

Note: This is a generic proposal for the eSim Workshop

Title of the Workshop:

Hands-On Workshop on Mixed Signal Circuit Simulation and PCB Design using eSim developed by FOSSEE, IIT Bombay

Overview of the Workshop:

This hands-on workshop introduces participants to eSim, a powerful open-source Electronic Design Automation (EDA) tool developed by the FOSSEE Project at IIT Bombay. The program is designed to provide practical training in electronic circuit design, simulation, and PCB development using a completely free and open-source software ecosystem.

Participants will learn the complete workflow of electronic system design — from schematic capture and circuit simulation to PCB layout and generation of manufacturing-ready outputs. Through guided demonstrations and structured exercises, attendees will gain hands-on experience in designing both analog and basic digital circuits, analyzing performance using SPICE-based simulation, and validating designs before hardware implementation.

Level of the Workshop: Basic to Moderate level

Who should attend?

UG students, PG students, PhD students and other electronics/electrical enthusiasts

Registration Link:

Feedback Link(to be shared after the workshop):

What do the participants learn?

- Overview of eSim and FOSSEE
- Fundamentals of Electronic Circuit Design
- Circuit Simulation using SPICE
- Mixed Signal Simulation
- Schematic Capture with eSim
- Open-Source EDA Ecosystem
- Activities under the eSim Team, FOSSEE
- How to contribute to FOSS Ecosystem and eSim Team

Date: TBA

Time: TBA

Venue: offline/online

About eSim:

eSim (previously known as Oscad / FreeEDA) is a free/libre and open-source EDA tool for circuit design, simulation, analysis, and PCB design. It is an integrated tool built using free/libre and open-source software such as [KiCad](#), [Ngspice](#), [GHDL](#), [OpenModelica](#), [Verilator](#), [Makerchip](#), and [SkyWater SKY130 PDK](#). eSim is released under [GNU General Public License](#).

To know more about eSim, please visit: <https://esim.fossee.in> .

About FOSSEE:

FOSSEE (Free/Libre and Open Source Software for Education) project

promotes the use of FLOSS tools in academia and research. The FOSSEE project is part of the National Mission on Education through Information and Communication Technology (ICT), Ministry of Education (MoE), Government of India. Below is the list of projects which are promoted by FOSSEE. To know more about FOSSEE, please visit: fossee.in .

Pre-requisites:

It is **mandatory to download and install eSim-2.5** and go through the listed materials beforehand. Please also bring your laptops with the software installed during the lecture sessions.

Resources:

- FOSSEE Website: <https://fossee.in/>
- eSim Homepage: <https://esim.fossee.in/>
- Download eSim-2.5: <https://esim.fossee.in/downloads>
- eSim Installation Instructions:
<https://github.com/FOSSEE/eSim/blob/master/INSTALL>
- eSim Manual: [eSim Manual 2.5 \(PDF\)](#)
- Additional Resources: <https://esim.fossee.in/resources>
- Spoken Tutorial Videos:
https://spoken-tutorial.org/tutorial-search/?search_foss=eSim&search_language=English

If you have any doubts, queries, or face any installation issues, please feel free to reach out here.

Keep promoting FLOSS, keep empowering communities!!!

