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SCIENCE AND  
EDUCATION  
**FOR  
SUSTAINABLE  
LIFE**

# BI1044

## SLU's ADVANCED PLANT PATHOLOGY MASTER COURSE

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### FALL SEMESTER 2023 COURSE SCHEDULE

Version July 09, 2023

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Department of Forest Mycology and Plant Pathology.  
Swedish University of Agricultural Sciences.  
Almas Allé 5, 75007. Uppsala. Sweden.

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#### COURSE LEADER

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<b>Week 35</b> _ August 28 – September 1			
	<b>Monday 28 Aug.</b>	<b>Tuesday 29 Aug.</b>	<b>Wednesday 30 Aug.</b>
9:00 10:15		<b>#Lecture [AK]</b> Introduction to Plant Virology.  <b>Arenander - Ultuna library</b>	<b>#Lecture [SB]</b> Diagnostics and Identification of Plant Diseases: Symptomatology, Koch postulates.  <b>BioC-C216</b>
Break			
10:30 12:00		<b>#Lecture [AK]</b> Transmission of Plant Viruses.  <b>Arenander - Ultuna library</b>	<b>#Lecture [SB]</b> Diagnostics and Identification of Plant Diseases: Symptomatology, Koch postulates.  <b>BioC-C216</b>
Break			
13:00 14:15	<b>#Course Introduction [SB]</b>  <b>BioC-C216</b>	<b># Field Work [AK]</b> - Survey of Plant Viruses at  <b>Uppsala Botanical Garden</b>	{work on assignments}
Break			
14:30 16:00	<b>#Lecture [SB]</b> Principles of Plant Pathology  <b>BioC-C216</b>	<b># Field Work [AK]</b> - Survey of Plant Viruses at  <b>Uppsala Botanical Garden</b>	{work on assignments}
	<b>Thursday 31 Aug.</b>	<b>Friday 1 Sep.</b>	<b>Remarks</b>
9:00 10:15	<b>#Field Work [SB/BA]</b> - Survey of plant diseases How to perform and report field observations. <b>BÖL 2 - Campus Ultuna</b>	<b>#Lab Work [AB/BA] updated content</b> - Diagnostics of Plant Diseases [Microscopy Practical] <b>BÖL 2</b>	<i>Field work on Tuesday and Thursday: please check the weather forecast and prepare accordingly.</i>  <i>Lab work {all instances}: bring your lab coat. Wearing a closed lab coat at all times when you are in the lab is mandatory.</i>
Break			
10:30 12:00	<b>#Field Work [SB/BA]</b> - Survey of plant diseases. How to perform and report field observations. <b>BÖL 2 - Campus Ultuna</b>	<b>#Lab Work [AB/BA] updated content</b> - Diagnostics of Plant Diseases [Microscopy Practical] <b>BÖL 2</b>	
Break			
13:00 14:15	<b>#Lab Work [SB/BA]</b> - Diagnostics and isolation of plant pathogens. Microscopy Lab. Microbiology Lab. <b>BÖL 2</b>		
Break			
14:30 16:00	<b>#Lab Work [SB/BA]</b> - Diagnostics and isolation of plant pathogens. Microscopy Lab. Microbiology Lab. <b>BÖL 2</b>		

