



Course Syllabus (Academic Year 2020)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAAG 352 Principle of Plant Pathology and Protection
Credit (study hours) : 3 (2-3-5)
2. **Program Name** : Bachelor of Science Program in Agricultural Science
3. **Course Module** : Major Elective course
Pre/co-requisite : -
4. **Class Semester** : 1st Semester 2nd Semester Academic Year 2020
5. **Class Schedule & Venue** : Online class via WebEx and class room, Lecture 10:00 – 12:00,
 Room xxxx, Lecture Building
 Laboratory 13:00 – 16:00, Room L-103, Laboratory Building
6. **Class Coordinator** : Dr. Prapapan Sawhasan Chuthamas
 Email: prapapan.saw@mahidol.ac.th

7. Course Description

The importance of the plant disease, the symptoms and cause of plant diseases, microorganisms that causes the disease, the disease cycle. Interaction between pathogen and host plants, epidemiology, plant disease diagnosis. Principles and methods of plant disease control measures by various methods including cultural, chemical, biological and biological agents control.

8. Course Objectives / Course Learning Outcomes (CLOs)

No.	Objectives / CLOs	Expected Skills / Knowledge			PLOs
		Specific	Generic	Knowledge	
8.1	Explain the importance of the plant disease, the symptoms and cause of plant diseases, the disease cycle, microorganisms that causes the disease including fungi, mollicute, nematode, virus, viroid and bacteria	SS1 Scientific Skill		√	1, 3
8.2	Examine methods of plant disease control measures by various methods including cultural, chemical, biological	SS1 Scientific Skill	GS2 Analytical thinking skill GS6 Decision making skill	√	1, 3

	and biological agents control				
8.3	Explain Interaction between pathogen and host plants, epidemiology, plant disease diagnosis		GS2 Analytical thinking skill		1
8.4	Demonstrate a strong team work and good ethics		GS15 Moral and ethics		4, 5

9. Class Instructor List

9.1 Name: Assoc. Prof. Dr. Taworn Vinijsanun (TV) Email: taworn.vin@mahidol.ac.th

9.2 Name: Dr. Prapapan Sawhasan Chuthamas (PS) Email: prapapan.saw@mahidol.ac.th

9.3 Name: Dr. Chananat Kaewmanee (CK) Email: k.chananat@gmail.com

9.4 Name: Assoc. Prof. Dr. Vichit. (VK; รศ. ดร. วิชิต เกรียงยະกุล)

10. Course Outline

We ek	Date	Contents	CLOs	Teaching & Learning	Instructor's Names
1	4 Aug 2020	<u>Lecture</u> : History definition and the type of plant diseases	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Study of microscopic plant diseases, culture media preparation, and selected topics in plant pathology		Practice, Lab report	TV
2	7 Aug 2020	<u>Lecture</u> : Interaction between pathogen and host plants, the symptoms and cause of plant diseases, the disease cycle	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Basic techniques in plant pathology and microorganisms isolation		Practice, Lab report	TV
3	11 Aug 2020	<u>Lecture</u> : Effects of environmental conditions on plant diseases	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Effects of environmental conditions on plant diseases		Practice, Lab report	TV
4	14 Aug 2020	<u>Lecture</u> : Diagnosis of plant diseases from pathogens and non-pathogens	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Diagnosis of plant diseases from pathogens and non-pathogens		Practice, Lab report	TV
5	18 Aug 2020	<u>Lecture</u> : Plant diseases caused by lower fungi and	1, 3, 5	Lecture, Q&A	TV

		disease control			
		<u>Laboratory</u> : Plant diseases caused by lower fungi		Practice, Lab report	TV
6	21 Aug 2020	<u>Lecture</u> : Mechanisms in plant disease resistance in plants	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Koch's Postulation		Practice, Lab report	TV
7	25 Aug 2020	<u>Lecture</u> : Plant diseases caused by higher fungi and disease control	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Plant diseases caused by higher fungi		Practice, Lab report/	TV
8	Midterm Examination (28 October 2020)				
9	1 Sep 2020	<u>Lecture</u> : Plant diseases caused by nematode and disease control	1, 3, 5	Lecture, Q&A	VK
		<u>Laboratory</u> : Plant diseases caused by nematodes		Practice, Lab report	VK
10	4 Sep 2020	<u>Lecture</u> : Plant diseases caused by Mollicute and disease control	1, 3, 5	Lecture, Q&A	CK
		<u>Laboratory</u> : Plant diseases caused by Mollicute		Practice, Lab report	CK
11	8 Sep 2020	<u>Lecture</u> : Plant diseases caused by bacteria and disease control	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Plant diseases caused by bacteria		Practice, Lab report	TV
12	11 Sep 2020	<u>Lecture</u> : Plant disease protection	1, 3, 5	Lecture, Q&A	TV
		<u>Laboratory</u> : Inoculum preparation and microbial inoculation on corn plants		Practice, Lab report	TV
13	6 Oct 2020	Selected Topic Presentation and Discussion	1, 3, 4, 5	Presentation, Q&A, Group discussion, Report	TV, PS
				Skill test	
14	7 Oct 2020	<u>Lecture</u> : Epidemiology, outbreak types and severity	1, 3, 5	Lecture, Q&A	PS
		<u>Laboratory</u> : Plant pathogen operating system on plant protection		Practice, Lab report	TV
15	26 Oct 2020	<u>Lecture</u> : Plant diseases caused by virus and viroid and disease control	1, 2, 3, 5	Lecture, Q&A	PS

		<u>Laboratory</u> : Plant diseases caused by virus and viroid and disease control		Practice, Lab report	PS
16	to be announced	Field trip	1, 3	Field trip, Demonstration	TV
17	Final Examination (27 October 2020)/ Laboratory skill test				

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Mid-term exam	examination for 3 hours (knowledge of 1 st to 7 th week)	1, 3	8	35
11.2	Final exam	examination for 3 hours (knowledge of 9 th to 16 th week)	1, 3	17	35
11.3	Reports / Assignments	will be announced in the class	1, 3, 4	15, 16	10
11.4	Laboratory skill test	will be announced in the class	3	16	5
11.5	Lab Reports	will be announced in the class	1, 4	every week	10
11.6	Class participation	will be announced in the class	5	every week	5
				Total	100

12. Grading System

Criterion-referenced evaluation

Grade	Score	Grade	Score	Grade	Score	Grade	Score
A	≥ 80 %	B	70 – 74.99%	C	60 – 64.99%	D	50 – 54.99%
B+	75 – 79.99%	C+	65 – 69.99%	D+	55 – 59.99%	F	< 50 %

Norm-referenced evaluation

*If use both criterion and norm-referenced evaluation, please tick two boxes.

13. References

13.1. ดร. กัญชลิ เจตยานนท์. 2542. โรคพืชวิทยาเบื้องต้น. คณะทรัพยากรธรรมชาติและสิ่งแวดล้อม มหาวิทยาลัยนเรศวร

13.2. ไพโรจน์ จ่วงพานิช. 2522 หลักวิชาการโรคพืช. ภาควิชาโรคพืช คณะเกษตรศาสตร์มหาวิทยาลัยเกษตรศาสตร์

13.3. GN. Agrios. 2001. Plant Pathology. Academic press.