

Fall 2019

# EVSC 610-101: Environmental Chemical Science

Pradyot Patnaik

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## Chemistry: *Fall 2019 Course Syllabus*

**NJIT Academic Integrity Code:** All students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

### COURSE INFORMATION

**Course Description:** Environmental Chemical Science, EVSC 610 is a course designed to acquaint students to many chemical and biochemical processes occurring in the environment and include a wide range of topics such as, aquatic chemistry and ecotoxicology, hydrological cycle and phase interaction, atmospheric chemistry, human impact and pollution, water and air pollution, green chemistry and risk reduction, and treatment of wastewater, sewage and sludge. Also various processes involving chemical fate and transport of substances in the hydrosphere and atmosphere would be described along with chemical fate and transport of substances, oxidation-reduction, and photochemical reactions.

**Number of Credits:**

**Prerequisites:** Students must have an in-depth understanding of general chemistry.

**Course-Section and Instructors**

Course-Section	Instructor
Environmental Chemical Science CRN 92800-101, EVSC 610-101	Prof. Pradyot Patnaik

**Office Hours for All Chemistry & Environmental Science Instructors:** [Fall 2019 Office Hours and Emails](#)

**Required Textbook:**

<b>Title</b>	Environmental Chemistry
<b>Author</b>	Stanley E. Manahan
<b>Edition</b>	9 <sup>th</sup> Edition
<b>Publisher</b>	CRC Press, Boca Raton
<b>ISBN#</b>	978-1-4200-5920-5

**University-wide Withdrawal Date:** The last day to withdraw with is Monday, November 12, 2019. It will be strictly enforced.

Learning Outcomes:

## POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

**Grading Policy:** The final grade in this course will be determined as follows:

Exam 1	100 points
Exam 2	100 points
Term Paper	100 points

Your final letter grade in this course will be based on the following tentative curve:

A	90 % and above	C	50 to 59 %
B+	80 to 89 %	D	40 to 49 %
B	70 to 79 %	F	Below 40 %
C+	60 to 69 %		

**Attendance policy:** Attendance at classes will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply “getting the notes.”

**Homework Policy:** Homework is an expectation of the course. The home work problems set by the instructor are to be handed in for grading and will be used in the determination of the final letter grade as described above.

**Exams:** There will be two exams during the semester. Also students will be assigned to research on assign topics and write their term papers submit The following exam periods are tentative and therefore possibly subject to change:

Exam 1	Mid-November, 2019
Exam 2	December, 2019
Submission of term papers	December, 2018

**Make-up Exam Policy:** There will normally be **NO MAKE-UP EXAMS** during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor’s note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the CES Department Office/Instructor that the exam will be missed so that appropriate steps can be taken to make up the grade.

**Cellular Phones:** All cellular phones and other electronic devices must be switched off during all classtimes. Such devices must be stowed in bags during exams or quizzes.

## ADDITIONAL RESOURCES

**Chemistry Tutoring Center:** Located in the Central King Building, Lower Level, Rm.G12. Hours of operation are Monday - Friday 10:00 am - 6:00 pm. For further information please click [here](#).

**Accommodation of Disabilities:** Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-417 or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support service provided please visit the Accessibility Resources and Services (OARS) website at:

- <http://www5.njit.edu/studentssuccess/disability-support-services/>

**Important Dates** (See: [Fall 2019 Academic Calendar, Registrar](#))



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## Course Outline

Lecture	Section	Topic	Assignment
1		Introduction to the Course, Chemistry and Environment	
2		Environmental and Green Chemistry	
3		Fundamentals of Aquatic Chemistry, Hydrological Cycles	
4		Properties of Water, Dissolved Gases, Pollutants	
5		Oxidation-Reduction in Aquatic Chemistry	
6		Phase Interaction, Chemical Fate and Transport	
7		Water Pollution: Nutrients, Metals and Organics	
8		Water Treatment: Wastewaters, Sewage and Sludges	
9		Water Disinfection, Purification and Conservation, <i>Exam 1</i>	

10		Atmospheric Chemistry, Physical Characteristics	
11		Chemical and Photochemical Reactions in Atmosphere	
12		Particles and Pollutants in the Atmosphere	
13		Photochemical Smog, Acid Rain, Global Warming	
14		Review of the Full Course	
15		<b><i>Examination 2, Submission of Term Papers</i></b>	
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*Updated by-2018*  
 Department of Chemistry & Environmental Sciences  
 Course Syllabus, Fall 2018

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