Sardar Patel Institute of Technology
(An Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (West), Mumbai-400058-India
Electronics Engineering Department
Electronics & Telecommunication Engineering Department

Subject: Analog Circuits ET205/EC205 SEM: IV Academic Year: 2021-22

Case Study: ISE Component

Purpose:

Evaluation of an individual student is an integral part of the academics to know how much is his/her involvement in the subject also it helps teacher to know which learner need more attention and who may be given the challenging task/tasks to be solved. Marks for the task completed should be taken positively by the learner and may not just do the task for the award of marks. Simple assignment work which does not require any creativity to solve does not help an individual student to learn the subject better. It is also important to know the rubrics of evaluation; the exact expectation of the evaluator for the assigned task. In online education; evaluation of such tasks becomes more challenging due to issues like one to one engagement of long duration. Working in a team is an integral part of an Engineering profession. Therefore; tasks need to be framed which take optimum duration to solve, should reflect creativity and experiential learning through teamwork who attempts it. If a learner pursue higher education or wish to do research in the same domain to which the course contents are aligned then these kind of tasks undertaken builds a confidence on his/her capacity. Further to work and execute it in his/her profession.

Case Study: Applications using Integrated Circuits:

Mapping: CO1 to CO6

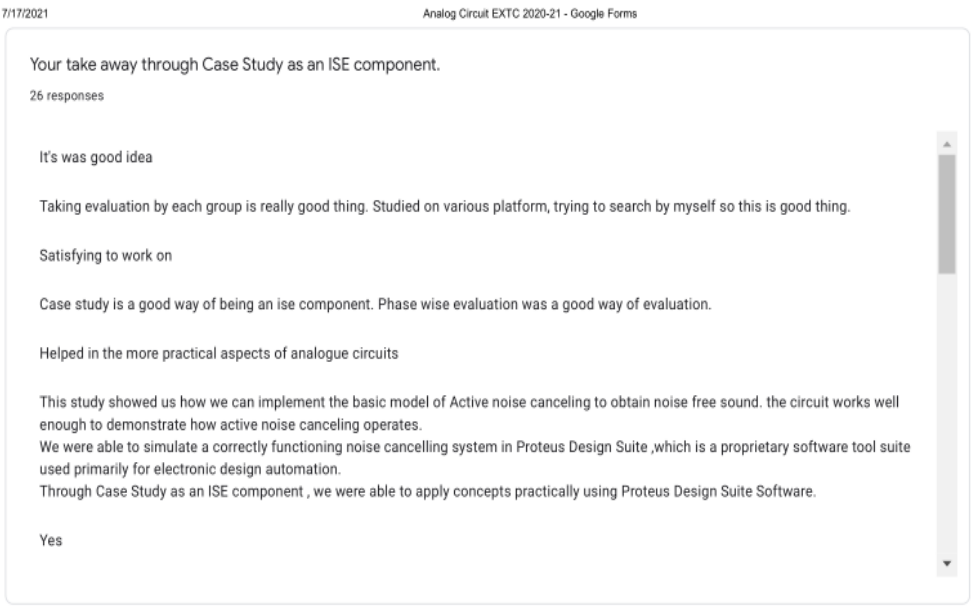
This is a group activity. Students will form a group of minimum 5 students. Each group will be given the problem statement from the case studies listed above but not limited to these. Students will develop the block diagram of the system first, then design each block using ICs and discrete components. Simulate the complete block diagram using any circuit simulator like TINA, Multisim or Proteus. The duration of this activity is a complete semester but evaluation will be done in Phases and rubrics designed as follows.

Phase I: In the first phase students will develop the block diagram for the given problem statement.

Phase II: In the second phase students will develop the circuit diagram and simulate each of the circuit diagrams and test it for input-output relationship.

Phase III: In the third phase students will interface all the designed circuits to obtain final input-output relationship of the system. Hardware implementation is optional.

Feedback:



Outcome:

The main objectives of conducting this activity was to motivate students to search for various ICs, read data sheets of ICs, interface various ICs and discrete circuits to realize an electronic system represented by a block diagram. As it is a group activity it helped students to also build team work spirit. Looking at the feedback it has also impacted on students' performance.