Electronic Circuit Simulation using eSim

Course Title	Electronic Circuit Simulation using eSim
Course Category	Pedagogy / Specialized Skills
Relevant Discipline(s)	Electronics Engineering/ Electrical Engineering/ Instrumentation / Industrial Engineering
Duration of course in equivalent integer no. of days (min 3 days, 1 day = 6 hrs of lectures/hands on sessions)	3 days 6 hrs of lectures/hands on session on each day
Proposed dates	11-13 February 2021

Brief Course Description and Course Contents

Electronic Circuit Simulation can be regarded as an important aspect of the undergraduate curriculum of Electronics Engineering/ Electrical Engineering/ Instrumentation Engineering disciplines. The aim of this workshop is to work out a methodology to teach these courses more effectively at the undergraduate level. Exposure to this basic skill is indispensable to researchers as well.

The focus of this workshop is to learn to effectively use eSim, a free and open source EDA(electronic design automation) tool. It is an alternative to commercial software, such as Pspice and ORCAD.

At the end of this workshop, participants will be able to:

- understand how to create circuit schematics
- understand what netlists are and how to analyse them
- simulate analog, digital as well as mixed-signal circuits
- learn the process of designing a printed circuit board(PCB)
- export the PCB design in various formats which are used for peer reviews and/or fabrication of the board
- create a model of a digital component using VHDL and simulate it

The workshop will be conducted using a mix of pre-recorded spoken tutorial videos with side by side learning and live lectures. A number of practice problems will also be provided after every topic followed by discussions on them to get a good understanding of each topic.

Participants will get the software, user manual, learning material, recordings of all lectures, and hundreds of circuits simulated using eSim. A tool to convert circuits in Pspice to eSim will also be made available to all participants. By making use of these resources, those who are interested in conducting eSim workshops by themselves, will be able to do so.

S. No.	Name of the Instructor	Department	Email
1.	Prof. Pramod Murali	Electrical Engineering	pramodm@iitb.ac.in
2.	Prof. Kannan Moudgalya	Chemical Engineering	kannan@iitb.ac.in

FOSSEE team members will help conduct the hands-on sessions.