**Week 36** \_ September 4 – September 8

<b>Monday 4 Sep.</b>		<b>Tuesday 5 Sep.</b>		<b>Wednesday 6 Sep.</b>	
9:00 10:15	{work on assignments}	#Lab Work [SB/---] - Molecular diagnostics of plant pathobiomes [DNA extraction]  <b>BÖL 2</b>	#Lab Work [SB/---] - Molecular diagnostics of plant pathobiomes [Gel electrophoresis]  <b>BÖL 2</b>		
Break					
10:30 12:00	{work on assignments}	#Lab Work [SB/---] - Molecular diagnostics of plant pathobiomes [DNA extraction]  <b>BÖL 2</b>	#Lab Work [SB/---] - Molecular diagnostics of plant pathobiomes [Gel electrophoresis]  <b>BÖL 2</b>		
Break	<b>TEX1 [MK/EP]: Phylogeny of plant pathogenic fungi. Uploaded on canvas.</b>				
13:00 14:15	#Lecture [MSG] - Plant pathogens in the tree-of-life  <b>BioC-C216</b>	#Lab Work [SB/---] - Molecular diagnostics of plant pathobiomes [PCR detection]  <b>BÖL 2</b>	{work on assignments}		
Break					
14:30 16:00	#Lecture [MK] - Systematics of the fungal kingdom  <b>BioC-C216</b>	#Lab Work [SB/---] - Molecular diagnostics of plant pathobiomes [PCR detection]  <b>BÖL 2</b>	{work on assignments}		
<b>Thursday 7 Sep.</b>		<b>Friday 8 Sep.</b>		<b>Remarks</b>	
9:00 10:15	{work on assignments}	#Lecture [MK] - Molecular Characterization of Fungal Pathogens  <b>Computer room 1 and 2, Ultuna library</b>		<i>Lab work {all instances}: bring your lab coat. Wearing a closed lab coat at all times when you are in the lab is mandatory.</i>	
Break					
10:30 12:00	{work on assignments}	#TEX1 Computer Exercise [MK/EP] - Phylogeny of Plant Pathogenic Fungi  <b>Computer room 1 and 2, Ultuna library</b>			
Break					
13:00 14:15	#TEX1 Group Study [MK] - Phylogeny of Plant Pathogenic Fungi  <b>BioC-C216</b>	{work on assignments}			
Break					
14:30 16:00	#TEX1 Group Study [MK] - Phylogeny of Plant Pathogenic Fungi  <b>BioC-C216</b>	{work on assignments}			

**Week 37** \_ September 11 – September 15

<b>Monday 11 Sep.</b>		<b>Tuesday 12 Sep.</b>		<b>Wednesday 13 Sep.</b>	
9:00 10:15	{work on assignments}	# Lab Work [MD] - Biological Control of Plant Diseases  <b>BÖL 2</b>		{work on assignments}	
Break					
10:30 12:00	{work on assignments}	# Lab Work [MD] - Biological Control of Plant Diseases  <b>BÖL 2</b>		{work on assignments}	
Break	<b>TEX2 [MK]: Biological control of plant pathogens. Uploaded on Canvas.</b>				
13:00 14:15	# Lab Work [MD] - Biological Control of Plant Diseases  <b>BÖL 2</b>	# Lab Work [MD] - Biological Control of Plant Diseases  <b>BÖL 2</b>		{work on assignments}	
Break					
14:30 16:00	# Lab Work [MD] - Biological Control of Plant Diseases  <b>BÖL 2</b>	# Lab Work [MD] - Biological Control of Plant Diseases  <b>BÖL 2</b>		{work on assignments}	
<b>Thursday 14 Sep.</b>		<b>Friday 15 Sep.</b>		<b>Remarks</b>	
9:00 10:15	#Lecture [BA] - Life cycle and epidemiology of airborne pathogens.  <b>BioC-C216</b>	#Lecture [MK] - Biological disease control  <b>BioC-C216</b>			
Break					
10:30 12:00	#Lecture [MK] - Life cycle and epidemiology of soilborne pathogens.  <b>BioC-C216</b>	#TEX2 Discussion [MK] - Biological control of plant pathogens.  <b>BioC-C216</b>			
Break					
13:00 14:15	#Lecture [HF] - Suppressive soils  <b>BioC-C216</b>	{work on assignments}			
Break					
14:30 16:00	{work on assignments}	{work on assignments}			

<b>Week 38</b> _ September 18 – September 22			
	<b>Monday 18 Sep.</b>	<b>Tuesday 19 Sep.</b>	<b>Wednesday 20 Sep.</b>
9:00 10:15	{work on assignments}	#Lecture [BA] - Chemical disease control.  Arenander - Ultuna library	#Lecture [JZ/AB] - Principles of plant disease epidemiology.  BioC-C216
Break			
10:30 12:00	{work on assignments}	#Lecture [BA] - Surveillance and forecasting of plant diseases.  Arenander - Ultuna library	#Lecture [JZ/AB] - Principles of plant disease epidemiology: statistical models.  BioC-C216
Break	<b>TEX3 [AB]: Population Genetics of Plant Pathogens. Uploaded on Canvas</b>		
13:00 14:15	#Lecture [HF] - Fungal mycotoxins.  BioC-C216	#Computer Exercise [BA] - Disease forecast.  BioC-C216	{work on assignments}
Break			
14:30 16:00	#Lecture [MK] - Life cycle and epidemiology of post-harvest diseases.  BioC-C216	#Computer Exercise [BA] - Disease forecast.  BioC-C216	{work on assignments}
	<b>Thursday 21 Sep.</b>	<b>Friday 22 Sep.</b>	<b>Remarks</b>
9:00 10:15	#Lecture [BA] - Fungicide resistance.  BioC-C216	{work on assignments}	<i>Computer exercise on Tuesday: bring your laptop.</i>
Break			
10:30 12:00	#Lecture [MV] - Plant pathogenic nematodes  BioC-C216	{work on assignments}	
Break			
13:00 14:15	#Lab work [MV] - Plant Pathogenic Nematodes.  BÖL 2	{work on assignments}	
Break			
14:30 16:00	#Lab work [MV] - Plant Pathogenic Nematodes.  BÖL 2	Submit a 50% draft of the case study <b>Report</b> and <b>Poster</b> on Canvas before 16:00	

**Week 39** \_ September 25 – September 29

	<b>Monday 25 Sep.</b>	<b>Tuesday 26 Sep.</b>	<b>Wednesday 27 Sep.</b>
9:00 10:15	<b>#Lecture [AB]</b> - Population genetics of plant pathogens.  <b>BioC-C216</b>	<b>#Lecture [MD]</b> - How pathogens attack plants.  <b>BioC-C216</b>	<b>#Lecture [SB]</b> - Mechanisms of adaptation of pathogens to new hosts: adapted pathogens.  <b>BioC-C216</b>
Break			
10:30 12:00	<b>#TEX3 Discussion [AB]</b> - Population genetics of plant pathogens.  <b>BioC-C216</b>	<b>#Lecture [MD]</b> - How pathogens attack plants.  <b>BioC-C216</b>	<b>#Lecture [SB]</b> - Mechanisms of adaptation of pathogens to new hosts: non-adapted pathogens.  <b>BioC-C216</b>
Break	<b>TEX4 [SB]: Durable plant immunity. Uploaded on Canvas.</b>		
13:00 14:15	<b>#Lecture [SB]</b> - Principles of plant immunity: genetic basis.  <b>BioC-C216</b>	<b>#Lecture [GT]</b> - How plants defend against pathogens.  <b>BioC-C216</b>	{work on assignments}
Break			
14:30 16:00	<b>#Lecture [SB]</b> - Principles of plant immunity: molecular basis.  <b>BioC-C216</b>	<b>#Lecture [GT]</b> - How plants defend against pathogens.  <b>BioC-C216</b>	{work on assignments}
	<b>Thursday 28 Sep.</b>	<b>Friday 29 Sep.</b>	<b>Remarks</b>
9:00 10:15	<b>#Lecture [SB]</b> - Durable plant immunity  <b>BioC-C216</b>	<b># Lab Work [MD]</b> - Biological Control of Plant Diseases  <b>BÖL 3</b>	
Break			
10:30 12:00	<b>#TEX4 Discussion [SB]</b> - Durable plant immunity  <b>BioC-C216</b>	<b># Lab Work [MD]</b> - Biological Control of Plant Diseases  <b>BÖL 3</b>	
Break			
13:00 14:15	<b>#Lecture [SB]</b> - Biotechnologies for plant health: principles and applications.  <b>BioC-C216</b>	<b># Lab Work [MD]</b> - Biological Control of Plant Diseases  <b>BÖL 3</b>	
Break			
14:30 16:00	<b>#Lecture [SB]</b> - Biotechnologies for plant health: principles and applications.  <b>BioC-C216</b>	<b># Lab Work [MD]</b> - Biological Control of Plant Diseases  <b>BÖL 3</b>	

**Week 40** \_ October 2 – October 6

	<b>Monday 2 Oct.</b>	<b>Tuesday 3 Oct.</b>	<b>Wednesday 4 Oct.</b>
9:00 10:15	{work on assignments}	{work on assignments}	{work on assignments}
Break			
10:30 12:00	{work on assignments}	{work on assignments}	{work on assignments}
Break			
13:00 14:15	{work on assignments}	{work on assignments}	{work on assignments}
Break			
14:30 16:00	{work on assignments}	{work on assignments}	<p>Submit your <b>Lab Report</b> as .pdf on Canvas before 16:00</p>
	<b>Thursday 5 Oct.</b>	<b>Friday 6 Oct.</b>	<b>Remarks</b>
9:00 10:15	#IPM Workshop - Group work  ZOOM	<p>Submit your group presentation as .pdf on Canvas at 8:30 the latest.</p> #IPM Workshop - Group presentations  Lecture hall T, Ulls hus building E	
Break			
10:30 12:00	#IPM Workshop - Group work  ZOOM	#IPM Workshop - Group presentations  Lecture hall T, Ulls hus building E	
Break			
13:00 14:15	#IPM Workshop - Group work  ZOOM	{work on assignments}	
Break			
14:30 16:00	#IPM Workshop - Group work  ZOOM	{work on assignments}	

