A brief on the operation of student based research clubs at KLU

ROBOTRONICS CLUB:

The Club will be focusing its Research interests in the following areas broadly, but of course they are not limited and the members may feel free to work for any allied areas of their choice in the board spectrum of Robotics, Mechatronics:

- **Bio-Mechatronic Systems**
  - Surgical Robots
  - Medical Robots
  - Rehabilitation Robots
  - Prosthetic Devices
  - Ground Emergency Response Vehicle
  - Smart Artificial Hand with Feeling
  - User Friendly Smart Medical Devices for Intensive Care Units
- **Intelligent Mechatronics Systems**
  - Dexterous Manipulation
  - Humanoid Robots
  - Bipedal Robots
  - Mobile Phone Controlled Flying Robot
  - Tele-operation Systems
  - Control of Highly Dynamic Systems
- **Mobile Robots and Vision Systems**
  - Mobile Robots Navigation and Control
  - Autonomous Underwater Vehicles, AUV
  - Visual Simultaneous Localization and Mapping, VSLAM
  - Computer Vision Systems
- **Field Robots**
  - Landmine Detection Autonomous Vehicle

- A Robot for Characterizing the Limits of Life in Desert Environment

- Solar Powered Rover for Sun-Synchronous Navigation in Tough Roads

- **Micro / Nano Systems**
  - Tactile Sensing Systems

  - Smart Sensor/ Actuators

  - Energy Harvesting Devices

  - Micro Helicopter Flying Robot

  - Micro/ Nano Manipulation

The science and engineering topics we will work on are: Modeling and Simulation of physical systems; Intelligent Control; Design of Robotic Actuators; Embedded control systems etc for the above enlisted areas as well as for those of the choice over and above these.

The research results of all such groups will have to collectively summarized by the Mentor of each group, i.e. each group will have faculty mentor who will be guiding the various members of his groups and also summarize their results so as to reach the final desired end outcome.

The Club will meet on every Wednesday (all except for the Public Holidays / Vacation and other such) from 5.15 PM onwards in the stipulated halls.

The club will organize Group based Seminars, Inter and Intra Group Discussions, Debates, Technical Quizzes, Puzzle solving contests etc. on all such days.

Monthly once the Club will have Model / Demo competitions for the club members only.

Once in the academic year the Club will organize an Open House with models, Proto types and other such developed by it, for publicizing the Clubs Research amongst the University as well as outside world.

The club will collectively Organize any allied Conferences, Workshops, Seminars and Competitions by any relevant department of the University.

The club will organize field visits to relevant Industries as per the need and requirement of the members of club and upon recommendation of the Governing Body.

The Club and its Governing body will be in continuous Contact and collaborate for research and development with the identified Industries like Siemens, Honeywell Automation India Ltd, FMC Technologies, RCS, and Hyundai etc.

The Club will meet its expenditure from within the membership fee of Rs.500/- to be collected from each member.

The club will operate its own SB Bank Account at SBH-KLU Branch which will be operated Jointly by the Club Chief Mentor and HoD Concerned.

The club will release any amount for meeting Research / incidental expenses through this account upon the recommendations of the Governing Body and Elected representatives of the Club.

The Club proceedings will be recorded in a Register on weekly basis.

The Governing Body and Office Bearers will be on a separate forum monthly once for reviewing the ongoing activities and chalking out action plan for the forthcoming month.

The Club will work and perform its tasks as given as monthly guidelines by the Governing Body.

All the club members will be coordinated by the Mentors and the Elected Office Bearers.

Communication Systems Research Club

The main aim of communication Systems research club is to foster an understanding of research in communication Systems for B.Tech students. The communication systems specialized in wireless communications, satellite communications, optical communications, and mobile communication. The research perspectives will be developed at the UG level in Electronics and Communication Engineering so as to foster critical thinking, and problem-solving skills in preparation for professional roles and advanced study.

 The objectives are as follows.

