

## Need-to-know nuclear physics for FYS4580

### Binding energy, semi-empirical binding energy formula, neutron separation energy, pairing

-> Krane pages 65 - 70

-> Make sure you understand Fig. 3.16! (Will be important)

-> Semi-empirical binding energy formula will come back to haunt you (so better read about it now)

### Shell model and magic numbers

-> Krane pages 117 - 121

### Radioactive decay

-> Krane 160 - 164

### Chart of nuclei

-> Look at <https://www.nndc.bnl.gov/nudat3/> and get familiar with the layout of the nuclear chart :  
N (neutron number) along x-axis, Z (proton nr) along y axis...

### Excitation energy and level scheme

-> Nucleus can be found in ground state or it can be excited

-> Krane pages 75-76

-> Have seen a nuclear level scheme, like for example:

