KIET Group of Institutions

OFFICE ORDER: 19/2020
Formation of Students Club 'TechEdventure' for Virtual Lab Development

1. Development of Virtual Labs/Experimental learning is the need of the hour to **supplement the online teaching - learning process** so as to make it more effective as could clearly be perceived in today's context.

2. **TechEdventure - Students Club** for **Virtual Lab Development @ Institute level** is hereby constituted with an objective to *promote awareness about Virtual labs* and *gradually develop labs/experiments across various disciplines* which are not available on virtual labs platform thereby cater to the needs of students i.e. apprise/provide them a platform to access laboratory experiments online/ explore concepts and theories without stepping into a physical lab *till the time of normalcy* / to enable them to learn at their own pace.

3. **Dr. Sangeeta Arora, Associate Prof. (MCA)** is hereby designated as **Coordinator- TechEdventure - Students Club** for **Virtual Lab Development** *with immediate effect.*

4. A well-defined policy doc. covering the details *w.r.t.* objectives of the Club, its *structure and composition viz.* Coordinator, Co-Coordinators, departmental faculty Coordinators, Student Coordinators and student members their *roles & responsibilities*, student members - *selection procedure & criterion*, *roadmap/ targets* with tentative deadlines etc. is attached at **Appendix- A** for a thorough understanding/clarity. The **targets beyond 30 June 2021** would be decided in consultation with Coordinator-TechEdventure - Students Club & shall be issued separately by Dean A before the commencement of academic session each year.

5. The overall responsibility of running the club's activities smoothly @ department level shall be with departmental faculty Coordinators & respective HoDs. The entire team associated with the Club at **para 4** shall be **responsible to Coordinator** for their duties in their designated capacities. However, the overall implementation of the set targets in a phased manner shall be under the direct control and supervision of **Dean A** in close coordination with Coordinator & respective HoDs.

6. Dr. Sangeeta shall submit monthly progress *w.r.t.* Club's periodic progress/ planning etc. to Dean (A) on regular basis.

7. Dr. Sangeeta Arora shall be performing the above duties in addition to her regular academic engagement & will be **responsible to the Dean A** for this additional assignment.

Dr. (Col) A Garg
Director

Distribution:
- Joint Director/ Deans/ Principal-KSOP/ HoDs (CS/IT/EC/EN/EI/CE/ME/AS/MCA/MBA/HS/CS/CSIT), Addl. HoDs (CO/CSI), GM-TBI & Dean IEC, Head-CRPC, Head-CAM, Head-AEC, Head-IC, Addl. Head-IIPC, Chairperson-ICC, Head-IT Operations, Manager-IA, Head-HR, Registrar, Admin Officer, Accts Officer, Librarian, Purchase Officer, KIETians, Students

Copy to:
- Dr. Sangeeta Arora (MCA) - Coordinator, TechEdventure - Students Club
- Dean A - For its smooth implementation @ Institute level

TechEdventure - Students Club for Virtual Lab Development

INTRODUCTION: Experimental learning has played significant role in the education. Through experiment, student can apply their theoretical and conceptual knowledge. By learning through practical, students will have knowledge for life long. If student will apply their subject knowledge in experiment, then they will be skilled and help to get their job in easy way.

With the collaboration of National level institutes like IITs, NITs, IIITs, **Virtual Labs** are launched in February 2012 by MHRD under National Mission on Education through Information and Communication Technology (NMEICT) with the following objectives:

1. To provide remote access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars.

2. To enthuse students to conduct experiments by arousing their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.

3. To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations, and self-evaluation.

4. To share costly equipment and resources, which are otherwise available to limited number of users due to constraints on time and geographical distances.

OBJECTIVES:

The main objective of the **"TechEdventure"** Club is:

- To develop the labs & / or experiments which are not available on Virtual Labs platform.
- Mapping of existing virtual labs as available on AKTU Lucknow website https://aktu.ac.in/Virtual%20Lab.html.
- To organize activities for awareness of Virtual Labs.
- Encourage cross discipline lab experience
- Provide a channel between various department to make the development easier

SCOPE:

Strengthening of Virtual Lab - learning by doing environment- The club will be dedicated to supporting and development of the Virtual labs for various departments according to the AKTU scheme so that students should get 24x7 support. It will be only possible when all the departments come together and join their hands to work hard in this direction. Club will keep an eye on the development of the Virtual labs and provide a channel between the different departments so that with the help of each other, we will achieve success.

Provide the opportunity of Various Platforms- The club will also provide many advantages to the teacher. With virtual labs, teachers don't have to go to the lab at certain times and move from place to place to prepare the experiment. This saves plenty of effort and time- one of the most important goals of e-learning.

