

SCHEDULE 170828, Methods in Molecular Biology BIOR79

28 Aug. - 27 Oct., 2017

For latest update on schedule etc, always check [Live@Lund!](#)

Department of Biology, Lund University

Welcome to the course BIOR79 Methods in Molecular Biology! We look forward to see you! The course begins with a mandatory introductory meeting on August 28th at 13.00 in the Red Room in the Ecology House, Sölvegatan 37. During the course, you will get the possibility to become acquainted with molecular principles and mechanisms underlying the experimental approaches. The actual content is updated every year to accommodate the most recent methods. You will also have opportunity to practice several of these methods during laboratory work. In addition, you will train on how to design relevant experiments to address a biological question, and how to critically evaluate experimental data. As a complement to the "wet labs", bioinformatic exercises will be performed during several computer labs.

Course leader, incl contact details: Carin Jarl-Sunesson (CJS), carin.jarl-sunesson@biol.lu.se, 046-2220124

Other Teachers: (WK) Wolfgang.Knecht@biol.lu.se, (AR) Allan.Rasmusson@biol.lu.se, (CvW) Claes.von_Wachenfeldt@biol.lu.se, (KF) Klas.Flardh@biol.lu.se, (MC) Marita.Cohn@biol.lu.se, (ZF) Zoe.Fisher@biol.lu.se, (CI) Caroline.Isaksson@biol.lu.se, (AB) Anja Broeders;
Course assistants: Katarina.Koruza@biol.lu.se, david.stuart.857@student.lu.se, Shakira.Zakhrabekova@biol.lu.se

Location: Biology House and Ecology House, Sölvegatan 35/37, Lund

Teaching activities: Lecture, Tutorials and Supervision, Laboratory work, Project), and Independent studies

Compulsory activities on this course are marked with C: If you are absent from a compulsory activity without a valid reason you are not guaranteed to complete this part until the next time the course is offered. A valid reason is e.g. that you are ill, but not that you are travelling!

Literature: Practical Skills in Biomolecular Science, 5th ed, Reed, Weyers & Jones, Pearson, 2016. Also available as eBook.

[Before the introduction meeting you should read the documents "House information and Safety Regulations" and "Plagiarism and Cheating policy"](#)

[You can also read about Student rights and guidelines](#)

[Learning platform Live@Lund](#)

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w35	Mon 2017-08-28				
	13:00 - 14:30	Compulsory, Introduction	BCE: Röda rummet	Carin Jarl- Sunesson	Introduction. Compulsory
	14:30 - 15:30	Compulsory, Project	BCE: Röda rummet	Wolfgang Knecht	Introduction to project. Compulsory
	Tue 2017-08-29				
	10:00 - 12:00	Lecture	BCE:G111 Ängen	Claes von Wachenfeldt	Nucleic acids: structure and properties
	13:00 - 14:00	Compulsory, Supervision/ Tutorial	BCB:A213 Hörsal	Caroline Isaksson	Tut: Writing laboratory reports. Compulsory.
	14:00 - 15:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Introduction to Lab, Safety Group A+B. Compulsory.
	15:00 - 16:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Introduction to Lab, Safety Group C+D. Compulsory.
	Wed 2017-08-30				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Claes von Wachenfeldt	Basic genetic engineering techniques
	13:00 - 14:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Pipetting Drivers licence, Group C+D. Compulsory.
	14:30 - 16:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Pipetting Drivers licence, Group A+B. Compulsory.
	Thu 2017-08-31				
	10:00 - 12:00	Lecture	BCB:A261b Föreläsningssa l	Claes von Wachenfeldt	Basic and spectroscopic properties of proteins
	13:00 - 14:00	Information			General information, compulsory for all new studentes. Location: Hörsal, Biology building
	14:00 - 15:30	Information			Meet your programme coordinator and general information, compulsory for all new Master´s students. Location will be announce by mail
	Fri 2017-09-01				
	09:00 - 16:00	Self-study			Self studies
w36	Mon 2017-09-04				
	08:30 - 09:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Mutagenesis, purification and analysis of GFP Group: A+B. Compulsory.
	09:30 - 10:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Mutagenesis, purification and analysis of GFP Group: C+D. Compulsory.
	11:00 - 14:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Mutagenesis, purification and analysis of GFP Group: A+B
	14:30 - 18:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Mutagenesis of GFP, purification and analysis Group: C+D. Compulsory.

