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IIT
Bombay

Proposal for Setting up eLSI Labs

Brief Overview of e-Yantra:

e-Yantra – a project in the Department of Computer Science and Engineering (CSE), IIT Bombay - is a flagship project of MoE through the National Mission on Education through ICT (NMEICT) to spread Embedded systems and Robotics education in colleges across India. e-Yantra Lab Setup Initiative (eLSI) is a holistic approach to

- Impart theoretical and programming knowledge
- Provide hands-on experience to teachers through an online Training
- Help colleges set up their own Robotics labs.

We have established robotics labs in **400+ colleges** across India. eLSI enables colleges to teach Robotics and embedded systems in an effective manner by **training teams of four (4) teachers and ten (10) students** from colleges in basic embedded systems theory and microcontroller programming. The teachers and students are trained to implement experiments through an online MOOC, over a period of 2-3 months. At the end of the training, the participants will be able to build embedded systems to solve practical problems.

In this model, colleges express their intent to participate in eLSI by nominating 4 teachers and 30 students (out of which e-Yantra shortlists 10 students based on a selection test) to be trained and creating an infrastructure - a robotics lab in their college by committing space and funds.

Once the college joins the eLSI community of colleges, they get access to other initiatives that benefit the students at large, such as the e-Yantra Innovation Challenge (eYIC), e-Yantra Farm Setup Initiative (eFSI), an opportunity for the teachers to network in the e-Yantra Symposium (eYS), to name a few.

We find that the colleges have appreciated this hands-on learning and have benefited immensely.



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Proposed Action:

We propose the following for all the colleges for training and Lab Setup process.

1. The equipment list is shared along with the proposal. All the colleges need to procure the equipment required for the lab set-up.
2. The equipment list consists of two parts:
 - a. Components to be procured: components approx. 1.5 lac INR to be procured by colleges following their due procedure
 - b. Training cost: 50,000 INR. Refer [“FAQ for eLSI”](#) for more details on payment.
3. **Training charges include following benefits to the colleges (for one year):**
 - a. One free robotic kit (if not given already in previous workshop)
 - b. Training of 4 faculty members & 10 students: Teachers and students selected for training will not be replaced with any other student or teacher. One year access to training portal to selected members
 - c. eLSI colleges will enjoy special pricing category for all value added courses/events for its students and teachers
 - d. Access to e-Yantra Resource Development Center (eYRDC) portal
 - e. Access to other initiatives such as e-Yantra Farm Setup Initiative (eFSI), e-Yantra Trainer Certification Program (eYTCP)
 - f. Eligibility to participate in advance teacher training programs
 - g. Colleges need to nominate 2-4 faculty members to be trained (New faculty members or the already trained faculties). The name is to be provided in the attached format named as [Letter of Intent \(LoI\)](#) on the college letterhead.
4. Online training materials will be provided to all the four teachers nominated by the colleges.
5. Along with the four faculty members, colleges may recommend upto 30 students who will be entitled for appearing in an e-Yantra Selection test.
6. e-Yantra will shortlist 10 students by an e-Yantra Selection test from these 30 nominated students who will also receive the training.
7. The training of both faculty and students is to ensure reliable transfer of knowhow and to help create a learning culture in the e-Yantra Lab we intend to set up at the college.

In summary, we have realized that all engineering college students are interested in embedded systems and robotics irrespective of their engineering disciplines.

We look forward to your college to establish eLSI labs and help your teachers & students to learn and implement hands-on projects that will enable them to be industry ready.

Looking forward to hearing from you,

Sincerely yours,
Prof. Kavi Arya