOET	-	Conference proceeding article	-	Profitability Visualization in Catalog Management System	ECS Transactions
2	Dr. Kaushal Kumar	SOET	Journal article	-	-	Application of coolants during tool-based machining – A review	Ain Shams Engineering Journal/Elsevier/ Egypt
3	Dr.Jarnail singh	SOET	Journal article	-	-	Transition Metal (Mn, Ni) Co-doped CdO Nanoparticles: Demonstration of Structural, Optical, and Magnetic Properties	Journal of Superconductivity and Novel Magnetism
4	Dr. Kaushal Kumar	SOET	-	-	Patent	A process for preparing hybrid concrete and hybrid concrete there of	Australia
5	Dr.Prabhakar Bhandari	SOET	Journal article	-	-	THERMODYNAMIC ANALYSIS OF COMBINED ORC-VCR SYSTEM WITH RECUPERATOR AND REHEATER	Acta Innovations
6	Ms. Moniks Khatkar	SOET	-	Book	-	Techniques of Data Mining	Raksha Bajpai

CONTRIBUTION FROM FACULTY

Publication in June 2022

Sr. No.	Faculty Name	School	Publication in JUNE 2022				
			(a) Research Paper in UGC Care I/ Scopus/ SCI listed Journals	(b) Book/Book Chapters in UGC Care I/ Scopus/SCI listed Journals (c) Conference proceedings in Scopus/SCI	(c) Patent Filled/ published/ Granted	Title of the paper	Name of Journal/ Publisher
1	Dr.Prabhakar Bhandari	SOET	Journal article	-	-	Influence of three dimensionality effects on thermal hydraulic performance for stepped micro pin fin heat sink	Meccanica
2	Dr. Kaushal Kumar, Mr. Rishabh Arora, Dr.Jarnail singh	SOET	Journal article	-	-	Comparative Analysis of Waste Materials for Their Potential Utilization in Green Concrete Applications	Materials
3	Dr. Prabhakar Bhandari	SOET	Journal article	-	-	Influences of tip clearance on flow and heat transfer characterstics of open type micro pin fin heat sink	International Journal of Thermal Sciences

UNFOLDING THE NETWORK DATASET TO UNDERSTAND THE CONTRIBUTION OF FEATURES FOR DETECTING MALICIOUS ACTIVITIES USING AI/M

-Dr. Kaushal Kumar, Ms. Monika Khatkar

Abstract : As the internet expanded significantly over the last decade, the usage of the Internet of Things (IoT) has helped make smart systems (healthcare, smart cities etc.). However, as IoT networks grow, so does the potential for cyber threats and attacks. In an IoT-based application infrastructure, devices are linked to sensors that connect to big network servers, leaving them exposed to malicious attacks and threats. The current intrusion detection systems (IDS) are not capable to process massive data coming from IoT devices and works only for known intrusion. For such type of smart systems, a smart ML/AI-based IDS system is required that helps process massive data and detect unknown intrusion too. In this paper, we investigate important features from the intrusion dataset which can help to classify malicious activity to develop an efficient smart model. As it is important to understand the dataset well before using it for training any ML/AI classifier model, our goal of this paper is to give a comprehensive view of the popular NSL KDD dataset for finding the best features for developing a robust ML/AI-based IDS for IoT security. Furthermore, this study provides an overview of the most and least used features so that the best feature selection method can be applied in anomaly-based intrusion detection systems in an IoT environment.

BOOK- TECHNIQUES OF DATA MINING

-Ms. Monika Khatkar

Preface: Data mining is a multidisciplinary field, drawing work from areas including database technology, machine learning, statistics, pattern recognition, information retrieval, neural networks, knowledge-based systems, artificial intelligence, high-performance computing, and data visualization. We present techniques for the discovery of patterns hidden in large data sets, focusing on issues relating to their feasibility, usefulness, effectiveness, and scalability.

As a result, this book is not intended as an introduction to database systems, machine learning, statistics, or other such areas, although we do provide the background necessary in these areas in order to facilitate the reader's comprehension of their respective roles in data mining. Rather, the book is a comprehensive introduction to data mining, presented with effectiveness and scalability issues in focus.

The intent of this book is to describe some recent data mining tools that have proven effective in dealing with data sets which often involve uncertain description or other complexities that cause difficulty for the conventional approaches of logistic regression, neural network models, and decision trees. Among these traditional algorithms, neural network models often have a relative advantage when data is complex. We will discuss methods with simple examples, review applications, and evaluate relative advantages of several contemporary methods.

INFLUENCE OF THREE DIMENSIONALITY EFFECTS ON THERMAL HYDRAULIC PERFORMANCE FOR STEPPED MICRO PIN FIN HEAT SINK

-Dr. PrabhakarBhnadari

Abstract: Microchannel heat sink is one of the most prominent solutions for high heat flux dissipation problem. In the present numerical study, thermohydraulic investigation has been carried out on square pin fin micro heat sink with novel pin fins arrangement. The variable pin fin height in the stepped fashion along the microchannel length in the arrays of two, three and four fins has been considered under same convective surface area constraints. A comparative heat transfer analysis has been performed among stepped configurations of the heat sink. Moreover, comparison is also made with the conventional design of closed microchannel heat sink. The study has been performed under constant heat flux condition using water as cooling medium. 3-Dimensional numerical simulations were carried out for operating range of Reynolds number from 100 to 500 and heat flux of 300 kW/m2. Two main conclusions drawn from present study are: (1) providing tip clearance in microchannel, delivers better overall thermal performance compared to closed configurations in spite of having lesser convective surface area, (2) introduction of variable tip clearance along microchannel length further enhances the performance due to increased fluid mixing and enhanced three dimensionality effects in flow phenomenon. Among all the considered geometries, heat sink with four stepped configuration has shown better overall performance due to favorable fluid flow characteristics.