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w36	Tue 2017-09-05				
	10:00 - 12:00	Lecture	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	PCR and methods for creating mutations
	13:00 - 14:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: C+D.Compulsory.
	15:00 - 16:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: A+B. Compulsory.
	Wed 2017-09-06				
	08:30 - 10:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group A. Compulsory.
	10:00 - 11:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group B. Compulsory.
	12:30 - 14:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group C. Compulsory.
	14:00 - 15:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group D. Compulsory.
	16:45 - 17:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Deadline Intro. Lab I
	Thu 2017-09-07				
	09:00 - 10:30	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group C+D. Compulsory.
	10:30 - 12:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group A+B. Compulsory.
	13:00 - 14:15	Information		Kristina Arnebrant	Lecture: Library inforamtion. Compulsory for all new students. Location: Hörsal, Biology building
	14:15 - 15:00	Information		Carin Jarl Sunesson	Lecture: Cheating and plagiarism. Compulsory for all new students. Location: Hörsal, Biology building
	Fri 2017-09-08				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Klas Flärdh	Genetic engineering based on recombination
	13:00 - 14:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group A+B. Compulsory.
	14:00 - 15:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group C+D. Compulsory.
w37	Mon 2017-09-11				
	08:00 - 10:00	Lecture	BCB:A213 Hörsal	Claes von Wachenfeldt	Immunological techniques
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Claes von Wachenfeldt	Genome sequencing and sequence analysis I

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w37	Mon 2017-09-11				
	13:00 - 14:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut: Calculations Groups C+D. Compulsory. Location: computer room.
	14:00 - 15:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut: Calculations Groups A+B. Compulsory. Location: computer room.
	Tue 2017-09-12				
	08:30 - 17:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group A+B. Compulsory.
	Wed 2017-09-13				
	08:30 - 17:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group C+D. Compulsory.
	Thu 2017-09-14				
	08:00 - 10:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group A+B. Compulsory.
	10:00 - 12:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab I: Group C+D
	10:00 - 11:30	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut GFP group A
	13:00 - 15:00	Lecture		Jep Agrell	Scientific writing. Location: Hörsal, Biology building
	Fri 2017-09-15				
	08:30 - 10:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut GFP group B
	10:00 - 12:00	Lecture	BCE: Röda rummet	Claes von Wachenfeldt	Genome sequencing and sequence analysis II
	13:00 - 14:30	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut: Bioinformatics of GFP Group C. Compulsory. Location: computer room.
	14:30 - 16:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut: Bioinformatics of GFP Group D. Compulsory. Location: computer room.
w38	Mon 2017-09-18				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Wolfgang Knecht	Protein purification - overview
	13:00 - 16:00	Consultation	BCB:A213 Hörsal	Carin Jarl- Sunesson	Final writing of Report Lab1, consultation
	Tue 2017-09-19				
	13:00 - 14:30	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut: Bioinformatics of GFP Group A. Compulsory. Location: computer room.
	14:30 - 16:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Tut: Bioinformatics of GFP Group B. Compulsory. Location: computer room.
	16:45 - 17:00	Compulsory, Deadline			Deadline Report Lab I

