



Syllabus: *CHM 121N: Chemistry and Society*

Course Information

Course Title: Chemistry and Society

Course Prefix/Number: 121N

Semester: Summer 2022

Class Days/Times: MW 3:00-4:30 PM via ZOOM

Credit Hours: 4

Instructor Information

Name: Dr. Hamidou Keita

E-mail: hkeita@tocc.edu

Office location: Zoom

Office hours: MW 12-2:30 PM

Course Description

This course covers the foundation of chemistry and its relationship to everyday experiences. Skills such as conversions and problem solving techniques are also covered. Students will be introduced to laboratory techniques and participate in experimental activities that promote the development of basic and advanced science process skills.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

1. Differentiate between physical and chemical properties and changes, and between elements, compounds, and mixtures.
2. Discuss current science problems and potential problems of the future.
3. Use appropriate chemical terminology and conventions to interpret symbols and formulas, balance chemical

equations, name and write formulas for common inorganic compounds, and identify various types of chemical reactions.

4. Perform calculations involving the metric system, scientific notation, the mole concept, and concentration terms including molarity, percent, ppm, ppb and dimensional analysis.

5. Use a periodic table to identify metals, nonmetals, and metalloids, and list general physical properties for each category including Lewis dot structure.

6. Identify and properly use lab equipment such as flasks, balances, beakers etc.

Course Structure

This course is an integrated lab/lecture course. This course consists of PowerPoint lectures, assigned reading, films, activities, chemical thinking research report, discussions, laboratory projects and several quizzes.

Course Learning Materials and Textbook Information

The following books can be used. (copy and paste the link in your browser)

https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/Chemistry2e-OP_TkF9Jl3.pdf

<https://openstax.org/details/books/chemistry-2e> (to read the book online)

Lab Kits

CHM 121N1 is a lab loaded course and for that you have to get the chemistry lab kit. TOCC has promised to purchase a kit for every student. The lab kits will be mailed to you with the address provided during registration

DISCLAIMER: This syllabus is designed to evolve and change throughout the semester based on class progress and interests. You will be notified of any changes as they occur.

Courses Outline and Important Dates

Courses Outline:

1. Classification and Structure of Matter)
(05/23/22) Lab 1, HW1

A. Atomic, ionic, or molecular nature of all material

B. Atomic structure

C. Electronic arrangement

2. Radioactivity
(05/22) _HW2, Lab2, Quiz 1

A. Nuclear decay, radiation types

B. Power source

C. Societal implications, current usage

3. Compound Formation from Elements
(05/22), Lab 3. HW3. Exam 1

A. The Periodic Table of Elements

B. Metals and non-metals; their valence electrons, and periodic perspective

C. Atomic elements to ionic or molecular compounds; electron transfer and sharing

4. Electron Transfer: Electricity, Oxidation and Reduction
06/22 Lab 4, HW4, Quiz 2

A. The electrochemical cell

B. Construction of batteries

C. Corrosion, rust, and bleaching

5. Acids, Bases and Salts
(06/22 Lab 5, HW 5, Quiz 3)

- A. Definition and reaction with indicator dyes
- B. pH Scale
- C. Common acids and bases; and their relative strengths
- D. "Acid Rain" or other environmental topics related to pH

6. Chemical Quantities
(6/22_Exam 2, _HW 6 , Lab 6)

- A. The mole concept
- B. Calculation of molar mass of pure substances
- C. Interconversion of mass, mole and number of particles
- D. Molar solutions

7. Stoichiometry
(06/22) Lab 8, Reflection, HW 7,

- A. The balanced equation
- B. Equation molar and mass relationships

8. The Liquid State
(07/22) Lab 8, HW 8, Quiz 4, project

- A. Water and its unique properties
- B. Solutions and solubility
- C. Contaminants and purification

9. The Gas State (07/22) HW9, Quiz 5, Lab 9

- A. Comparison to solid, liquid states: particle density
- B. Effects of temperature and pressure on volume
- C. The atmosphere and atmospheric pressure

D. Modeling the gaseous state

10. Special Topics (07/22) HW 10, Lab 10, Exam 3, Final Exam

A. Traditional Knowledge of Chemistry

B. Lab techniques: use of flasks, balances and other classroom

C. appropriate activities

D. Other special topics selected by instructor as relevant

Evaluations and Grading & Assignments:

A=90% and above

B=80 - 89%

C=70 - 79%

D=60 - 69%

F=Under 60% is Failing

Your grade will be determined by the following:

1 Final exam 150 points = 15%

3 Exams 150 points (3 x 50) =15%

5 Quizzes (5 X 20) 100 points =10%

Labs/Reports 350 points = 35%

Research projects 50 points =5%

10 Homework 200 points (10 x 20) =20%

Total percentage= (1000 points) 100%

25% points will be deducted from late Homework or Reports. Zero score after 3 days.

Himdag Cultural Component

Himdag Cultural Component: Course will explore existing elements, materials and environmental issues where this applies to cultural chemical thinking to continue improving or restoring components of Himdag. Students will also formulate a personal ethic regarding the use of chemical thinking in science teaching and research, incorporating perspectives from Western science and TOCC Core values.

Policies and Expectations

Attendance Policy (Re: asynchronous online classes)

You are expected to complete all learning activities, participation in class, assignments and quiz by the due dates listed in the course syllabus. Four consecutive missed due dates may result in a letter grade of "F" or an instructor withdrawal "FW" (*see 45th-Day Instructor Withdrawal policy*). You may request to be excused from class for religious observances and practices, for illness, for school or work-related travel or for personal or family emergencies. If you will be absent, please notify the instructor as soon as possible.

