



# CHEM\*1100DE Chemistry Today Course Outline

Winter 2016  
Department of Chemistry  
College of Physical and Engineering Science

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## Instructor Contact

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## Course Information

Course Title: Chemistry Today  
Pre-Requisites: None  
Co-Requisites: None  
Restriction(s): CHEM\*1040  
Credits: 0.50  
Course Website (If applicable): [CourseLink](#)  
Method of Delivery: Distance Education, Fully Online

## Calendar Description

This chemistry course for non-scientists will outline the involvement of chemistry in our daily lives and will provide an appreciation of chemistry from atoms to important complex molecules. Topics will include energy sources, air and water pollution, natural and synthetic polymers, household chemicals, foods, drugs and biochemicals.

## Course Description

Chemistry is a fascinating area of study that affects us all. The human body is made up of a staggering number of chemicals and chemical reactions are responsible for life itself! From the moment you arrive on earth to the moment you make your final exit you are confronted with a vast array of both naturally occurring and synthetic chemicals and chemical reactions. Just consider the food you consume, the air you breathe, the cosmetic products you use, the clothes you wear and the cars you drive. The impact of chemistry on your daily life is truly mind-boggling. While many modern chemical products have greatly improved our lives, others have led to much damage to our natural environment. However, while toxic wastes, acid rain, climate change and ozone depletion are all a result of our careless application of chemical principles, I would argue that it is only through a solid understanding of chemical concepts that we will be able to solve these problems. Even if you don't pursue a career in chemistry, a solid understanding of these concepts will help you make sense of the observations you make every day.

## Course Learning Outcomes

Specific Learning Outcomes for each unit of the course can be found on the course website (on Courselink).

## About Your Instructor

Hello, my name is Dr. Kim Bolton and I will be guiding you through this course. I am an environmental soil and water chemist and I am very enthusiastic about chemistry and education. My goal is to instill in you an appreciation and enthusiasm for the exciting world of chemistry. **Chemistry Today** is a good place for you to start your journey!

## Course Structure

The course is divided into eleven (11) units and is delivered over 12 weeks. A summary table of the units and weeks is found on the Coursework page.

Each course unit is broken down into a number of topics and each topic generally involves reading several sections in the textbook and completing a variety of activities, some graded, some ungraded.

## UNGRADED ACTIVITIES

Completing "Assigned Questions and Problems from Text":

These questions/problems are assigned from the end-of-chapter "Questions and Problems" in order to:

- provide reinforcement of the principles covered
- allow you to practice problem solving techniques
- check your own knowledge before examinations.

Work done on these questions/problems is not graded, but there is a good correlation between mastering the problems on a week-by-week basis and performance in the course as a whole. A common reason why students fail chemistry courses is that they fall so far behind with the material that they never catch up. Units become more difficult to comprehend without the reinforcement of constant practice! In most cases I have assigned odd numbered questions because the answers for these questions are given in the back of the textbook.

## Learning Resources

### \*Required Textbook(s)

Title: Chemistry in Focus: A molecular view of our world

Author(s): Nivaldo J. Tro

Edition / Year: 6<sup>th</sup> Edition, 2015

Publisher: Cengage Learning US

ISBN: 9781305084476

You may purchase the textbook(s) at the [University of Guelph Bookstore](#) or the [Guelph Campus Co-op Bookstore](#).

### eReserve

For this course you will be required to access electronic resources through the University of Guelph McLaughlin Library. To access these items visit the eReserve link in the top navigation bar. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit [How to Get Course Reserve Materials](#).

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning and Reserve Services Staff at:

Tel: [519-824-4120 ext. 53621](tel:519-824-4120)

Email: [libres2@uoguelph.ca](mailto:libres2@uoguelph.ca)

Location: McLaughlin Library, First Floor, University of Guelph

## **Schedule: Week 1**

### **Unit 01: Some Fundamental Chemical Principles**

#### **Required Reading**

##### ***Website:***

Unit 1 Content

##### ***Textbook:***

Chapters 1 & 2

#### **Activities & Assignments**

Text Questions Chapter 1: 5, 6, 9, 12-16, 23, 27, 29, 31, 35, 37, 39

Text Questions Chapter 2: 4, 12, 15, 17, 19, 21, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43

## **Schedule: Week 2**

### **Unit 02: Atoms and Elements**

#### **Required Readings**

##### **Website:**

Unit 2 Content

##### ***Textbook:***

Chapter 3

#### **Activities & Assignments**

Text Questions Chapter 3: 5, 12, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 41, 43, 45, 47

Graded Homework Assignment

Quiz 1

## **Schedule: Week 3**

### **Unit 03: Compounds and Chemical Reactions**

#### **Required Readings**

##### **Website:**

Unit 3 Content

##### ***Textbook:***

Chapter 4

#### **Activities & Assignments**

Text Questions Chapter 4: 5, 7, 15, 17, 19, 21, 23, 27, 29, 31, 37, 39, 41, 43 a, b, c, 49, 51, 53 a, b

