

# Syllabus for PLP 6303 Host-Parasite Interactions II (3 Credits)

**Instructor:** Dr. Wen-Yuan Song

Office: 2431 Fifield Hall

Office hours: Tuesday 9:30 – 11:00 a.m. or by appointment

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**Video Conferencing:** ‘Zoom’ link to join from PC, Mac, Linux, iOS, or Android: <https://ufl.zoom.us/j/95091849635?pwd=QnhaNVhLbjNydVdwQTFUWVRLWlpaUT0.> (**Passcode:063027**). Please use the link above if you virtually participate in the class from an off-campus site.

## A. Course Description

*Host-Parasite Interactions II* focuses on molecular mechanisms of plant immune systems. Emphasis will be placed on effector- and PAMP (Pathogen-Associated Molecular Pattern)-triggered immunity. Systemic acquired resistance will also be presented. Strategies used in transgenic plants for disease control will be discussed. There will be two lectures and a discussion every week. Upon completion of this course, students should be familiar with the fundamental concepts and the methods used in this rapidly expanding research area.

## B. Time and Location

2564 Fifield Hall

Lecture: Monday and Wednesday 10:40 am – 11:30 am

Discussion: Friday 10:40 am – 11:30 am

## C. Textbook and Readings

There will be no formal textbook for this course.

Handouts will be available in class.

## D. Grading

Grades will be determined based on the number of total points obtained from the following:

Review paper:	100 points
Discussion:	200 points
Mid-term exam:	300 points
Final exam:	300 points
Class participation:	100 points

Total points possible: 1000

A = 900-1000 (90-100%)

B = 800-899 (80-89.9%)

C = 700-799 (70-79.9%)

D = 600-699 (60-69.9%)

E = less than 600 (<60%)

These numbers are subject to change depending on class performance.

### **E. Prerequisites:**

Host Parasite Interaction I (PLP 6502) or

Plant Molecular Biology (PCB 6528) or

courses in Genetics/Biochemistry

### **F. Topic outline (Spring, 2022)**

- 1 Introduction
- 2 Map-based cloning of disease resistance genes
- 3 Plant disease resistance (R) proteins
- 4 Tools for the detection of protein partners
- 5 R protein partners
- 6 Ubiquitin-mediated protein modification
- 7 Genetic screenings of defense regulators
- 8 Interplay among resistance, temperature and growth
- 9 Molecular basis of gene-for-gene interactions
- 10 Alteration of host cell transcriptome: resistance or susceptibility
- 11 Plant resistance genes against *Xanthomonas* (part 1)
- 12 Plant resistance genes against *Xanthomonas* (part 2)
- 13 Review
- 14 Mid-term exam**
- 15 Pathogen-associated molecular patterns (PAMPs) (part 1)
- 16 Pathogen-associated molecular patterns (PAMPs) (part 2)
- 17 PAMP-triggered immunity (part 1)
- 18 PAMP-triggered immunity (part 2)
- 19 Innate immunity in plants and animals
- 20 Tight control of innate immunity for homeostasis
- 21 Suppression of PAMP-triggered immunity by pathogen effectors
- 22 Systemic acquired resistance (part 1)
- 23 Systemic acquired resistance (part 2)
- 24 Systemic acquired resistance (part 3)
- 25 CRISPR
- 26 Next-generation DNA sequencing
- 27 Review
- 28 Final exam**

**ACADEMIC HONESTY:** As a result of completing the registration form at the University of Florida, every student has signed the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.” We agree to comply with the new Honor Code, which specifies that “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

**UF COUNSELING SERVICES:** Resources are available on campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:

- 1. University Counseling Center:** 3190 Radio Road, 352-392-1575, personal and career counseling.
- 2. Student Mental Health:** Student Health Center, 392-1161, personal counseling.
- 3. Sexual Assault Recovery Services (SARS):** Student Health Care Center, 352-392-1161, sexual assault counseling.
- 4. Career Resource Center:** Level One, J. Wayne Reitz Union, 352-392-1601, career development assistance and counseling.

**ACCOMMODATIONS:** Students requesting classroom accommodations must first register with the Dean of Students Office (Students with Disability Office, 1316 Museum Rd, 352-392-8565). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodations. Further information is available from the Disability Resource Center at <https://www.dso.ufl.edu/OSD/>.

**SOFTWARE USE:** All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

**ATTENDANCE:** Students are expected to attend all lectures and discussions. If you are unable to attend at the scheduled time, please notify me by email as early as possible. Make-up exams or other work will need to be arranged three days prior to a scheduled absence.