BSC 561 01W

Bioremediation

Courses Syllabus: Fall, 2025

Instructor: Dr. Lin Guo
Office location: Science building 353
Email: Lin.Guo@etamu.edu
Office hr: 8:00–5:00 pm online M-F

Classroom: online
Time: 8/25/25-12/12/25

Text Book: No book is required. The teaching materials or link of resources are provided in D2L.

Course Description: Bioremediation is the applications of living organisms (e.g. plants and microorganisms) to remediate contaminated soils and waters. Microorganisms can degrade toxic compounds to less toxic or non-toxic compounds; plants can uptake or immobilize toxic contaminants to prevent pollutants from entering non-contaminated areas. Further, microorganism and plants may interact with each other to enhance the bioremediation efficiency.

As an introduction course, it includes an overview of the bioremediation process; describe the typical bioremediation strategies for contaminated environment; explore the applications of bioremediation technologies; discuss the factors that influence the bioremediation rates; and introduce success cases in the application of bioremediation technology to contaminated sites

Instructional Method: Lecture, discussion, quizzes and papers;

Learning Objectives: Upon completion of this course you should be able to:

1. Understand the nature and importance of bioremediation;
2. Know the influence of site characteristics to bioremediation rates;
3. Have a knowledge of the impacts of contaminant characteristics to bioremediation process;
4. Understand the use of bioremediation in real world applications;

Evaluations:	quizzes	50 points	A≥90%
	Term-paper	25 points	B⩾80%
	Discussions	25points	C⩾70%
	Total	100 points	D⩾60%

Quizzes: please complete quizzes after studying the lecture of **some units** on D2L.

Term-paper: Write a term paper to discuss a case study of bioremediation project; In this paper, you will need to introduce the background of the project, the details of the project (i.e. the strategies of bioremediation), the results of the project, and the suggestions for future; Use 12 pt font, 1.5 line spacing; Number your pages (more than 4 pages); Due on or **before 5 pm on Dec 12**;

Discussion: Participate in the online discussions. Post your own thoughts. Post at least one comment to each question posed by the instructor. Read the postings of others and respond (at least two peer review responses are needed). Your level of participation - both quantity and quality - is part of your participation grade. Discussions will open for one week. It will close at **midnight** of Friday. I encourage you to do it as earlier as possible.

All the assignments are expected to be submitted on time

Topics:

Week 1-2 Aug 25-Sep 5: Overview
Week 3-4 Sep 8-19: Introduction of bioremediation
Week 5 Sep 22-26: Process of bioremediation
Week 6 Sep 29-Oct 3: Hazardous pollutants
Week 7 Oct 6-10: Methods of Wastewater treatment
Week 8 Oct 13-17: Bioremediation of wastewater
Week 9 Oct 20-24: Bioremediation of contaminated soil
Week 10 Oct 27-31: in situ bioremediation of soil
Week 11 Nov 3-7: Ex situ bioremediation of soil
Week 12-13 Nov 10-Nov 21: Treatment of common contaminants
Week 14-15 Nov 24-5: Bioremediation in practice
Week 16 Dec 5-Dec 12: Term paper

University Procedures:

Students with Disabilities:

The Americans with Disabilities Act (ADA) prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and governmental activities.

If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Phone (903) 886-5150 or (903) 886-5835 Fax (903) 468-8148 Email: Rebecca.Tuerk@tamuc.edu

Website: Office of Student Disability Resources and Services

http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServ ices/

ETAMU Attendance:

For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01. http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity:

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

Nondiscrimination Notice:

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Student Conduct:

All students enrolled at the University shall follow the tenets of common decency and acceptable

behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf
Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette http://www.albion.com/netiquette/corerules.html

Early Intervention for First Year Students:

Early intervention for freshmen is designed to communicate the University's interest in their success and a willingness to participate fully to help students accomplish their academic objectives. The university through faculty advisors and mentors will assist students who may be experiencing difficulty to focus on improvement and course completion. This process will allow students to be knowledgeable about their academic progress early in the semester and will provide faculty and staff with useful data for assisting students and enhancing retention. Grade reports will be delivered by the end of the sixth week of the semester.

Campus carry rules:

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and East A&M Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to (http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all East A&M campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

Technology Requirement

D2L Access and Log in Information

This course will be facilitated using D2L, the learning management system used by East Texas A&M University. To get started with the course, go to myLeo, then select Apps, and then select myleo online (D2L Brightspace).
You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

If you are having technical difficulty with any part of D2L Brightspace, please contact Brightspace Technical Support at 1-877-325-7778.

Interaction with Instructor Statement

If you have questions pertaining to the content of this course, please contact me via email or office time. Generally, emails will be answered within 24 hrs. If I can not answer emails on time, I will let you know in advance.

AI Statement

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty
https://inside.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

13.99.99.R0.10 Graduate Student Academic Dishonesty
https://inside.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/graduate/13.99.99.R0.10.pdf