(5<sup>th</sup> edition: 5, 7, 15, 17, 19, 21, 23, 25, 27, 29, 35, 37, 39, 41 a, b, c, 47, 49, 51 a, b)

Graded Homework Assignment

## **Schedule: Week 4**

### **Unit 04: Chemical Bonding**

#### **Required Readings**

#### **Website:**

Unit 4 Content

#### ***Textbook:***

Chapter 5

#### **Activities & Assignments**

Text Questions Chapter 5: 1, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 33

Graded Homework Assignment

Quiz 2

## **Schedule: Week 5**

### **Unit 05: Organic Chemistry**

#### **Required Readings**

#### **Website:**

Unit 5 Content

#### ***Textbook:***

Chapter 6

#### **Activities & Assignments**

Text Questions Chapter 6: 3, 9, 11, 12, 15, 16, 21, 29, 31, 39, 41, 43, 45, 47, 49, 51, 55, 57, 59

(5<sup>th</sup> edition: 3, 9, 11, 12, 15, 16, 21, 29, 31, 39, 41, 43, 45, 47, 49, 51, 55, 57, 59)

Graded Homework Assignment

Quiz 3

## **Schedule: Week 6**

### **Unit 06: Acids and Bases**

#### **Required Readings**

##### **Website:**

Unit 6 Content

##### ***Textbook:***

Chapter 13

#### **Activities & Assignments**

Text Questions Chapter 13: 2, 3, 5, 7, 10, 12, 13, 17, 20, 21, 29, 31, 33, 35, 37, 39, 41

Graded Homework Assignment

## **Schedule: Week 7**

### **Unit 07: Household Chemicals**

#### **Required Readings**

#### **Website:**

Unit 7 Content

#### ***Textbook:***

Chapter 14: Sections 14.2 – 14.4

Chapter 15

#### **Activities & Assignments**

Text Questions Chapter 14: 4, 5, 11, 23, 25, 27, 29, 31

Text Questions Chapter 15: 1-44, 45, 47, 49, 51, 53, 57, 59

## **Schedule: Week 8 & 9**

### **Unit 08: Biochemistry and the Chemistry of Pharmaceuticals**

#### **Required Readings**

#### **Website:**

Unit 8 Content

#### ***Textbook:***

Chapter 16: Sections 16.1 – 16.6

Chapter 17: Sections 17.1 – 17.3, 17.5, 17.6, 17.8, 17.10, 17.11

#### **Activities & Assignments**

Text Questions Chapter 16: 2 to 22, 45, 47, 49, 53, 55, 57

Text Questions Chapter 17: 1 to 6, 9 to 23, 25, 26, 27, 32 to 37, 47 to 52, 65, 67

## **Schedule: Week 10**

### **Unit 09: Chemistry of Food**

#### **Required Readings**

#### **Website:**

Unit 9 Content

#### ***Textbook:***

Chapter 18

#### **Activities & Assignments**

Text Questions Chapter 18: 1-55, 57, 59, 61, 63, 65, 67, 71

## **Schedule: Week 11**

### **Unit 10: Nuclear Chemistry**

#### **Required Readings**

#### **Website:**

Unit 10 Content

#### ***Textbook:***

Chapter 8 (excluding Sections 8.8 & 8.9)

#### **Activities & Assignments**

Text Questions Chapter 8: 1 to 6, 8, 11, 17, 18, 19, 24 to 30, 31, 33, 35, 37, 39, 41, 47, 49, 51, 55

Graded Homework Assignments

Online Quiz 4

## **Schedule: Week 12**

### **Unit 11: Chemistry and the Environment**

#### **Required Readings**

#### **Website:**

Unit 11 Content

#### ***Textbook:***

Chapter 11: Sections 11.5, 11.6, 11.9 – 11.11

Chapter 9: Sections 9.7 – 9.10, 9.12

Chapter 12: Sections 12.7 – 12.15

#### **Activities & Assignments**

Text Questions Chapter 9: 13, 18, 20-30

Text Questions Chapter 11: 25-36

Text Questions Chapter 12: 13, 16-21, 23, 25

## Course Evaluation

The grade determination for this course is indicated in the following table.

Table 1: Course Evaluation

Assignments	Value
Online Quizzes	10%
Graded Homework	15%
Online Midterm Examination	20%
Written Assignment	15%
Final Exam	40%
<b>Total</b>	<b>100%</b>

## Technical Requirements

Students are responsible for ensuring that their computer system meets the necessary [specific technical requirements](#) of their program.

## Technical Support

If you need any assistance with the software tools or the website, contact the Open Learning and Educational Support (OpenEd) Help Desk.

Open Learning and Educational Support  
University of Guelph  
Day Hall, Room 211

Email: [help@OpenEd.uoguelph.ca](mailto:help@OpenEd.uoguelph.ca)  
Tel: 519-824-4120 ext. 56939  
Toll-Free (CAN/USA): 1-866-275-1478

### Hours of Operation (Eastern Time):

Monday - Friday: 8:30am – 8:30pm  
Saturday: 10:00am – 4:00pm  
Sunday: 12:00pm – 6:00pm

## **Policies and Procedures**

As a student of the University of Guelph, it is important for you to understand your rights and responsibilities and the academic rules and regulations that you must abide by.

