

# Neutron Fundamentals 2014

---

## Goal:

To investigate the workings of various neutron detectors and/or sources of free neutrons.

## Method:

Groups of 2 will research one particular type of neutron detector or free-neutron source and prepare a short report (maximum 10 pages including figures, URKUND!) and a short presentation (10 minutes + 5 for questions) presenting a concise overview of the subject they have chosen.

## Timeline:

- 2014-05-06: This presentation.
- 2014-05-06: Choice of groups and choice of neutron detector or source to be completed and details emailed to [kevin.fissum@nuclear.lu.se](mailto:kevin.fissum@nuclear.lu.se) by 23:59.
- 2014-05-15: Presentations begin at 10:15 in B113.
- 2014-05-23: Reports by 23:59. Submit via email (.pdf) as above.

Possible Project Topics (not exhaustive):

---

<b>Detector type</b>	<b>neutrons</b>	<b>type</b>
<b>B based</b>	slow	reaction
<b>He based</b>	slow	reaction
<b>Li based</b>	slow	reaction
<b>fission based</b>	slow	reaction
<b>scintillator-based</b>	fast	scattering
<b>dosimeters</b>	all	
<b>hybrid</b>	all	
<b>other (check first)</b>		

---

---

**Source type**

**Be-based / SF sources**

**dd/dt generators**

**spallation**

**other (check first)**

---

**Report Guidelines:**

Pay particular attention to the following (if applicable):

1. Historical overview
2. Underlying physical concepts
3. Practical details and applications / uses
4. Operational details and advantages / disadvantages
5. Comparison to reactors as neutron sources
6. Additional comments