Chemistry and Society
The University of Toledo
Department of Chemistry and Biochemistry
College of Natural Sciences and Mathematics
CRN: 47581 (CHEM 1100-001)

Instructor: Dr. Zin-Min Tun
Email: zinmin.tun@utoledo.edu
Office Location: BO 2034
Office Phone: (419) 530-4591
Office Hours: by appointment
Offered: Fall 2020
Course Website: Blackboard Learn
Class Location: MFH 2100
Class Day/Time: TR 2:20 – 3:40 PM
Credit Hours: 3

COURSE/CATALOG DESCRIPTION
An introduction to basic chemistry and a survey of the impact that chemistry has on society. Topics include: power, energy, and fuels; water and pollution; soaps and detergents; nutrition; poisons and toxins; plastics and polymers; drugs.

COURSE OVERVIEW
This course is offered in order to provide you with a background in chemistry to allow you to understand and appreciate various aspects of chemistry that affect your life EVERYDAY. The aim is for you to be an informed consumer, an active patient as you interact with the medical community, and, in general a citizen who is better able to make decisions which have a scientific basis – especially on important environmental issues. This is a class for any non-science major.

COURSE OBJECTIVES & LEARNING OUTCOMES
Upon completion of this course, you will be able to:

• Explain the connection between your health and what you breathe.
• Apply what you know about air pollution to ways of living that result in cleaner air.
• Describe and characterize the ozone layer.
• Discuss the interaction of radiation with matter.
• Evaluate articles on green chemistry alternatives to ozone-depleting compounds.
• Understand the different processes that take part in Earth’s energy balance.
• Evaluate how human activities contribute to global climate change.
• Analyze, interpret, evaluate, and critique news stories on global climate change including graphical data.
• Assess how fossil fuels, biofuels, and gasoline additives affect fuel economy, tailpipe emissions, human health, the environment, and sustainability issues.
• Connect global climate change with the supply and demand of water.
• Describe how green chemistry and its applications can contribute to clean water.
• Summarize possible solutions to our global water challenges.
• Compare and contrast chemical and nuclear reactions.
• Assess the risks and benefits in regard to the use of nuclear power.
• Describe ways in which food production connects to land use, water use, energy use, and issues of global climate change.
• Describe ways to decrease the carbon footprint of food you eat.
STUDENT LEARNING OUTCOMES

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

1. Explain the connection between your health and what you breathe.
2. Apply what you know about air pollution to ways of living that result in cleaner air.
3. Describe and characterize the ozone layer.
4. Discuss the interaction of radiation with matter.
5. Evaluate articles on green chemistry alternatives to ozone-depleting compounds.
6. Understand the different processes that take part in Earth’s energy balance.
7. Evaluate how human activities contribute to global climate change.
8. Analyze, interpret, evaluate, and critique news stories on global climate change including graphical data.
9. Assess how fossil fuels, biofuels, and gasoline additives affect fuel economy, tailpipe emissions, human health, the environment, and sustainability issues.
10. Connect global climate change with the supply and demand of water.
11. Describe how green chemistry and its applications can contribute to clean water.
12. Summarize possible solutions to our global water challenges.
13. Explain the causes of ocean acidification and acid precipitation.
14. Compare and contrast chemical and nuclear reactions.
15. Assess the risks and benefits in regard to the use of nuclear power.
16. Describe ways in which food production connects to land use, water use, energy use, and issues of global climate change.
17. Describe ways to decrease the carbon footprint of food you eat.

PREREQUISITES

None

TEXTS AND ANCILLARY MATERIALS

The following materials are required for this course:

1. **Textbook:** *Chemistry in Context: Applying Chemistry to Society*, 9th Ed, Middlecamp et al, ISBN 978-1259638145 [NOTE: You do not need to buy the physical copy of the textbook if you do not mind using the ebook that comes with the online homework access code only!]
3. **Calculator:** Must have the ability to handle powers of 10.

TECHNOLOGY REQUIREMENTS AND TECHNICAL SKILLS

Please view the technology considerations for this course, including technical skills needed, general technology requirements, and technology privacy policies.
Browser Check Page: Students need to have access to a properly functioning computer throughout the semester. The Browser Check Page will enable you to perform a system check on your browser, and to ensure that your browser settings are compatible with Blackboard, the course management system that hosts this course.

Software: Student computers need to be capable of running the latest versions of plug-ins, recent software and have the necessary tools to be kept free of viruses and spyware. The computer needs to run the following software, available in the Online Learning Download Center.