Guidance & Support- The club will be also providing guidance and support by connecting capable departments so that the faculty of various departments of our college will take the benefit, like if someone needs to develop the HTML code & or working on JAVA, visual C C++, the club will provide a channel between the two, so that hazards will be minimized for both the students and faculties.
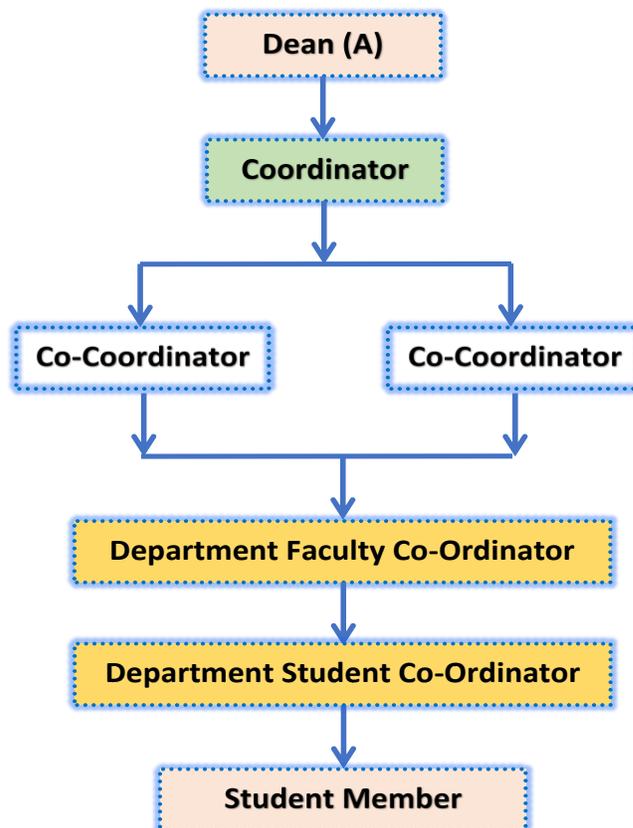
STRUCTURE OF THE CLUB:

TABLE: ORGANIZATION OF THE CLUB			
Appointment	**Name**	**Department**	
Chair	Dr. Anil Ahlawat	Dean(A)	
Coordinator	Dr. Sangeeta Arora	MCA	
Co-Coordinator	Dr. Abhishek Sharma	ECE	
Co-Coordinator	Dr. Ajeet Kumar Singh	EN	
Faculty Coordinator	Mr. Prashant Vashishtha	ME	
	Ms. Vineeta Pal	CE	
	Mr. Nitesh Bhardwaj	CE	
	Mr. Ashish Bajpai	CSE	
	Ms. Sakshi	IT	
Student Coordinator	Mr. Parth	ECE	III Year
	Mr. Aditya Shukla	ME	III Year
	Mr. Tushar Baranwal	CE	III Year
	Mr. Aditya Srivastava	EN	III Year
	Mr. Kartikeya Gupta	CSE	III Year
	Mr. Vaibhav Ji Srivastava	IT	III Year
Student Member*	Student members will be selected through a selection criterion (*Approx. 15)		

ROLES/ RESPONSIBILITIES

COORDINATOR:

- Coordinate overall Club activities in the institute
- Initiation of Developments of labs & monitor the activity till the completion of the Virtual lab
- Collaborate and Communicate with IIT, Delhi for development activities to provide support our education system on country level
- Organization of awareness programs for Virtual Labs so that faculty and students take maximum benefits of the Virtual lab
- Compile all activities related to Virtual Labs
- Monitoring overall club activities.

CO-COORDINATOR:

- To promote usage of Virtual Labs in Institute
- Planning for development of Virtual Labs at the Institute level
- Coordination and associate with faculties and students for the development of Labs
- Track & monitor the progress and growthEffective management of student team for an active participation in the development of virtual lab at college level.

DEPARTMENT FACULTY COORDINATOR:

- Identify the subject expert for the development
- Communicate with TechEdventure coordinator for various activity of virtual lab development of the respective department
- Provide the weekly report of the development of Virtual Lab at department level.
- Organize the activities of Virtual Labs at department level (1 in each semester).
- Promote the usage of Virtual Labs at departmental level.
- Motivate students for development at department level.

STUDENT COORDINATOR:

- The student should be enthusiastic to work in a team and follow the rules and guidelines of the Club.
- Help faculty Coordinators to organize the activities.
- Follow all the deadlines as per the requirement.
- Responsible for the communication between tech support (Student/ Faculty) and student team member.

