Plant biology – for future forestry, 7,5 poäng
Institutionen för Skoglig Genetik och Växtfysiologi, Umeå Plant Science Centre Sveriges Lantbruksuniversitet (SLU)
901 83 UMEÅ

Plant biology – for future forestry, 7,5 POINTS - Schedule

VT 2022

Course responsible:

Peter Marharvy
Email: Peter.Marhavy@slu.se

Start: 17th of January 2022 Online (see Canvas)

Teachers:

Ewa Mellerowicz EW (SLU)
Björn Sundberg BS (StoraEnso)
Nathaniel Street NS (UmU)
Ulrika Egersdotter UE (SLU)
Ove Nilsson ON (SLU)
Stefan Jansson SJ (UmU)
Stéphane Verger SV (SLU)
Totte Niittylä TN (SLU)
Judith Lundberg-Felten JF (SLU)
Jonathan Love (AREVO)
Peter Marhavy PM (SLU)
Satoshi Naramoto (HU)
Vaughan Hurry VH (SLU)
Hannele Tuominen HT (SLU)

Laboratories:

Julie Guerreiro (JG) Anna Renström (AR)

Course literature:

Plant Biology by Alison Smith et al., Garland Science, ISBN 978-0-8153-4025-6

Exam: 17.02.2022

Each course-day will be dedicated to the respective subject listed below in the table. The teachers will make material available for own study (for instance reading exercises, quizzes, pre-recorded lectures, exercises) and

will meet with the students at the time listed below on Zoom or at the lecture hall. Activities in the Zoom meeting can involve interactive discussion, exercises, or lectures. Students should expect to dedicate a full day to the respective subject of the day and plan enough time for preparation before and after the lecture/Zoom meeting, as the meetings will require the student to come prepared. All detailed instructions will be given by the respective teacher on Canvas.

	Weekday	Date	Subject	Teacher	time
Week 1	Mo	17.Jan	Introduction & basic molecular biology	PM/SN	09:00 - 12:00
	Tu	18.Jan	Genes, genomes, tree genomes	NS	09:00 - 12:00
	We	19.Jan	Gene expression and genetic modification	ON	09:00 - 12:00
	Thu	20.Jan	Gene expression tutorial	JF	09:00 - 12:00
	Fri	21.Jan	Essay writing and presentation technique	JF	09:00 - 12:00
Week 2	Mo	24.Jan	Photosynthesis and carbon assimilation	VH	09:00 - 12:00
	Tu	25.Jan	Movement of water and minerals	TN	09:00 - 12:00
	We	26.Jan	Carbon storage and transport	TN	09:00 - 12:00
	Thu	27.Jan	Nitrogen assimilation, Nitrogen use efficiency	HT	09:00 - 12:00
	Fri	28.Jan	Overview of plant development	SV	09:00 - 12:00
Week 3	Mo	31.Jan	Nematodes	PM	09:00 - 12:00
	Tu	01.Feb	Ectomycorrhiza	JF	09:00 - 12:00
	We	02.Feb	Multiple choice test for exam qualification	PM/JF	09:00 - 12:00
	Thu	03.Feb	Lab	PM	09:00 - 16:00
Week 4	Fri	04.Feb	Wood: Cellulose and lignin biosynthesis enhancement & modification	SV	09:00 - 12:00
	Mo	07.Feb	Wood: Hemicellulose biosynthesis enhancement & modification	EM	09:00 - 12:00
	Tu	08.Feb	Tree breeding methods and strategies to mitigate - climate change	MS	09:00 - 12:00
	We	09.Feb	Clonal propagation of trees	UE	13:00 - 15:00
	Thu	10.Feb	Forest Biotechnology in commercial tree plantations – the industrial perspective	BS/JL	09:00 - 12:00
Week 5	Fri	11.Feb	GMOs and society	SJ	09:00 - 12:00
	Mo	14.Feb	Own study and preparation of literature presentation		
	Tu	15.Feb	Literature presentations	PM/JF/EM/TN	09:00 - 12:00
		17.Feb	Exam	PM/JF	

Essay study: Plantation vs traditional forestry. Students write a 1-2 page essay on the topic. Evaluate possibilities and risks involved in using genetically modified trees in future forestry in Sweden and elsewhere. Deadline to submit a draft of your essay on Canvas to the assigned peer-review partners: 04.02. Deadline to receive feedback from your peer-review partners: 09.02. Submit your final essay latest on 16.02. via Canvas.

Literature presentations: Reading and presenting (in groups) a publication on forest biotechnology, material is distributed at the start.