

**SWS 6366**  
**Biodegradation And Bioremediation of Organic Contaminants**  
3 credit hours\_ Online

**ABOUT THE COURSE**

**Course Number:** SWS 6366

**Class meeting time and location:** This class is facilitated 100% online with mandatory weekly synchronized chat sessions **Tuesday 6:30 to 7:30 p.m.** U.S. Eastern Time

**Weekly Meetings: via Zoom** (Link will be sent to all students when semester begins).

**INSTRUCTOR INFORMATION****Dr. Kanika Sharma Inglett**

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**Dr. Patrick Christopher Wilson**

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Office Hours: By Appointment and by email in CANVAS.

**COURSE INFORMATION**

**Course Website:** <http://elearning.ufl.edu>

**Course Communications:** Send messages to your instructor via the Canvas Mail Tool. Expect a response within *48 hours*. All e-mail correspondence to the course instructor must originate from your *canvas inbox account*.

Please use the *Do You Have a Course-Related Question?* Forum in Canvas. It's likely that others have the same questions. Feel free to answer questions posted by your classmates.

**Recommended Textbooks:** There is no required text for this course. However, we recommend the Alexander text<sup>1</sup>. This will provide the extra clarification for some topics. *Additional handouts and reading references for specific topics will be provided to all students during the semester.*

<sup>1</sup>Biodegradation and Bioremediation, M. Alexander (1999), Academic Press, New York.

**Materials And Supplies Fees: N/A**

**Course Description:** This course will present the basic principles of chemical and biological degradation of toxic chemicals and familiarize students with the application of bioremedial technologies in natural environments. Topics covered will include: 1) occurrence and ecological significance of toxic organic chemicals, 2) chemistry of contaminants, kinetics and mechanisms of degradation (chemical and biological), and 3) current technologies of bioremediation of contaminated soils and water.

**Prerequisite Knowledge & Skills:** Basic knowledge of organic chemistry and microbiology will be 'beneficial, to follow the material in this course. Please ask the instructor for extra resources if you need to review the basics.

**Course Outline:**

The following topics will be covered in a total of 13 modules.

- Introduction to bioremediation
- Introduction to microorganisms
- Introduction to contaminants
- Strategies of microbial degradation and bioremediation
- Biotransformation of chemicals
- Environmental effects on microbial degradation
- Chemical interaction with the environment
- Kinetics of biodegradation
- Molecular Biology of Genetically modified microorganisms- techniques
- Bioremediation of organic and inorganic pollutants
- Remediation Technologies
- Project

**INSTRUCTIONAL METHODS and STUDENT RESPONSIBILITIES**

Web-based lecture videos with interactions are assigned every week. The course material will be released at a set schedule and students will have access to one unit at a time. At the beginning of each week, the instructor will assign the topic/slides to be studied over the period of that week. For a successful completion of the course, it is critical to remain on schedule and study of assigned material must be completed with the allocated week. Associated to each module will be reading material/ activities that may supplement the material in the texts or slides.

Zoom online meeting system is used for chats (synchronous communication): Chat sessions: Tuesday 6:30- 7:30 p.m. U.S. Eastern Time.

**Zoom Link:** Link will be sent to all students when classes begin.

**General Student Responsibilities:**

1. Students are expected to complete the weekly assigned work on time.
2. Participation in chat sessions and the discussion board is provides a great opportunity to engage in discussion with other class fellows. Students are also encouraged to use chats and discussion board platforms. Some discussions may be graded. Students need to actively contribute to the discussion posts.
3. Students are expected to complete all assignments/quizzes when offered. The course policy does not allow for any make-up quizzes/tests. However, under exceptional circumstances, students may discuss their situation with the instructors. Students need to make sure that the instructors are aware of any absences before the event.
4. Students are expected to demonstrate their mastery of presented material by passing written examinations and successfully completing assigned homework.

## STUDENT ASSESSMENTS

You are expected to attend and be prepared to participate in all discussion sessions. Personal issues with respect to discussion sessions or fulfillment of course requirements will be handled on an individual basis. A portion of the grade is based on meaningful class participation, demonstrated student interest, and overall student dedication.

