

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

VT 2021

Course responsible: Peter Marharvy
Email: Peter.Marhavy@slu.se

Judith Lundberg-Felten
Tel 0722069625
e-mail: Judith.lundberg-felten@slu.se

Start: 18th of January 2021 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)
Peter Marhavy	PM	(SLU)
Petra Marhava	PMA	(SLU)
Vaughan Hurry	VH	(SLU)
Hannele Tuominen	HT	(SLU)

Laboratories: Online

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

Exam: 19.02.2021

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. 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 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	Zoom time
Week 1	Mo	18-Jan	Introduction & basic molecular biology (+ pre-recorded intro to Canvas)	PM/JF	10-12
	Tu	19-Jan	Genes, genomes, tree genomes	NS	14-15
	We	20-Jan	Gene expression and genetic modification	ON	10-12
	We	20-Jan	Gene expression tutorial	JF	13-15
	Thu	21-Jan	Essay writing and presentation technique	JF	13-14
	Fri	22-Jan	Photosynthesis and carbon assimilation	VH	13-15
Week 2	Mo	25-Jan	Movement of water and minerals	PMA	10-12
	Tu	26-Jan	Carbon storage and transport	TN	10-12
	We	27-Jan	Nitrogen assimilation, Nitrogen use efficiency	HT	13-15
	Thu	28-Jan	Overview of plant development	SV	13-14
	Fri	29-Jan	Nematodes	PM	10-11
Week 3	Mo	01-Feb	Ectomycorrhiza	JF	13-14
	Tu	02-Feb	Multiple choice test for exam qualification	PM/JF	10-11
	We	03-Feb	Lab	PM/JF	13-15
	Thu	04-Feb	Wood: Cellulose and lignin biosynthesis enhancement & modification	TN	10-12
	Fri	05-Feb	Wood: Hemicellulose biosynthesis enhancement & modification	EM	10-12
Week 4	Mo	08-Feb	Tree breeding methods and strategies to mitigate - climate change	MS	10-12
	Tu	09-Feb	Clonal propagation of trees	UE	8-9
	We	10-Feb	Forest Biotechnology in commercial tree plantations – the industrial perspective	BS	10-12
	Thu	11-Feb	GMOs and society	SJ	13-15
	Fri	12-Feb	Own study and preparation of literature presentation		
Week 5	Mo	15-Feb	Literature presentations	PM/JF/EM/TN	9-12
	Tu	16-Feb	Own study		
	We	17-Feb	Own study		
	Thu	18-Feb	Rehearsal and questions session	PM/JF	10-12
	Fri	19-Feb	Exam	PM/JF	TBA

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: 10.02. Submit your final essay latest on 17.02. via Canvas.

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