

FYS3410, Spring 2009, final examination

The examination is oral and with external censorship. You will draw a question among those questions given in advance, and you will then have 30 minutes preparation time. The examination will take approximately 30 minutes. During the first 15 minutes of the examination you present your answer to the question which you have drawn; in the next about 10-12 minutes you will be asked general questions related to the contents of the course; the rest of the time is for internal discussion of your performance. Altogether your presence is required for approximately 1 hour (please choose an appropriate slot of time from those suggested below). The place for the examination is going to be decided and announced in the nearest future.

Note that 15 minutes is not a lot of time for making a presentation - you will have to be selective and you will also be evaluated on how well you have selected relevant materials. Try to avoid the use of written notes during the examination - an excessive use of notes will be used against you.

Schedule for the final oral examination in FYS3410, spring 2009

28/5/2009

08.00-08.30	Per Lindberg perfli@student.matnat.uio.no
08.30-09.00	

08.30-09.00	Siri Kallhovd sirikall@student.matnat.uio.no
09.00-09.30	

09.00-09.30	David Skålid Amundsen davidsam@student.matnat.uio.no
09.30-10.00	

09.30-10.00	Timothy Craig Buchhorn timothcb@student.matnat.uio.no
10.00-10.30	

10.00-10.30	Emil C. Huster emilch@online.no
10.30-11.00	

10.30-11.00	Camila Kirkemo camilki@student.matnat.uio.no
11.00-11.30	

11.00-11.30	Henry James Wold henryjw@student.matnat.uio.no
11.30-12.00	

12.30-13.00	Elvira Mulyukova elviram@student.matnat.uio.no
13.00-13.30	

13.00-13.30	Frode Kløw frodeklo@student.matnat.uio.no
13.30-14.00	

13.30-14.00	Ola Taarud Rømoen o.t.romoen@fys.uio.no
14.00-14.30	

14.00-14.30	Ida Drøsdal idand@student.matnat.uio.no
14.30-15.00	

14.30-15.00	Pål Tobiassen paaltob@student.matnat.uio.no
15.00-15.30	

15.00-15.30	Kjetil Thøgersen kjettho@student.matnat.uio.no
15.30-16.00	

15.30-16.00	Eivind Bardalen eivinbar@student.matnat.uio.no
16.00-16.30	

16.00-16.30	
16.30-17.00	

Questions for the FYS 3410 examination, Spring 2009

Reciprocal lattice; concept and its use in understanding of x-ray diffraction and energy bands

Structural defects and atomic diffusion in crystals

Crystal vibrations

Phonon heat capacity

Free electron gas in 1- and 3-dimensions

Thermal and electrical properties explained in terms of FEG; comparison with experiments and limitations.

Energy bands, nearly free electron model, Kronig-Penney model.

Effective mass approximation and its application for understanding “hydrogen-like” impurities in semiconductors

Intrinsic and extrinsic carrier generation in semiconductors

p-n junctions

Zone schemes and Fermi surfaces