- Word Processing Software
- Adobe Acrobat Reader
- Apple QuickTime Player
- Java Plugin Console
- Adobe Flash Player
- Adobe Shockwave Player
- Mozilla Firefox Browser - Recommended

Internet Service: High-speed Internet access is recommended as dial-up may be slow and limited in downloading information and completing online tests. This course does contain streaming audio and video content.

Use of Public Computers: If using a public library or other public access computer, please check to ensure that you will have access for the length of time required to complete tasks and tests. A list and schedule for on-campus computer labs is available on the Open Lab for Students webpage.

UT Virtual Labs: Traditionally, on-campus labs have offered students the use of computer hardware and software they might not otherwise have access to. With UT's Virtual Lab, students can now access virtual machines loaded with all of the software they need to be successful using nothing more than a broadband Internet connection and a web browser. The virtual lab is open 24/7 and 365 days a year at VLAB: The University of Toledo’s Virtual Labs.

System requirements for McGraw-Hill Connect: "Check My Computer" is available at https://mhdemo.simnetonline.com/sp/?v=2#requirements

SimNet® Online currently requires: High-speed Internet connection, Adobe Flash Player* v10.1+*, Adobe Acrobat Reader*

Browser Required: FireFox v12+, Internet Explorer v9+, Chrome v18+, Safari v5+

Browser Recommended: FireFox v23+, Internet Explorer v10+, Chrome v28+, Safari v6+

Technical Skills: To succeed in this course, you will need to possess the following technical skills:

1. Rename, delete, organize, and save files.
2. Create, edit, and format word processing and presentation documents.
3. Copy, paste, and use a URL or web address.
4. Download and install programs and plug-ins.
5. Send and receive email with attachments.
6. Locate and access information using a web search engine.
7. Use chat or IM software for real-time communication.
8. Use a learning management system.
9. Use a basic calculator.
ACCESSIBILITY OF COURSE TECHNOLOGIES
Please view Accessibility of Course Technologies for information regarding the accessibility of Blackboard and other technologies used in this course.

ACADEMIC POLICIES
All students at the University of Toledo are expected to read, understand, and follow the academic policies that govern their attendance at the University. These policies include, but are not limited to, academic dishonesty, academic forgiveness, adding and dropping a course, grades and grading, and the missed class policy. Please use the following URL to read a comprehensive list of academic policies that pertain to you in this class and throughout your academic journey: http://www.utoledo.edu/policies/academic/undergraduate/. If you have any questions after reading through the policies, please let me know.

COURSE POLICIES
Subject to Change: Any changes to the Syllabus will be announced in class, through Blackboard or your rockets email.

Communication: You are urged to communicate with me about any aspect of the course with concerns you or which might limit your success. Please allow for 24-48 hours, not including weekends or holidays, for a reply from Dr. Tun Please also make sure that you include your course number and section number (CHEM1100-001) either in the subject line or in the body of the email to facilitate the communication. We want you to be successful in this course so let’s work together!

Netiquette: It is important to be courteous and civil when communicating with others. Students taking online courses are subject to the Student Code of Conduct. To ensure your success when communicating online, take time to familiarize yourself with the “dos" and "don'ts" of Internet etiquette.

Drop, Withdrawal and Incomplete Grades: Course drop and withdrawal procedures have been set by the University faculty. Pay attention to those add/drop dates as they pass very quickly during the semester! For both dropping the course or withdrawing you should go to Rocket Solution Central in Rocket Hall. You do not need your instructor’s permission for either process. Please note that course registration changes might change your financial aid.

A course grade of Incomplete is given only to those who have completed all but a small percentage of course requirements for an acceptable reason. If you have a serious problem near the end of the course, communicate with me as soon as possible. You will retain all of your previously determined grades.

Copyright Notice: The materials in the course website are only for the use of students enrolled in this course for purposes associated with this course, and may not be retained or further disseminated.

Academic Dishonesty: You are urged to refer to the university’s policy on Academic Dishonesty in the university catalogue. Violation of this policy can result in a course grade of F with additional university sanctions possible.

Should cases of academic dishonesty be found among students, the instructor may choose to counsel the student, or the following sanctions may be imposed:

• The student may be assigned an F for the work in question.
• The student may be assigned an F for the course. In this case the instructor should inform the Dean and the student of this action. The Dean will make certain that the student receives the F grade and is not permitted to withdraw from the course.

• The student may be placed on probation or suspended for some definite period of time, dismissed or expelled by the Dean if either the seriousness of the offense or a record of repeated offenses warrants it. A notation that such a sanction has been imposed will be made part of the student’s permanent record. It is expected that the Dean will consult with the instructor and the student in making such a judgment, and that the Dean will notify the student of the sanction imposed and of the appeals procedure.