- Provide staged opportunities for students to develop research skills – from basic to specialist and multiple methods.
- Publish research papers in Journal papers and conferences
- Provide hands on experience on going sponsored research projects.
- Organize/participate conferences, workshops and technical exhibition contests in the area of communication systems engineering
- Explore the potential of strategies that integrate research and live research activity for real world learning
- Encourage a culture of creativity, innovation taking in learning through research.
- Support opportunities for interdisciplinary research activity particularly at higher levels
- Instruction on the research process (philosophy, methods, ethics etc)
- Design of prototype elements of communication systems.
- Technical Writing and reports preparation

Benefits to Students:
- Intensive one-to-one training with highly experienced and doctorate faculty

- Hands on experience of cutting-edge research
- Problem-based learning as preparation for Final year project
- Opportunity to receive detailed letter of recommendation from faculty member
- Training relevant to possible post-graduate study like M.Tech and Ph.D
- Enhanced student employability
- Funding for innovative ideas

VLSI Systems Research Group

Objectives of VLSI Research Club:

1. Remedial Classes or Fundamental Classes for New Students

2. Lectures on recent VLSI Technologies

3. Student Level Mini and Major Projects on VLSI

4. Research Problems in VLSI

5. Research Article Study and Analysis Process

6. Research Article Preparation in conferences or journals

7. Guest Lecturers

8. Workshops

9. Conferences

10. Training on VLSI CAD Tools

11. Training on VLSI FPGA kits

Research Areas

1. Digital VLSI

2. Analog VLSI

3. VLSI Testing

RF & Microwave Engineering related research Clubs

Most Focused Areas:

1. Antenna & Propagation
2. RF circuits & Systems
3. Micro Wave Devices
4. Satellite, Space & Wireless Communication
5. Test Measurements & Instrumentation
6. Military Technology

Research Club Activities with Students:-

- To involve the graduate and post graduate students to work with the modules of existing sponsored research activities for getting exposure to real time problems and also to execute the existing projects successfully by fulfilling the objective.
- To encourage the post graduate students in pursuing the research activities for career enhancement.
- To organize seminars, workshops and conferences in collaboration with professional Societies and Core Industries.
- To install and operate training centers in Advanced Communications with a focus in Design of Antenna's and RF Engineering Systems by upgrading this research center as an Antenna excellent center and ultimately these should cater to the needs of post graduate research and Industrial consultation.
- To develop and foster collaborative research with the Industry encouraging cross-fertilization of ideas and promotion of technology transfer.
- To ensure an clear idea regarding Current technology to the students Presenting the videos and conduction of webinars with IUCEE.
- To Visit the Transmitting Stations to know the existing technology.

L S R W COGNITIVE CLUB

L S R W Cognitive club was launched on 10-04-2013 in the Department of English. The abbreviation of L S R W is Listening, Speaking, Reading and Writing. This club is being lead by Dr. S. K. Sheela and the members of faculty involved are -

1. Mrs. P. Leela Priyadarsini
2. Mrs. N.V. Siva Kumari
3. Mrs. P. Anantha Lakshmi
4. Mr. P. Ranjith Kumar

The aim of launching this club is to enhance communication skills and Employability skills of a students as these skills are predominant in facing challenges of the competitive world. This club enables the students to expedite the process of improving learning skills with more emphasis on LSRW. It trains the students in language skills, soft skills, interpersonal skills,

decision making, business communication, pre-placement training, corporate readiness etc., by conducting activities like –

1. Group discussions
2. Public speaking
3. Role plays
4. Debates

Recent Activities|:

A talk was organized on 10-04-13 on the topic, "Importance of communication skills in present scenario" . Mr. Deva Santhanam |Pillai was the resource person. A total of 165 students were registered in the club. At present this club is training 85 students with various activities.

Recently on the 6th of September 2013**,** debate and elocution competitions were conducted to I and II B.Tech Students. Mr. P. Ranjith Kumar and Mrs. N.V. Siva Kumari were the judges for these competitions. The winners were given prizes on 05-09-2013 on the occasion of teachers' day celebration.

This club is planning to organize a work shop on LSRW skills and employability skills in the month of November for all the I B.Tech students.

Anuvad Club

Translation Research Group is working for strengthening literary, language and cultural research works in the university. It established Trans cultural Research Centre and Anuvad Club. The TCRC is meant exclusively for faculty and research scholars in publications, books, presenting papers, writing for journals and so on. Whereas Anuvad Club is for both faculty, scholars and students to look after various translation works.

Dr.M.Latha, Associate professor of English and a member of TCRC published a book on African Women Writers. Dr.Mohanacharyulu, Associate professor of English and Head , TCRC has published poems in two books in translation. Anuvad Club encouraged the students by conducting poem and essay writing competitions during Independence and Teachers' Day celebrations. About 28 independent poems written by students and 8 translations from Indian languages to English are identified. The best performed students are being encouraged by giving prizes and certificates through university authorities.