INFLUENCES OF TIP CLEARANCE ON FLOW AND HEAT TRANSFER CHARACTERSTICS OF OPEN TYPE MICRO PIN FIN HEAT SINK

-Dr. PrabhakarBhandari

Abstract: Microchannel heat sink without any tip clearance i.e. completely closed microchannels have been focused and widely studied. In the present work, detailed comparative analysis has been performed between open and closed micro pin fin configurations of the heat sink. Keeping the constant channel height of 2.0 mm, three different micro pin fin heat sinks with tip clearance of 0%, 25% and 50% of channel height were fabricated and analyzed. Square cross-section fins are considered and arranged in inline fashion. An additional plain channel (without any pin fin) is also examined for the sake of comparison and completeness of the study. The experiments have been conducted using deionized water as the working fluid and copper as microchannel substrate. Present work aims to recognize the importance of tip clearance and quantify its suitable value that facilitates better heat transfer rate. Numerical predictions further elaborate the physical insight of the coolant flow behavior evolved due to the presence of tip clearance in the heat sink. Findings of the present study indicate that tip clearance of 50% results in lesser heat transfer coefficients due to considerably lower net convective surface area. Whereas, tip clearance of 25% has shown superior thermal performance amongst all the configurations explicitly at Reynolds number more than 350. In addition to the net convective surface area, major factors that promote enhanced heat transfer are dispersed fluid flow behavior in the confined space of tip clearance which propagates thinner boundary layer, three dimensionalities in flow and augmented fluid mixing. Moreover, heat sink with tip clearance has also shown lesser pressure drop compared to closed microchannel due to reduced flow obstructions. It has been concluded that tip clearance may have positive impact on overall thermal performance but up to the certain limit.

IOT BASED SMART FARMING WITH AGRICULTURE TASK AUTOMATION

-Dr.Meenu,Dr. Swati

Abstract: Agriculture is the broadest financial area and plays an important role in the overall economic growth of a nation. India is an agriculture-based country and 75%of a people were live in rural areas. Now a days most of the peoples migrate rural to urban places. Because of the technological development people could not more interest to work with oldest method of farming. So, overcome this problem to go with improved irrigation system in agricultural environments using sensors, GSM and water meter. In this module we can include the light intensity and humidity sensing, GSM, moisture sensor was used to control the motor pumps to automation process. In the implementation of automation is to using the improvement of farming and growth of yield. So, making this model is to sensing the soil moisture level and water levels are indicate to system for automatically switched ON/OFF the motor pumps. It is usage of the less time, electricity conception and involuntarily results in wastage of water. That is the same time to the indicator sending the message to the former for using GSM. The aim of our idea to likely work with forms easily to grow of farming.

PREDICTION OF MOVIE SUCCESS USING SENTIMENTAL ANALYSIS AND DATA MINING

-Dr.Meenu,Dr. Swati

Abstract: Movies have become a significant part of today's generation. In this chapter, the authors worked on data mining and ML techniques like random forest regression, decision tree regression, support vector regression, and predict the success of the movies on the basis of ratings from IMDb and data retrieved from comments on social media platforms. Based on ML techniques, the chapter develops a model that will predict movie success before the release of the movie and thereby decrease the risk. Twitter sentimental analysis is used to retrieve data from Twitter, and polarity and subjectivity of the movie is calculated based on the user reviews, and those retrieved data machine learning algorithms are used to predict the IMDb rating. A predictive model is developed by using three algorithms, decision tree regression, SVR, and random forest regression. The chapter compared the results using three different techniques to get the movie success prediction at a reasonable accuracy.

THERMODYNAMIC ANALYSIS OF COMBINED ORC-VCR SYSTEM WITH RECUPERATOR AND REHEATER

-Dr. PrabhakarBhandari

Abstract: The trend of utilization of low-grade thermal energy gain huge attention due to increase in energy demand and depletion of conventional resources of energy. Low grade energy can be used in ORC-VCR cycle for refrigeration purpose. In the present work, to improve the performance a modified ORC-VCR cycle, recuperator and reheater are integrated in the cycle. The thermodynamic analysis of the modified system has been conducted with R600a, R600, R290 and R1270 as working fluids under various operating conditions viz. evaporator temperature, condenser temperature, boiler exit temperature. Different parameters evaluated to assess the performance are overall COP, mass flow rate per kW cooling capacity, expansion ratio and compression ratio. From the analysis, butane is found as a best choice for the modified ORC–VCR cycle. It was found that for the modified ORC-VCR cycle at boiler exit temperature of 90°C and condenser temperature 40°C has system COP of 0.5542 with butane, which is 7.1% and 18% higher than that of ORC-VCR cycle with recuperator and simple ORC-VCR cycle, respectively.

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