A student found to be academically dishonest by a faculty member may appeal according to procedures approved by the respective colleges. The procedures for making a final appeal to the Student Grievance Committee may be found in the Student Handbook.

IMPORTANT COVID-19 SPECIFIC RULES
Due to the current additional requirements implemented to prevent the spread of Covid-19, some important changes were made to this semester’s course. Seats in MFH 2100 will be clearly marked as seats to be used or not. Please choose a seat that is marked to be used. We will create a seating chart, and you are asked to sit in the same seat every week. This is important in case anyone in our class should be exposed to a Covid-infected person, as it will determine exposure for contact tracing.

OVERVIEW OF COURSE GRADE ASSIGNMENT
GRADING POLICIES
The grade for this course is based upon the following components:

<table>
<thead>
<tr>
<th>(ASSESSMENT MEASURES)</th>
<th>ASSIGNMENTS/EXERCISES/EXAMS</th>
<th>TOTAL POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LearnSmart</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>End of Chapter Quizzes</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>Midterm Exams 2 @100 points</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Course Project</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
<td></td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>840</strong></td>
<td></td>
</tr>
</tbody>
</table>

Grade Scale
The grading scale in this course is as follows:

- A 93%
- A- 90%
- B+ 87%
- B 83%
- B- 80%
- C+ 77%
- C 73%
- C- 70%
- D+ 67%
- D 63%
- D- 60%
- F <59%
Assignments/Assessment Descriptions

**LearnSmart:** Complete the LearnSmart module after you have read the chapter assignment. The LearnSmart assignment will have a deadline for completion such that points will only be earned if this deadline is met. You can complete this assignment as many times as you wish. Each is designed to be completed in 30 minutes or less. But you should not attempt these assignments unless you have read the book. Each is worth 10 points.

**Quizzes:** End of Chapter quizzes are designed to test your knowledge and are primarily based on the end-of-chapter questions. Complete these after watching the PowerPoint video. Each is worth 30 points. For full credit you must complete it correctly by the deadline.

**Midterm Exams:** There will be two midterm exams and each exam will be worth 100 points.

**Course Project:** The purpose of this assignment is for you to use the information that you learned this semester to analyze a news story about our topics. In this project, you will summarize an assigned article, connect the information from the article with what you have learned in the course about that topic, draw a connection to everyday life, and propose future actions if relevant. Course project is worth 50 points.

**Final Exam:** The final exam will be held only on the scheduled date. All chapters covered in this course will be on the final exam. Final exam is worth 100 points.

**Midterm Grading**
Midterm grades are assigned the 8th week of class and are used to assist students with determining their academic standing. Attendance is also recorded during the 8th week to meet state and federal laws regarding financial aid disbursement. Please note, if you are not attending class it could affect your financial aid (scholarships, grants, loans or Federal Work Study). If you decide you are not going to attend this class (or any other class you have registered for), you must formally withdraw (drop) from the course. You can do this by logging on to the myUT portal, clicking on the “Student” tab, and then under “My Toolkit” click on Register/Drop/Withdraw.

**Final Grading**
Your final grades will be calculated based on a total of 840 points.

**UNIVERSITY POLICIES**
Your safely and well-being as a University of Toledo student is important to the faculty, staff, and administration; as such please take a minute to review the following university policies that apply to you as a student of the University:

- [https://www.utoledo.edu/title-ix/policies.html](https://www.utoledo.edu/title-ix/policies.html)
- The University of Toledo's Title IX (Sexual Misconduct) Policy - 3364-50-01
- Nondiscrimination 3364-50-02
- Nondiscrimination on the basis of disability - Americans with Disability Act compliance 3354-50-03
- Consensual romantic and/or sexual relationships - Policy 3364-25-65
- Student Code of Conduct 3364-30-04
Please use this URL to view a more comprehensive list of student policies:
https://www.utoledo.edu/policies/audience.html/#students

**Academic Accommodations**  The University of Toledo embraces the inclusion of students with disabilities. We are committed to ensuring equal opportunity and seamless access for full participation in all courses. For students who have an accommodations memo from Student Disability Services, I invite you to correspond with me as soon as possible so that we can communicate confidentially about implementing accommodations in this course. For students who have not established affiliation with Student Disability Services and are experiencing disability access barriers or are interested in a referral to healthcare resources for a potential disability or would like information regarding eligibility for academic accommodations, please contact the Student Disability Services Office (http://www.utoledo.edu/offices/student-disability-services/) by phone: 419.530.4981 or email at StudentDisability@utoledo.edu.

**ACADEMIC AND SUPPORT SERVICES**
Please follow this link to view a comprehensive list of Student Academic and Support Services (http://www.utoledo.edu/studentaffairs/departments.html) available to you as a student.

