Distance Learning Tools

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Modern digital technology offer a long range of tools to improve/change our life..

.. this includes how we teach!
Modern Teaching

.. needs digital content and methods:

- **Internet** to find information..
- **Computers and on-line applications** to do things “the modern way”..
- **Digital “social networks”** to communicate..
Good teaching is *not guaranteed* by applying E-learning tools..

.. we have to do it based on good pedagogical principles and methods!

In the end, our students’ *learning outcome* defines the teaching quality!
Part of the CINCH project has been to **develop modern e-learning tools.**
## CINCH E-learning tools

- Wiki for sharing teaching material: **NucWik**
- Stand alone e-learning modules: **CINCH Moodle Platform**
- Remote controlled lab exercises: **RoboLab**
- Computing in Science Education: **CSE – A UiO concept**
- Simulations
- E-book on NRC fundamentals: *Written by Jukka Lehto*
Site for Sharing Teaching Material

NucWik:
- No reading or downloading restrictions.
- Must register to upload material or edit content.
- It’s free!

http://nucwik.wikispaces.com/
.. or just Google "NucWik"
Understand this ..

● NucWik is not a ready made, polished product in its final form.

● It is primarily a tool for active collaboration between teachers.

● You want it better? Then make it so!

● It can be used in many ways, most likely in ways not initially planned for.

It’s up to you!
NucWik Main Pages:

- Laboratory Exercises
- Calculation Exercises
- RoboLab Exercises
- CSE Exercises
- Simulations
- Textbook and compendia

Find Topics:

- Tag list
- NRC Topic List

Welcome to NucWik!

Welcome to the NucWik site for teaching material for Nuclear and Radiochemistry. Everybody is welcome to use this wiki, but it’s primarily aimed at teaching at Universities. At NucWik you will find ready made texts, explanations, illustrations, calculation exercises, laboratory exercises, etc. to help you in teaching Nuclear and Radiochemistry (NRC). As it is a wiki, we also hope that you will help us to develop even more and better material!

This Wiki is open access, but if you want to contribute you must register as a user (it’s free and we will not distribute your e-mail address to others). We strongly urge you to contribute, the usefulness and quality of NucWik depend on as many people as possible contribute - help yourself and us to enhance the quality of our teaching!

NucWik was created as part of the CINCH EU-project for evaluating and planning nuclear and radiochemistry teaching in Europe. Please refer to the CINCH web-pages at: http://cinch-project.eu/index.php for details about this project.
Visitors are counted as unique IP addresses in a given day, including search engines and other crawlers.

About 45 hits per day .. about half from the US
What is RoboLab?

RoboLab is remote-controlled exercises in a real radiochemistry laboratory. It allows you to perform radiochemistry experiments with real equipment in an actual laboratory without all the hassle of being trained, authorized and suited up. It's main purpose is to be used as a complementary teaching tool when teaching radiochemistry to undergraduate and graduate students at university level. This NucWik page explains teachers how to use it. It also provide information on how to build RoboLab remote controlled instruments (“virtual instruments”) using LabView from National Instruments.
RoboLab Principle

A real nuclear laboratory using radioactive material

Student using the lab through his computer

\[ A(\tau) = \sigma \theta N_T (1 - e^{-\lambda \tau}) \]
Available Exercises (per December 2015)

- RL1: Absorption of radiation in matter (UiO, online)
- RL2: RoboLab Exercise: n-activation of Ag (UiO, online)
- RL3: HPGe y-spectroscopy of environmental samples (IRS, online)
- RL4: Autodeposition on different metals (IRS, online)
- RL5: Ion exchange column with "on-line" detection (IRS, online)
- RL6: Separation and detection of 234mPa (UiO, under development)

List is accessible from the main menu on NucWik
Acknowledgements

- RoboLab was conceived at UiO in 2002. Six RoboLab exercises have been developed under CINCH-II as a collaboration between the Nuclear Chemistry Group at the University of Oslo and the Institute for Radioecology and Radiation Protection at Leibniz University in Hannover.
- NucWik was developed by UiO as part of the CINCH projects.
- Key CINCH RoboLab contributors: J.P. Omtvedt (UiO), C. Walter (IRS), S. Bister (IRS), C. Fournier (IRS), Kim-Leigh Gabay (IRS), T. Grønås (UiO), P. Hanemann (IRS), M. Icker (IRS), H.L. Lerum (UiO), J.Ø. Matsdal (UiO), W. Schulz (IRS), J.-W. Vahlbruch (IRS).
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Thank You for Your Attention!

Please explore our e-tools at NucWik!

http://nucwik.wikispaces.com/
.. or just Google "NucWik"

CINCH project site:
http://cinch-project.eu/

Want to contribute or have questions?
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