TCRC and Anuvad Club march forward with a specific and strategic plan to reach its goal. Every Monday we conduct meetings to evaluate and analyze the works done in the week.

We sincerely work under the kind guidance of our HOD and other university authorizes to reach the aims and objectives of the Research G

Literature Research Group

Emerging Genres:

- Twenty first century literature
- Form and transformation, from novels to blogs.
- Electronic literature
- Areas of interest of the research group.
- Contemporary literary criticism
- Post-colonial literature
- New literatures
- Indian writings in English
- List of publications of the group :15

Literature Research Group of the Dept. of. English was organized officially on October 11, 2012 with ten faculty members. Since then it has been progressing in research activities. The center is exclusively for the academic achievements of the faculty. Students' club REFLECTIONS was formed on March 11, 2013. The main intention of the club is to extend the research oriented activities for the students enrolled in it. Activities like debates, group discussions, critical appreciation of poems and prose pieces, personality developmental programs , Management skills, mock interviews, case studies, mini and major programs, creative writing and so on. The club also intends to organize competitions like paper presentations, poster exhibitions, essay writing and creative writing. On the occasion of the teachers' day celebrations, REFLECTIONS has organized a panel discussion for students and staff on the topic **Dimensions, Equations, and Configurations of Education: Scopes and Consequences** on 5/9/2013.

Name of the club: Synthanalytica Club

The general educational objective of the Synthanalytica Club is the development of a fundamental understanding of the basic principles, concepts, models, and practices employed by chemists in characterizing the structure and behavior of matter. The Synthanalytica Club is an organization whose goal is to heighten the awareness of students and faculty to the rights, needs and responsibilities. The club was inspired by two factors. First, the doctoral shortage in sciences and disorders will require that students become interested and excited about research early in their career. Second, many undergraduate students want to learn more about and become more involved in research, but are not aware of how to pursue these interests. To meet these needs, department initiated this club in which students could explore their research interests in a stress-free and enjoyable manner. The search for knowledge through objective and systematic method of finding solution to a problem. The mission of the club was to increase undergraduate student's interest and appreciation in research. The club meets weekly to discuss student experiences and plan events that promote our mission. Some of the past events that we have presented are career programs for the campus community at large. For the future we are planning awareness programs. Although the club's focus is on issues related to the chemistry, we encourage all students and interested faculty to join us. So come see us and learn what equal access is all about.

Knowledge Engineering Research Club

Introduction

The Data Mining research group is started in the department of CSE in the year 2012 with a motto of inculcating research interests among the faculty and the research scholars in the field of Data Mining & Ware Housing and Knowledge Engineering Areas. At present, there are 18 faculty of CSE department have registered in this club as members out of which some of them are pursuing their PhDs in various Universities in the field of Data Mining and Ware Housing. The club is also open to the student community of CSE/IT, ECM and MCA departments and also to the students of M.Tech., program in the respective disciplines. There are 53 students present in the club.

Objectives

The main motto of this research group is to develop Innovative Applications of Information Retrieval and Data Mining and Data Security based applications". Other applications include E-education/E-learning, that is the warehousing and mining of data and processes specific to the scientific and education communities.

The club would like to work on the following important specific problems.

- Novel algorithms for identifying and extracting patterns from a large database
- Novel algorithms/model development to make data mining possible
- Data warehousing and integration with data mining processes and systems
- Data mining techniques for schema and database integration
- Visualization and presentation of patterns and discoveries
- Applications data mining and data warehousing include managing Web, E-commerce and biological databases.
- Would like to work on different types of data like: unstructured data, streaming data, image data, high-dimensional data, heterogeneous data, dynamic data, multi-resolution data, geo-spatial and temporal data, compressed data, graph-based data, encapsulated data with user -defined types.
- Building systems that work in real applications.

Activities:

1. Series of Lectures, demonstrations, workshops that make the student members gain knowledge, and develop ideas for doing the activities enlisted in the objectives.
2. Making a collective approach, in Professionalizing the Club, by enrolling its members in IEEE/ ASME etc type of Professional Bodies, which have a Sub-Body of Data Mining & Ware Housing and knowledge engineering areas.
3. Organizing National / International Level Competitions, Workshops, Conferences to give and share ideas in the said area.

4. Making utmost use of the spare timings available in the Time table, and using the same for doing such activities.
5. Developing a" Build and Learn " Workplace, with needful Manpower, Material and Technology, over a span of 3 years.
6. Collectively working for developing B.Tech / M.Tech / Research Projects, Proposals to R&D Agencies for possible funding.