**SAFETY AND HEALTH SERVICES FOR UT STUDENTS**
Please use the following link to view a comprehensive list Campus Health and Safety Services available to you as a student.

**INCLUSIVE CLASSROOM STATEMENT**
In this class, we will work together to develop a learning community that is inclusive and respectful. Our diversity may be reflected by differences in race, culture, age, religion, sexual orientation, gender identity/expression, socioeconomic background, and a myriad of other social identities and life experiences. We will encourage and appreciate expressions of different ideas, opinions, and beliefs so that conversations and interactions that could potentially be divisive turn, instead, into opportunities for intellectual and personal development.
# Course Schedule

*Please note that this schedule is tentative and may change if needed.*

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>8/18</td>
<td>Portable Electronics: The Periodic Table in the Palm of Your Hand (Ch. 1)</td>
<td>LS Ch1_P1; LS Ch1_P2; Ch1_Q</td>
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<td></td>
<td>8/20</td>
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<tr>
<td>2</td>
<td>8/25</td>
<td>The Air We Breathe (Ch. 2)</td>
<td>LS Ch2_P1; LS Ch2_P2</td>
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<td></td>
<td>8/27</td>
<td></td>
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<tr>
<td>3</td>
<td>9/1</td>
<td>The Air We Breathe (Ch. 2)</td>
<td>LS Ch2_P3; Ch2_Q; LS Ch3_P1; LS Ch3_P3; Ch3_Q</td>
</tr>
<tr>
<td></td>
<td>9/3</td>
<td>Radiation from the Sun (Ch. 3)</td>
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<tr>
<td>4</td>
<td>9/8</td>
<td>Radiation from the Sun (Ch. 3)</td>
<td>Ch3_P2; LS Ch3_P3; Ch3_Q</td>
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<tr>
<td></td>
<td>9/10</td>
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<tr>
<td>5</td>
<td>9/15</td>
<td>Climate Change (Ch. 4)</td>
<td>LS Ch4_P1; LS Ch4_P2</td>
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<td></td>
<td>9/17</td>
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<tr>
<td>6</td>
<td>9/22</td>
<td>Climate Change (Ch. 4)</td>
<td>LS Ch4_P3; Ch4_Q</td>
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<td></td>
<td>9/24</td>
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<tr>
<td>7</td>
<td>9/29</td>
<td>Exam 1 (Chapters 1-4)</td>
<td>LS Ch5_P1</td>
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<tr>
<td></td>
<td>10/1</td>
<td>Energy from Combustion (Ch. 5)</td>
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<tr>
<td>8</td>
<td>10/6</td>
<td>Energy from Combustion (Ch. 5)</td>
<td>LS Ch5_P2; Ch5_Q</td>
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<td></td>
<td>10/8</td>
<td></td>
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<tr>
<td>9</td>
<td>10/13</td>
<td>Energy from Alternative Sources (Ch. 6)</td>
<td>LS Ch6_P1</td>
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<td></td>
<td>10/15</td>
<td></td>
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<tr>
<td>10</td>
<td>10/20</td>
<td>Energy from Alternative Sources (Ch. 6)</td>
<td>LS Ch6_P2; Ch6_Q; LS Ch7_P1</td>
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<td></td>
<td>10/22</td>
<td>Energy Storage (Ch. 7)</td>
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<tr>
<td>11</td>
<td>10/27</td>
<td>Energy Storage (Ch. 7)</td>
<td>LS Ch7_P2; Ch7_Q</td>
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<td>10/29</td>
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<tr>
<td>12</td>
<td>11/3</td>
<td>Water Everywhere: A Most Precious Resource (Ch. 8)</td>
<td>LS Ch8_P1; LS Ch8_P2</td>
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<td></td>
<td>11/5</td>
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<tr>
<td>13</td>
<td>11/10</td>
<td>Water Everywhere: A Most Precious Resource (Ch. 8)</td>
<td>LS Ch8_P3; Ch8_Q</td>
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<td>11/12</td>
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<tr>
<td>14</td>
<td>11/17</td>
<td>Exam 2 (Chapters 5-8)</td>
<td>LS Ch8_P1</td>
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<td></td>
<td>11/19</td>
<td>Nutrition (Ch. 11)</td>
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<tr>
<td>15</td>
<td>11/24</td>
<td>Nutrition (Ch. 11)</td>
<td>LS Ch11_P2; Ch11_Q; Course Project</td>
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<tr>
<td></td>
<td>11/26</td>
<td>No Class – Thanksgiving Break!</td>
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</tr>
<tr>
<td>16</td>
<td>12/1</td>
<td>Final Exam (Tuesday 2:45 – 4:45 PM)</td>
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