**Week 41** \_ October 9 – October 13

<b>Monday 9 Oct.</b>				<b>Tuesday 10 Oct.</b>				<b>Wednesday 11 Oct.</b>			
9:00 10:15	{work on assignments}			9:00 10:15	{work on assignments}			9:00 10:15	{work on assignments}		
Break				Break				Break			
10:30 12:00	{work on assignments}			10:30 12:00	{work on assignments}			10:30 12:00	{work on assignments}		
Break				Break				Break			
13:00 14:15	{work on assignments}			13:00 14:15	{work on assignments}			13:00 14:15	{work on assignments}		
Break				Break				Break			
14:30 16:00	{work on assignments}			14:30 16:00	{work on assignments}			14:30 16:00	{work on assignments}		
<b>Thursday 12 Oct.</b>				<b>Friday 13 Oct.</b>				<b>Remarks</b>			
9:00 10:15	<b>9:00 – 9:30 Course Evaluation</b> #One Health Workshop - Group work ZOOM			9:00 10:15	Submit your group presentation as .pdf on Canvas at 8:30 the latest. #One Health Workshop - Group presentations Lecture hall Q, Ulls hus building B						
Break				Break							
10:30 12:00	#One Health Workshop - Group work ZOOM			10:30 12:00	#One Health Workshop - Group presentations Lecture hall Q, Ulls hus building B						
Break				Break							
13:00 14:15	#One Health Workshop - Group work ZOOM			13:00 14:15	{work on assignments}						
Break				Break							
14:30 16:00	#One Health Workshop - Group work ZOOM			14:30 16:00	{work on assignments}						



<b>Week 42</b> _ October 16 – October 20			
	<b>Monday 16 Oct.</b>	<b>Tuesday 17 Oct.</b>	<b>Wednesday 18 Oct.</b>
9:00 10:15	#Finalize case study report and poster	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam
Break			
10:30 12:00	#Finalize case study report and poster	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam
Break			
13:00 14:15	#Finalize case study report and poster	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam
Break			
14:30 16:00	<b>#Submit case study Report and Poster on Canvas at 16:00 the latest.</b>	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam
	<b>Thursday 19 Oct.</b>	<b>Friday 20 Oct.</b>	<b>Remarks</b>
9:00 10:15	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	
Break			
10:30 12:00	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	
Break			
13:00 14:15	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	
Break			
14:30 16:00	#Read case study reports of others #Prepare your case study presentations #Prepare for the exam	<b>#Submit your case study Presentation on Canvas at 16:00 the latest.</b>	

<b>Week 43</b> _ October 23 – October 27			
<i>Final exams</i>			
	<b>Monday 23 Oct.</b>	<b>Tuesday 24 Oct.</b>	<b>Wednesday 25 Oct.</b>
9:00 10:15	#Case-Study Presentation  <b>Lecture-hall BioC-Lennart Kennes</b>	#Prepare for the final exam	#Final Exam <b>Slots available between 8:00 – 15:30 {up until 17:30}</b>  <b>BioC. Room A332 - Preparation BioC. Room A338 - Examination</b>
Break			
10:30 12:00	#Case-Study Presentation  <b>Lecture-hall BioC-Lennart Kennes</b>	#Prepare for the final exam	#Final Exam {possible additional slots}
Break			
13:00 14:15	#Case-Study Presentation  <b>Lecture-hall BioC-Lennart Kennes</b>	#Prepare for the final exam	#Final Exam {possible additional slots}
Break			
14:30 16:00	#Case-Study Presentation  <b>Lecture-hall BioC-Lennart Kennes</b>	#Prepare for the final exam	#Final Exam {possible additional slots}
	<b>Thursday 26 Oct.</b>	<b>Friday 27 Oct.</b>	<b>Remarks</b>
9:00 10:15	#Final Exam <b>Slots available between 8:00 – 11:00, 12:00 – 15:00 {optional 16:00 – 17:30}</b> <b>BioC. Room A332 - Preparation BioC. Room A338 - Examination</b>		
Break			
10:30 12:00	#Final Exam		
Break			
13:00 14:15	#Final Exam		
Break			
14:30 16:00	#Final Exam		