The iLab Project

Welcome to the iLab Project!

The iLab Project is dedicated to the proposition that online laboratories - real laboratories accessed through the Internet - can enrich science and engineering education by greatly expanding the range of experiments that the students are exposed to in the course of their education. Unlike conventional laboratories, iLabs can be shared across a university or across the world. The iLabs vision is to share lab experiments as broadly as possible within higher education and beyond. The ultimate goal of the iLabs project is to create a rich set of experiment resources that make it easier for faculty members around the world to share their labs over the Internet.

iLabs harness the Internet and enable students to use real instruments via remote online laboratories. Conducting experiments motivates students; it also causes them to learn more effectively. Experiments allow a student to compare reality with simulations, collaborate with each other, and follow their curiosity. Yet, significant expense, space and safety considerations prevent many engineering classes from including lab components. By providing online access to remote laboratories, MIT is delivering the educational benefits of hands-on experimentation both to our own students and to students anywhere, at any time.

The iLabs Project is developing a suite of software tools that makes it easier to bring online and manage complex laboratory experiments. The iLab Shared Architecture (ISA) is a robust, scalable, open-source infrastructure built on web service that has been developed to provide a unifying software framework that can support access to a wide variety of online laboratories. Users and the online laboratories can be globally distributed across an arbitrary number of locations linked only by the Internet. Users access these remote laboratories through single sign-on and a simple standard administrative interface.
The iLabs Shared Architecture has the following design goals:

- Minimize development and management effort for users and providers of remote labs
- Provide a common set of services and development tools.
- Scale to large numbers of users worldwide
- Allow multiple universities with diverse network infrastructures to share access

**Getting Started**

- [Learn more about iLabs](#)
- [Explore the available iLabs](#)
- [Learn about the iLabs Architecture](#)
- [Collaborate with other educators](#)
- [Create an account and run a microelectronics iLab experiment](#)