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w38	Wed 2017-09-20				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Claes von Wachenfeldt	Immunological techniques
	13:00 - 15:00	Compulsory, Seminar	BCB:A213 Hörsal	Anja Broeder from LabJoy	GxP
	Thu 2017-09-21				
	10:00 - 12:00	Lecture	BCB:A261b Föreläsningssa I	Zoë Fisher	Crystallography and Neutrons
	16:45 - 17:00	Compulsory, Deadline			Deadline Intro. Lab II RNA/PCR
	Fri 2017-09-22				
	09:00 - 11:00	Lecture	BCB:A213 Hörsal	Allan Rasmusson	RNA: occurrence, isolation and analysis
	11:00 - 12:00	Lecture	BCB:A213 Hörsal	Allan Rasmusson	PCR and primer desing
	13:00 - 16:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIa: RNA preparation - Group A+B. Compulsory. Location: Computer room
	13:00 - 16:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Primer and PCR design - Group C+ D. Location: computer room.
w39	Mon 2017-09-25				
	08:00 - 12:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIb: RNA analysis, rev. Transcription - Group A+B. Compulsory.
	09:00 - 12:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Primer and PCR design - Group C+D. Compulsory. Location: computer room.
	13:00 - 16:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIa: RNA preparation - Group C+D. Compulsory.
	13:00 - 16:00	Compulsory, Supervision/ Tutorial	BCB:D202 Liganden	Allan Rasmusson	Tut: Primer and PCR design - Group A + B. Location: computer room.
	16:45 - 17:00	Compulsory, Deadline, Project			Deadline first version of project report
	Tue 2017-09-26				
	08:00 - 12:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIb: RNA analysis, rev. Transcription C+D. Compulsory.
	09:00 - 12:00	Supervision/ Tutorial	BCB:D202 Liganden	Allan Rasmusson	Tut: Primer and PCR design A + B. Location: computer room
	13:00 - 15:00	Lecture	BCB:A261b Föreläsningssa I	Claes von Wachenfeldt	Microarray techniques. Compulsory.
	15:00 - 16:30	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Comments on predictions - Group A-D. Compulsory.
	Wed 2017-09-27				

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w39	Wed 2017-09-27				
	09:00 - 15:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIc: RT-PCR and analysis - Group A+B
w39	Thu 2017-09-28				
	10:00 - 11:30	Lecture	BCB:A261b Föreläsningssa I	Allan Rasmusson	Quantitative transcriptomics
	12:15 - 14:00	Theme day			Education fair - information about Biology courses and programmes. Location: Ecology building
	13:30 - 14:30	Information		Christina Ledje	Exchange studies, mainly European universities (in Swedish). Location: Heden, Ecology building
	Fri 2017-09-29				
	09:00 - 17:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIc: RT-PCR and analysis - Group C+D. Compulsory.
	09:00 - 12:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Transcriptomics Data Analysis - Group A+B. Compulsory. Location: Computer room and A261b.
	13:00 - 15:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I		Tut: Transcriptomics Data Analysis - Group A+B. Compulsory. Location: Computer room and A261b.
	15:00 - 16:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Transcriptomics Data Analysis: Review - Group A + B. Location: computer room.
w40	Mon 2017-10-02				
	09:00 - 12:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Review; PCR - Groups A-D. Compulsory.
	13:00 - 15:00	Lecture	BCB:A261b Föreläsningssa I	Allan Rasmusson	Quantitative PCR
	Tue 2017-10-03				
	08:00 - 11:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIc: Real time RT-PCR -Group A. Compulsory.
	09:00 - 12:00	Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Transcriptomics Data Analysis - Group C+ D. Location: computer room.
	11:00 - 14:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIc: Real time RT-PCR - Group B. Compulsory.
	13:00 - 15:00	Supervision/ Tutorial	BCB:A261b Föreläsningssa I		Tut: Transcriptomics Data Analysis - Group C+ D. Location: computer room.
	15:00 - 16:00	Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Transcriptomics Data Analysis: Review - Group C + D. Location: computer room.
	Wed 2017-10-04				
	10:00 - 12:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IIc: Introduction to data analysis - Group A+B. Compulsory.

