



Issue 41

Moving your course online? nanoHUB can help with lectures and virtual labs

As the outbreak of COVID-19 pushes universities to adapt quickly for online course delivery, current learning management systems can be stressed and overloaded. [nanoHUB.org](https://nanohub.org) is here to:

- help you deploy your course materials online,
- supplement your curriculum with our existing courses and lecture videos, and
- enable students to explore [interactive simulations like a virtual class lab](#).

nanoHUB reaches 1.6 million visitors annually and isn't limited to the area of nanotechnology. nanoHUB has supported many fundamental courses in Electrical Engineering (electronics and E&M/photonics), Materials Science and Engineering, Mechanical Engineering, Chemical Engineering, Physics, Chemistry, and Bioengineering.

All of these 6,000+ resources are available at no cost to instructors, classrooms, or individual learners. Below you can find more details on the various services.

Please let us know through email or our [Help/Support link](#) if you have any questions or concerns. We hope we can provide you with some needed help in the rush toward online learning.

-- the nanoHUB Team

Ready to use resources and virtual labs for your area

Our curated pages highlight quality material for specific communities:

- Nanoelectronics: <https://nanohub.org/groups/nanoelectronics>
- Materials Science and Engineering: <https://nanohub.org/groups/materials>
- Semiconductor Device Physics: <https://nanohub.org/groups/semiconductors>
- Data Science and Machine Learning: <https://nanohub.org/groups/ml>
- Chemistry: <https://nanohub.org/groups/chem>
- and more: <https://nanohub.org/groups/education>

Groups

Create a nanoHUB discussion group for your classroom: <https://nanohub.org/groups/new>

Lecture Deployment

The NCN video production team is available to assist in recording lectures for online delivery. Contact Joe Cychosz, Production Manager at nanoHUB (3ksnn64@ecn.purdue.edu) for details.

Preparing Online Lecture Material

- Record narration and timings for your Powerpoint presentation: [\[instructions\]](#)
- Here is an [example of a recorded presentation](#)
- Export your presentation as an .mp4 file
- Edit your Powerpoint video recordings: [\[instructions\]](#)

These lectures are then ready to be [uploaded to nanoHUB](#).

Instructions on publishing resources on nanoHUB: <https://nanohub.org/kb/tips/how-to-publish-a-resource-on-nanohub>

Insert Virtual Lab explorations into your existing course:

nanoHUB hosts over 500 simulation apps that are self-contained and easy to use. We have assembled sets of these apps for immediate insertion into existing curricula like:

- ABACUS - Assembly of Basic Applications for Coordinated Understanding of Semiconductors: <https://nanohub.org/resources/abacus>
- AQME - Advancing Quantum Mechanics for Engineers: <https://nanohub.org/resources/aqme>
- ANTSTY - Assembly for Nanotechnology Survey Courses: <https://nanohub.org/resources/antsty>

You can [search nanoHUB](#) for specific topics that fit your curriculum. There are several complete science and engineering courses published from which you can select individual lectures.

Find Course Material

You may navigate to “[Learn & Teach](#)” on nanoHUB to view find a large variety of lecture materials and simulation tools that you can immediately use.

[Curated Educational Resources](#) to find graduate-level courses by topic. Some courses appropriate for undergraduates follow:

General

- [nanoHUB-U: The Science, Art, and Practice of Analyzing Experimental Data and Designing Experiments](#)
- [Numerical Methods for Partial Differential Equations](#)

BioEngineering

- [nanoHUB-U: Biological Engineering - Cellular Design Principles](#)

Electrical Engineering

- [nanoHUB-U: Primer on Semiconductor Fundamentals](#)
- [Principles of Semiconductor Devices](#)
- [ABACUS - Assembly of Basic Applications for Coordinated Understanding of Semiconductors](#)

Quantum Mechanics

- [AQME - Advancing Quantum Mechanics for Engineers](#)

Materials Science and Engineering

- [MSEN 201: Introduction to Materials Science & Engineering](#)
- [Illinois MATSE 280: Introduction to Engineering Materials](#)

Physics

- [Physics 342: Modern Physics](#)

Nanotechnology

- [Nano 101](#)
- [NACK Unit 3: Materials in Nanotechnology](#)
- [NACK Unit 5: Nanotechnology Applications](#)
- [NACK Unit 6: Basic Characterization Techniques](#)

Questions

If you need help, we'd be glad to speak with you. Please write to us at contact@nanohub.org.

How can you support nanoHUB? Check out our [donation page](#) to learn more.

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