If you are a registered University of Guelph Degree Student, consult the [Undergraduate Calendar](#) for the rules, regulations, curricula, programs and fees for current and previous academic years.

If you are an Open Learning Program Student, consult the [Open Learning Program Calendar](#) for information about University of Guelph administrative policies, procedures and services.

## **Email Communication**

### **University of Guelph Degree Students**

As per university regulations, all students are required to check their uoguelph.ca e-mail account regularly: e-mail is the official route of communication between the University and its students.

### **Open Learning Program Students**

Check your email account (the account you provided upon registration) regularly for important communications, as this is the primary conduit by which the Open Learning and Educational Support will notify you of events, deadlines, announcements or any other official information.

## **When You Cannot Meet Course Requirements**

When you find yourself unable to meet an in-course requirement due to illness or compassionate reasons, please advise your course instructor in writing, with your name, ID number and email contact.

### **University of Guelph Degree Students**

Consult the [Undergraduate Calendar](#) for information on regulations and procedures for Academic Consideration.

### **Open Learning Program Students**

Please refer to the [Open Learning Program Calendar](#) for information on regulations and procedures for requesting Academic Consideration.

## **Drop Date**

### **University of Guelph Degree Students**

The last date to drop one-semester courses, without academic penalty, is indicated in the Schedule section of this course website. [See the Undergraduate Calendar for regulations and procedures for Dropping Courses.](#)

### **Open Learning Program Students**

Please refer to the [Open Learning Program Calendar.](#)

## **Copies of Assignments**

Keep paper and/or other reliable back-up copies of all assignments: you may be asked to resubmit work at any time.

## **Accessibility**

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment.

### **University of Guelph Degree Students**

Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email [SAS](#) or [visit the SAS website.](#)

### **Open Learning Program Students**

If you are an Open Learning program student who requires academic accommodation, please [contact the Academic Assistant to the Director.](#) Please ensure that you contact us before the end of the first week of your course (every semester) in order to avoid any delays in support. Documentation from a health professional is required for all academic accommodations. Please note that all information provided will be held in confidence.

If you require textbooks produced in an alternate format (e.g., DAISY, Braille, large print or eText), please [contact the Academic Assistant to the Director](#) at least two months prior to the course start date. If contact is not made within the suggested time frame, support may be delayed. It is recommended that you refer to the course outline before beginning your course in order to determine the required readings.

The provision of academic accommodation is a shared responsibility between OpenEd and the student requesting accommodation. It is recognized that academic accommodations are intended to “level the playing field” for students with disabilities.

## **Academic Misconduct**

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The [Academic Misconduct Policy](#) is detailed in the Undergraduate Calendar.

## **Acceptable Use**

The University of Guelph has an [Acceptable Use Policy](#), which you are expected to adhere to.

## **Copyright Notice**

All content within this course is copyright protected. Third party copyrighted materials (such as book chapters and articles) have either been licensed for use in this course, or have been copied under an exception or limitation in Canadian Copyright law.

The fair dealing exemption in Canada's Copyright Act permits students to reproduce short excerpts from copyright-protected materials for purposes such as research, education, private study, criticism and review, with proper attribution. Any other copying, communicating, or distribution of any content provided in this course, except as permitted by law, may be an infringement of copyright if done without proper license or the consent of the copyright owner. Examples of infringing uses of copyrighted works would include uploading materials to a commercial third party web site, or making paper or electronic reproductions of all, or a substantial part, of works such as textbooks for commercial purposes.

Students who upload to CourseLink copyrighted materials such as book chapters, journal articles, or materials taken from the Internet, must ensure that they comply with Canadian Copyright law or with the terms of the University's electronic resource licenses.

For more information about students' rights and obligations with respect to copyrighted works, see [Fair Dealing Guidance for Students](#).

## Grades

The assignment of grades at the University of Guelph is based on clearly defined standards, which are published in the Undergraduate Calendar for the benefit of faculty and students.

### Grading System

In courses, which comprise a part of the student's program, standings will be reported according to the following schedule of grades:

Letter Grade	Percentage
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	64-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	0-49

## **Statement of Students' Academic Responsibilities**

Your success as a student depends above all on your own response to the opportunities and responsibilities that the university environment provides. The University of Guelph is committed to supporting you in your intellectual development and responding to your individual needs. To this end, a broad network of advising, counselling, and support services is provided to assist you in meeting your personal and academic goals.

For more information on your responsibilities as a student, see [Statement of Students' Academic Responsibilities](#).

## **Plagiarism Detection Software**

Students should be aware that faculty have the right to use software to aid in the detection of plagiarism or copying and to examine students orally on submitted work. For students found guilty of academic misconduct, serious penalties, up to and including suspension or expulsion from the University can be imposed.

## **Recording of Materials**

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

## **Religious Holidays**

Should a student need to miss scheduled tests, mid-term examinations, final examinations, or requirements to attend classes and participate in laboratories for religious reasons, please advise the instructor within two weeks of the distribution of this course outline so that alternate arrangements can be made.