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w40	Wed 2017-10-04				
	13:00 - 15:30	Compulsory, Laboratory session	BCB:A261b Föreläsningssa I		Lab IId: Data analysis - Group A+B. Compulsory. Room: computer room and A261b.
	Thu 2017-10-05				
	08:00 - 11:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IId: Real time RT-PCR - Group C. Compulsory.
	11:00 - 14:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Lab IId: Real time RT-PCR - Group D. Compulsory.
	Fri 2017-10-06				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Marita Cohn	Centrifugation techniques
	16:45 - 17:00	Compulsory, Deadline			17.00. Deadline Correct Version Report Lab 1. Compulsory.
w41	Mon 2017-10-09				
	09:00 - 10:00	Compulsory, Laboratory session	BCB:D205 Receptorn	Allan Rasmusson	Lab IId: Data analysis (Consultation) - Group A + B. Compulsory.
	10:00 - 12:00	Compulsory, Laboratory session	BCB:D205 Receptorn		Lab IId: Data analysis (Consultation) - Group A + B. Compulsory.
	13:00 - 14:00	Compulsory, Laboratory session	BCB:A265 Lab-Verandan		Introduction to data analysis - Group C+D. Compulsory.
	15:00 - 16:30	Compulsory, Laboratory session	BCB:A261b Föreläsningssa I		Lab IId: Data analysis - Group C+D. Compulsory. Location: Computer room and A261b.
	Tue 2017-10-10				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Claes von Wachenfeldt	Bacterial protein production systems
	13:00 - 14:00	Compulsory, Laboratory session	BCB:A261b Föreläsningssa I	Allan Rasmusson	Lab IId: Data analysis (Consultation) - Group C+D. Compulsory. Location: Computer room and A261b.
	14:00 - 16:00	Compulsory, Laboratory session	BCB:A261b Föreläsningssa I		Lab IId: Data analysis (Consultation) - Group C+D. Compulsory. Location: Computer room and A261b.
	Wed 2017-10-11				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Wolfgang Knecht	BEVS
	13:00 - 15:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Data comparison, Questions, Groups A-D. Compulsory.
	15:00 - 16:00	Lecture	BCB:A213 Hörsal	Allan Rasmusson	Gene expression: Synopsis, comparisons of techniques and perspectives
	Thu 2017-10-12				
	10:00 - 12:00	Lecture	BCB:A261b Föreläsningssa I	Klas Flärdh	Fluorescence mikroskopy
	Fri 2017-10-13				

	Time	Tuition Type	Room part, Location Comment	External teacher, Staff	Custom Text, Booking Note
w41	Fri 2017-10-13				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Wolfgang Knecht	Protein expression in mammalian cells
w41	Fri 2017-10-13				
	13:00 - 14:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Marita Cohn	Tut: Centrifugation Groups A + B
	14:00 - 15:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Marita Cohn	Tut: Centrifugation Groups C + D
	16:45 - 17:00	Compulsory, Deadline			17.00. Deadline Questionnaire Lab II RNA/PCR. Compulsory.
w42	Mon 2017-10-16				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Allan Rasmusson	In vivo modification of gene expression in eukaryotes
	13:00 - 16:00	Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Experimental Design, Groups C+D. Location: computer room.
	Tue 2017-10-17				
	10:00 - 12:00	Lecture	BCB:A213 Hörsal	Carin Jarl- Sunesson	Transformation methods for eukaryotes
	13:00 - 16:00	Compulsory, Supervision/ Tutorial	BCB:A261b Föreläsningssa I	Allan Rasmusson	Tut: Experimental Design, Groups A+B. Compulsory. Location: computer room.
	Wed 2017-10-18				
	07:45 - 08:00	Compulsory, Deadline, Project			08.00 Deadline second version of project report. Compulsory.
w43	Wed 2017-10-25				
	13:00 - 15:00	Questions and Answers	BCB:A213 Hörsal	Allan Rasmusson, Carin Jarl- Sunesson, Claes von Wachenfeldt, Klas Flärdh, Marita Cohn, Wolfgang Knecht	Quetion time
	Thu 2017-10-26				
	09:00 - 12:00	Examination	BCB:A261b Föreläsningssa I, BCB:D215a Cerebrum vänster, BCB:D215b Cerebrum höger		Tenta/Examen
	Fri 2017-10-27				
	09:00 - 12:00	Deadline, Project	BCB:A261b Föreläsningssa I		12.00 Final deadline for projects and lab reports