STUDENT MEMBER:

- Responsible for the development of Virtual Labs.
- Prepare and submit the progress report to Student /Faculty Coordinator on weekly basis.

STUDENT MEMBER SELECTION PROCEDURE:

- New Candidates Screening should be followed by below rounds:

  Round 1: Coding/ Programming in HTML, CSS and JavaScript

  Round 2: Aptitude & reasoning test

  Round 3: Algorithms development test

  Round 4: Personal interview

- **The students already participated in e-BOOTATHON will be directly selected**.

STUDENT MEMBER SELECTION CRITERIA:

1. The student should be enthusiastic to work in a team and follow the rules and guidelines of the committee heads.
2. The student must have knowledge of website development and maintenance.
3. The student must have the knowledge of the computer server basics.
4. The student must be committed to finishing the assigned task by the committee in the given timeline.
5. The student should be regularly involved in the development of the virtual lab.
6. Hands-on experience in image/audio/video editing software.
7. Ability to work under pressure and meet deadlines.
8. Minimum 70% attendance is a must in the present academic year.
9. The student, from any department, must have the knowledge of specialized dedicated software used for the respective department.

Roadmap

Target Set

S.No.	Branch/Course	Number of Experiments Under Process	Number of Experiment to be Developed	Target Date
1	ME	3	5	Dec 2020
2	ECE	1	7	Dec 2020
3	EN	NIL	8	Dec 2020
4	CSE	NIL	8	June 2020
5	IT	NIL	8	June 2020
6	Civil Engineering	NIL	8	June 2020
7	Pharmacy	1	7	June 2020

Detail of Targets Under Process

S. No	Branch/ Course	Number of Experiments	Subject	Status
1	ME	2	HMT Lab (RME552)	Developed in e-Bootathon03
2	Pharmacy	1	Human Anatomy and Physiology Lab (BP107P)	Under Development in e-Bootathon04
3	ECE	1	Communication Engg, Lab (KEC451)	Under Development in e-Bootathon04
4	ME	1	HMT Lab (RME552)	Under Development in e-Bootathon04

Detail of Targets Achieved

S. No	Branch/ Course	Name of Experiments	Subject	Beta Hosted Link
1		Design and Analysis of Insertion Sort Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp1/
2		Design and Analysis of Quick Sort Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp2/
3		Design and Analysis of Counting Sort Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp3/
4		Design and Analysis of Improvised Bubble Sort Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp4/
5	MCA	Design and Analysis of Improvised Bubble Sort Algorithm	DAA (RCA352)	http://ebootathon.com/labs/beta/csit/DAA/exp5/
6		Design and Analysis of Improvised Bubble Sort Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp6/
7		Design and Analysis of Merge Sort Algorithm.		http://ebootathon.com/labs/beta/csit/DAA/exp7/
8		Design-and-Analysis-of-Radix-Sort-Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp8/
9		Design-and-Analysis-of-Binary-Search-Algorithm		http://ebootathon.com/labs/beta/csit/DAA/exp9/

Phase-I (July-Dec 2020) Targets

15-Sep-2020

- **Inception of Virtual Lab Club at KIET Group of Institutions Delhi-NCR-Ghaziabad**

20-Sep-2020

- **4 round selection of student member from all engineering departments**
  - Round 1: Coding/ Programming in HTML, CSS and JavaScript
  - Round 2: Aptitude & reasoning test
  - Round 3: Algorithms development test
  - Round 4: Personal interview

20-Sept-2020

- **Commencement of club activities (Phase 1)**
  - Development of 8 Experiments (ME, EC, EN, MCA)
  - Preparation of laboratory manual and other resources
  - Coding of static pages and dynamic pages
  - Daily monitoring of the progress
  - Weekly assessment

15-Dec-2020

- **Demonstration and testing by other faculty members of the department**
  - Feedback to be incorporated

31-Dec-2020

- **Completion of Phase 1: Expected Outcomes**
  - Communication with authorized regualtory body for Hosting of Developed Virtual labs

Phase-II (Jan-June 2021) Targets

1-Jan-2021

- **Initiation of activities to develop 1 lab from electrical engineering department**

15-Jan-2021

- **Commencement of club activities (Phase II)**
  - Development of 8 Experiments (CSE, IT, CE, Pharmacy)
  - Preparation of laboratory manual and other resources
  - Coding of static pages and dynamic pages
  - Daily monitoring of the progress
  - Weekly assessment

15-June-2021

- **Completion of Phase II: Expected Outcomes**
  - Demonstration and testing by other faculty members of the department
  - Feedback from participant will be incorporated

30-June-2021

- **Completion of Phase II: Expected Outcomes**
  - Communication with authorized regualtory body for Hosting of Developed Virtual labs