Eligibility Criteria to Become a Member of DATA MINING Club :

1. Any B.Tech Graduating / Post Graduating Student preferably from CSE, ECM and
2. MCA departments having zeal and curiosity to take up this challenging activity.
3. Any faculty of Engineering College preferably from CSE, ECM and MCA departments, having the interest and zeal to assist and provide needful knowledge to the student members of this Club.

NANO RESEARCH CLUB

The Prime Objective of the Club is to make the students familiar with the emerging concepts of nano science and technology for engineering applications. As nanotechnology is highly inter-disciplinary, it provides a wide scope for research in all branches of science and engineering. All the UG and PG students are encouraged to participate in the ongoing innovative projects specially designed for them by the department of Physics.

Being a member of Nano Club, a student is expected to acquire hands on experience of development/synthesis of several nanomaterials for device applications with different morphologies such as nanoparticles, nanowires, porous nanostructures etc. Also the student members will be exposed to characterize the nanomaterial by using different spectroscopic and microscopic techniques such as XRD, UV-Visible –NIR, FTIR, SEM, and TG-DTA.

Nano Club will create awareness about the several applications of nano structured materials in the recent trends of research areas such as nano structured materials for energy devices, electronic and optoelectronic devices, and medicine i.e., Nano particle drug delivery systems. Student members are encouraged to participate or present their research papers in conferences, Seminars and symposia's. They will get an opportunity to work with renowned scientists and Govt. R&D research teams that are working on emerging fields of nano science and technology.

High performance Computing Research Club "IMMINENT COMPUTING CLUB"

The High Performance Computing Research group is started in the department of CSE in the year 2012, with a motto of inculcating research interests among the faculty and the research scholars in the field of Cloud Computing Parallel Processing and Grid Computing. To enhance

the organization of research related activities of the group, it is decided to form the High Performance Computing Research Club "IMMINENT COMPUTING CLUB".

At present, there are 7 faculty of CSE department have registered in this club members, out of which 4 members have already obtained their PhD degrees and remaining of them are pursuing their PhD in various Universities in the field of Cloud Computing and Parallel Processing. The club is also open to the student of CSE, ECM and MCA departments and also to the students of M.Tech., program in the respective disciplines.

Objectives

HPC Carry out Multidisciplinary research in reconfigurable, parallel, Distributed and Cloud computing as a basis for long-term Partnership and collaboration amongst industry, academia and Government.

The **IMMINENT COMPUTING CLUB** would like to work on the following important specific problems

- To Develop High Performance Computing tools.
- Hands on experience on cloud computing.
- To solve complex problems of Bio Informatics using HPC

Activities

1. Series of Lectures, demonstrations, workshops that make the student members gain knowledge, and develop ideas for doing the activities enlisted in the objectives.

2. Making a collective approach, in Professionalizing the club, by enrolling is members in IEEE/ASME etc. type of professional bodies, which have a Sub-Body of Cloud Computing and Parallel Processing areas.

3. Organizing National / International level competitions, workshops, conferences to give and share ideas in the said area.

4. Making utmost use of the spare timings available in the Time table, and using the same for doing such activities.

5. Developing a "Build and Learn" workplace, with needful manpower, material and technology, over a span of 3 years.

6. Collectively working for developing B.Tech / M.Tech /Research Projects, Proposals to R&D Agencies for possible funding.

S E A CLUB

SOFTWARE ENGINEERING ASSOCIATES CLUB

 SEA Club was launched in the month of April 2013 in KL University with an objective of promoting Software Engineering research activities like developing process models, performing coding, reliability, testing and ensuring quality of the products developed by students and faculty of the university. Students from the department will be leading this club and they take up the activities mentioned with the guidance from members of the research group.

To achieve the stated objectives the club has been dived into SIX wings, namely:

- PUBLICITY
- SOCIAL ASPECT
- RESEARCH DEVELOPMENT
- WORKSHOP
- WEB DEVELOPMENT
- APPLICATION DEVELOPMENT

After its inception the club has organized a Guest Lecture on Semantic Web in April 2013, a National workshop on Research Methodology in May 2013 and Social Service at Child Aid Foundation in July 2013.

The club is currently having 28 faculty & 58 student members headed by Chief Mentor Dr. K. Subrahmanyam, Professor & Research Group Head (Software Engineering).