*Assessments* (100%) for the course are based on the following.

Quizzes and Assignments	(40%)
Exams (midterm and Final)	(40%)
Project	(10%)
Discussion participation	(10%)

### This course follows the following Grading Scale (%)

<b>A</b>	93% and above	<b>C</b>	73-76.99%
<b>A-</b>	90-92.99%	<b>C-</b>	70-72.99%
<b>B+</b>	87-89.99%	<b>D+</b>	67-69.99%
<b>B</b>	83-86.99%	<b>D</b>	63-66.99%
<b>B-</b>	80-82.99%	<b>D-</b>	60-62.99%
<b>C+</b>	77-79.99%	<b>E</b>	Below 60

Opportunities for students to participate in class via chats and discussion board activities are provided.

For Project presentations students will use *VoiceThread*. To access *VoiceThread*, go to <https://ufl.voicethread.com> and login with your Gatorlink username and password. Further

directions will be given when the project topics are assigned. To familiarize yourself with this software you can click on the link [User guide](#).

## COURSE POLICIES

**Attendance Policy:** Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found on the [Attendance Policies page](#).

**Quiz/Exam Dates/Policies:** There will be activities (quizzes/ discussion boards etc) associated with each unit. There are two comprehensive exams in the course. Any work that is illegible will be considered as incomplete and graded as such, so make sure you show complete work in a neat manner. Additionally, to allow students to demonstrate their learning, students will be required to make a presentation online and participate in peer evaluation.

**Make-Up Policy:** Ample time has been provided for all assignments and quizzes to be completed and students are encouraged not to wait until the last minute to begin their work to avoid any last-minute issues that prevent them from completing and submitting their work in a timely manner. Make-up allowances for any missed assessments will be considered on a case-by-case basis and is at the discretion of the instructor.

**Late Work Policy:** Work after due date will be accepted for up to 24 hours with 10%-points deduction and 50%-points deduction for up to a week. No work will be accepted a week after the due date.

**Assignment Policy:** Timely completion and submission of assignments is expected. Lecture Videos may include interactions in form of questions and multiple choice. Check all, and/or fill in the blank questions and submissions of answers on the associated discussion boards to receive a complete grade.

**Course Technology:** This course is facilitated 100% online through Canvas. You may access Canvas from UF's e-Learning webpage: <http://elearning.ufl.edu/>. Please contact the UF Help Desk, <http://helpdesk.ufl.edu>, if you have any technical difficulties with Canvas.

**Technology Checklist:** The technology checklist provides recommendations for students enrolled in the Distance Education Track in Environmental Science. It is the responsibility of the student to have access to a personal computer (or laptop), the Internet, and maintain the functionality of peripherals (e.g. web cam and audio system) to successfully participate in distance education courses offered by the Soil and Water Sciences Department.

- Personal computer or laptop with sufficient hard drive space to store course materials and speakers
- Web camera (highly encouraged)
- External microphone (e.g. headset with build-in microphone, voice over IP device) is **required**.

- Review the [Student Computing Requirements](#) for policy, hardware, and software information.

**Online Course Evaluation:** Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semesters, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

## UF Policies

**University Policy on Accommodating Students With Disabilities:** Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc](http://www.dso.ufl.edu/drc)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

**University Policy on Academic Conduct:** UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructors in this class.

**Class Demeanor or Netiquette:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats. Review the [Netiquette Guide for Online Courses](#) for expected student behavior.

**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. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## CAMPUS RESOURCES

### UF Health and Wellness Resources

- **U Matter, We Care:** If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352-392-1575 so that a team member can reach out to the student.
- **Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
- **Sexual Assault Recovery Services (SARS)** :Student Health Care Center, 392-1161.
- **University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

*Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.*

**Academic Resources:** Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

- **E-learning technical support**, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.
- **Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.
- **Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- **Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.
- **Writing Studio, 302 Tigert Hall**, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.
- **Student Complaints Campus:** [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).
- **On-Line Students Complaints:** <http://www.distance.ufl.edu/student-complaint-process>.