

## Schedule for courses at NTNU NanoLab September – November 2011

All applications for courses must be sent via e-mail to [nanolab@ntnu.no](mailto:nanolab@ntnu.no) **at least five working days (one week) before the course starts**. The **subject of the mail** should be “**training request for <instrument name>**” to assure that the automated system is distributing it to the correct engineer and to speed up the evaluation process. This means that training request for several courses must be sent for each course separately. All applicants will be informed if they can participate and about starting times and meeting places for the courses after the application deadline.

Due to limited capacities it may be possible that we don't have a place for all applicants in the announced courses. The decision if one can participate is based on individual evaluation of each project's need. All users requesting training for a certain **instrument** must answer the following questions. Please give short but clear answers. Please **DO NOT** send an abstract of your research project.

- What do you intend to do with the instrument you request training for?
- What kind of material/samples are you working on? Do these materials/samples have special properties that might make it difficult to handle or measure the sample (e.g. non-conducting samples for SEM work, investigations of full 4 inch wafers etc. pp.)
- Do you have previous experience with such instruments/processes? If yes, how would you describe your level of experience? How often and for how long have you used such techniques/instruments before?
- How often do you intend to use the instrument in question inside NanoLab (!) in the near future (e.g. once a week, once a month, in the range of every third month)?
- How long will your project at this instrument last (e.g. 1 month, 1/2 year, 3 years). When will your work at this instrument start (e.g. directly after training, in 3 month, next semester etc.)
- Do you already have an activity in NTNU NanoLab? If yes, what is your activity number?
- Have you taken the cleanroom introduction and HSE course?

Please send the answers in the same email as the request for training.

Due to our limited training capacities the following applies: for the training sessions announced here, users of NTNU NanoLab who already have or who intend to have an activity in the very near future at the instrument in question will be prioritized. Additional courses on a short time basis will be arranged if there are many more people who apply for a certain course than there are places available.

### ***Cleanroom introduction and HSE course***

Date: 30<sup>th</sup> of august, 27<sup>th</sup> of september, 25<sup>th</sup> of october

Available places: 10

Comment: This course is **mandatory** for all users of NTNU NanoLab prior entering the cleanroom without supervision.

### ***General introduction course for the lithography area***

Date: 31<sup>st</sup> of august, 28<sup>th</sup> of september, 26<sup>th</sup> of october

Available places: 12

Comment: This course is **mandatory** for all users who want to work in the lithography area.

### ***General photolithography course***

Date: 7<sup>th</sup> of september, 5<sup>th</sup> of october, 2<sup>nd</sup> of november

Available places: 6

Comments: On the basis of a simple process, this course will show very general what photolithography means and what it can be used for. It is for those who have no previous experience with lithography processes, and is not mandatory. This is **NOT** a chemical introduction course!

### ***HF-course***

Date: 5<sup>th</sup> of september, 3<sup>rd</sup> + 31<sup>st</sup> of october,

Available places: 5

Comment: This course is **mandatory** for all users who want to work with HF.

### ***Mask aligner MA56***

Date: 9<sup>th</sup> of september, 7<sup>th</sup> of october, 4<sup>th</sup> of november

Available places: 6

### ***Ultracentrifuge***

Date: 7<sup>th</sup> of september, 5<sup>th</sup> of october, 2<sup>nd</sup> of november

Available places: 3

### ***RTP***

Date: 1<sup>st</sup> + 29<sup>th</sup> of september, 27<sup>th</sup> of october

Available places: 3

### ***NanoSight***

Date: 7<sup>th</sup> of september, 5<sup>th</sup> of october, 2<sup>nd</sup> of november

Available places: 3

### ***Particle Size Analyser***

Date: 7<sup>th</sup> of september, 5<sup>th</sup> of october, 2<sup>nd</sup> of november

Available places: 3

### ***EBL***

Comment: for the time being we can't offer EBL courses! Please contact us nonetheless, because in urgent cases we try to find individual solutions until we can offer scheduled EBL training again.

***PECVD***

Date: 2<sup>nd</sup> + 30<sup>th</sup> of september, 28<sup>th</sup> of october  
Available places: 4

***RIE / ICP-RIE***

Date: 13<sup>th</sup> of september, 11<sup>th</sup> of october, 8<sup>th</sup> of november  
Available places: 3

***E-beam evaporator***

Date: 12<sup>th</sup> of september, 10<sup>th</sup> of october, 7<sup>th</sup> of november  
Available places: 4

***Veeco AFM***

Date: 8<sup>th</sup> of september, 13<sup>th</sup> of october, 10<sup>th</sup> of november  
Available places: 2

***NanoSurf AFM/STM***

Date: 7<sup>th</sup> of september, 12<sup>th</sup> of october, 9<sup>th</sup> of november  
Available places: 2

***NanoSurf with FlexAFM function***

Date: 21<sup>st</sup> of september, 19<sup>th</sup> of october, 16<sup>th</sup> of november  
Available places: 3

Comment: Users who want to participate in this course must have undergone the basic training for these instruments before.

***S(T)EM***

Date (theoretical introductions): 12<sup>th</sup> of september, 7<sup>th</sup> of november

Date (practical sessions): 13<sup>th</sup> + 14<sup>th</sup> of september, 8<sup>th</sup> + 9<sup>th</sup> of november

Available places: 2 (for each practical session)

Comment: Participation in the theoretical introduction course is mandatory for participation in the practical “hands-on” training.

***FIB***

Date (theoretical introduction): 10<sup>th</sup> of october

Date (practical sessions): 11<sup>th</sup> and 12<sup>th</sup> of october

Available places: 2 (for each practical session)

Comment: Participation in the theoretical introduction is mandatory for participation in the practical “hands-on” training.

***Small Sputterer/Evaporator***

Date: 14<sup>th</sup> of september, 12<sup>th</sup> of october, 9<sup>th</sup> of november  
Available places: 4

***Microwave-oven***

Date: 20<sup>st</sup> of september, 18<sup>th</sup> of october, 17<sup>th</sup> of november  
Available places: 4

For the following instruments we will provide “training on demand”. If you can't find the instrument in question in this list it DOES NOT mean that this instrument doesn't require training or at least a short introduction before use (even not if short user manuals can be found at the machine). Always ask an engineer whether a certain instrument needs training or not!

- *Plasma cleaner*
- *Profilometer*
- *Table top SEM*
- *Mask aligner in student area*
- *Wafer saw*
- *Scriber*
- *UV/Ozone-cleaner*
- *Autoclave*
- *Tabletop centrifuge*
- *Dip coater*
- *Electrophoreses*
- *Ovens*
- *Scales*
- *LAF benches*
- *pH-meter*
- *Spin coater*
- *Ultrasonic baths*
- *Ultrasonic probes*
- *Glove boxes*
- *SPR*
- *Microscopes (fluorescence, DIC, stereo, etc)*
- *SEM sample preparation sputterer*
- *Wire-bonder*
- *PCs/software*
- *other (small) NanoLab equipment you need training for*