Attendance is taken by the completion of the weekly reading/assignments which is due by 11:59 p.m. each Saturday. Attendance is taken each Sunday.

Student Faculty Communication. A faculty member will respond to a student's communication within 24 hours of receiving the communication excluding weekends and college closures. If a course is online a faculty will login their Canvas classroom a minimum of three times per week - spread evenly through-out the week - and respond to any discussion posts and check on student progress in the course.

STUDENT COMMUNICATION EXPECTATIONS

Check your mail at least once every 24 hours each weekday and plan to login into Canvas at least three times per week.

45th-Day Instructor Withdrawal Policy "FW" (Re: asynchronous online classes)

Students who have missed four (4) consecutive course due dates for learning activities, participation, assignments, quizzes, exams, by the 45th - day census report, due...are assumed NOT to be participating in the class and may be withdrawn at the faculty member's discretion. After the 45th - day census, if a student needs to stop attending a course, they must withdraw from the course (*see Student Withdrawal Policy*).

Student Withdrawal Policy "W"

Students may withdraw from class at any time during the first two-third of the semester without instructor permission and without incurring any grade penalty. Please be sure to withdraw yourself by **June 29, 2022** if you do not expect to complete the class, otherwise you may receive an "F" letter grade for the course. For more information on the student withdrawal process email admissions@tocc.edu.

Special Withdrawals (Y) Grade

The "Y" grade is an administrative withdrawal given at the instructor's option when no other grade is deemed appropriate. Your instructor must file a form stating the specific rationale for awarding this grade. "Y" grades are discouraged since they often affect students negatively. Your instructor will not award a "Y" grade without a strong reason.

Equal Access Statement/Disability Accommodations

Tohono O'odham Community College seeks to provide reasonable accommodations for qualified individuals with disabilities. The College will comply with all applicable regulations, and guidelines with respect to providing reasonable accommodations as required to ensure an equal educational opportunity. This process includes self-identifying as a student with a disability, providing supporting documentation of their disability, and being approved for services through the Disability Resources Office (DRO). It is the student's responsibility to make known to their instructor(s) the student's specific needs within the context of each class in order to receive appropriate accommodations. We will work together in order to develop an accommodation plan specifically designed to meet the individual student's requirements.

For more information or to request academic accommodations, please contact: Anthony Osborn, TOCC Disabilities Resource Coordinator, aosborn@tocc.edu, or 520-383-0033 for additional information and assistance.

Title IX

Tohono O'odham Community College encourages each student to have the knowledge and skills to be an active bystander who intervenes when anyone is observed or being harassed or endangered by sexual violence. Sexual discrimination and sexual violence can undermine students' academic success and quality of life on campus and beyond. We encourage students who have experienced or witnessed any form of sexual misconduct to talk about their experience and seek the support they need.

Confidential support and academic advocacy can be found with: Student Services Title IX Coordinator/Counselor, Alberta Espinoza, M.Ed. located in I-We:mta Ki: Room 18. Phone 520-383-0033 email: aespinoza@tocc.edu

Conduct: Bias, Bullying, Discrimination and Harassment

Tohono O'odham Community College faculty and staff are dedicated to creating a safe and supportive campus environment as a core value. Harassment based on age, class, color, culture, disability and ability, ethnicity, gender, gender identity and expression, immigration status, marital status, political ideology, race, religion/spirituality, sex, sexual orientation,

and tribal sovereign status will not be tolerated.

Policies and Expectations- Course Policies:

- 1) As an online course, students are expected to manage their own time regarding completing course modules and assessments on time. All course materials will be available online and it's your responsibility to read them in a timely manner.
- 2) Students are expected to contact the instructor prior to absences.
- 3). There is no regular scheduled meeting for this class and therefore students are solely responsible for managing their time in order to complete the course according to the datelines for each assessment.
- 4) Class participation and preparation are essential to student success. Students must read textual material, prepare for projects, complete required research as stated on the course schedule. **No face-to-face or zoom classes**, however, you are welcome to contact me for office hours.
- 5) Students are expected to log in to canvas at least 3 times a week and work diligently throughout the whole time.
- 6) Submissions of homework/assignments through emails are not allowed and will not be graded.
- 7) Failure to submit a project results in a grade of zero (0). An F is a better grade!
- 8) No work accepted after the last class
- 9) There are no extra credit work for this class

Make-up policy:

Late assignments that can be made up will be accepted but will be penalized 25%. Laboratories cannot be made up except in the case of college closure. At the instructor's discretion, extra credit opportunities and optional activities may be provided.

Academic Integrity:

Violations of scholastic ethics are considered serious offenses by Tohono O'odham Community College, the Student Services Department, and by your instructor. Students may consult the TOCC Student Handbook sections on student code of conduct, on scholastic ethics and on the grade appeal procedure. Copies are available at Tohono O'odham Community College.

All work done for this class must be your own, or the original work of your group. While you may discuss assignments with other class members, the final written project must

clearly be original. You may use work from books and other materials if it is properly cited. Copying from a book without proper reference or from a person under any circumstances will result in an "F" for the assignment, and at the instructor's discretion, possibly an "F" for the course. If you are uncertain about proper citation, ask your instructor or the librarian.

Course Feedback:

All assignments will be graded and returned to the students promptly, typically within a week after the assignment is closed for handing in. Email and phone messages will be returned within two days. A student or the instructor may request a student conference at any time during the semester. Quarterly grade reports will be provided to each student, either in person, by email or via the electronic system of Canvas.

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