Fall 2018 CHEM*1040 – IMPORTANT INFORMATION

Items that need your immediate attention

1. COURSELINK WEBSITE – *http://courselink.uoguelph.ca*

Your **Username** is the part of your U of G e-mail address before the "@" sign and your **password** is the same as your e-mail account. Access this site regularly for announcements, assessments and resources. Review the *Fall 2018 CHEM*1040 Course Outline* (located under the "Content" tab), as **you are responsible for <u>all</u> its contents.**

2. COURSE PREREQUISITE: 4U Chemistry, Grade 12 Chemistry, CHEM*1060 or equivalent

Students who have not successfully completed the pre-requisite **<u>must</u>** complete CHEM*1060 before CHEM*1040.

3. COURSE MATERIALS

(a) **Textbook:** D. Ebbing and S. Gammon, <u>General Chemistry</u>. Students can use the 10th, 9th or 8th ed. (and for CHEM*1050 next semester). The publisher provides a 10th ed. textbook package including the Student Solutions Manual. This package can be purchased from one of the campus bookstores.

Note: 10th edition copies of the text and solutions manual are found on Library Course Reserve.

(b) **CHEM*1040 Laboratory Manual & Organic Chemistry Notes** can only be purchased from the Chemistry Department. Sales run Sept. 6, 7, 10, 11 and 12, 9:30 AM – 3:30 PM in SSC 2106.

(c) **Safety Goggles** (not safety glasses) and a **Lab coat** are **both required**.
Goggles can be purchased from either the Chemistry Department or University Bookstore.
A lab coat can be purchased from either the Chemistry & Biochemistry Club in SSC 2111 for $20 (cash sales <u>only</u>; Sept. 6, 7, 10 & 11, 9 AM – 4 PM or until sold out), or from the University Bookstore.

(d) **Scientific calculator** with ln, e^x, $\log_{10}$ and 10^x functions is required. Note: Calculators or notebook computers capable of storing text information are **<u>NOT</u>** allowed in examinations.

(e) **Organic/Inorganic Molecular Model Kit** will assist in visualising molecular shapes, organic chemistry structures and Dry Lab D exercises. A kit can be purchased from one of the bookstores.

(f) **MasteringChemistry** (optional) – to complete the optional online homework assignments one must purchase access to an account. There is a ***grace period*** on payment of two weeks, so one can explore the site prior to paying. A 24-month access card can be purchased from the University Bookstore (h*ttp://bookstore.uoguelph.ca/t-digitalsearch.aspx;* $74.25), the Co-op Bookstore ($66) or the MasteringChemistry site ($66). W'19 CHEM*1050 will offer optional homework, so your access covers both courses. To set-up an account, please follow the registration instructions provided on CourseLink under *Content >> Course Resources >> MasteringChemistry Info.*

4. "WET" LABORATORY – Begins Monday, Sept. 10 – see Lab schedule on next page.

The lab is a required component of this course. Attendance is based on your lab section number, *e.g.*, CHEM*1040*0234 has the section number 0234, where the last two are the lab section (*i.e.*, 34, Wed. 7:00 PM). If your lab section ends with an **odd** number (*i.e.*, 1, 3, 5, 7 or 9), then you follow the "**Week Acid Schedule**". If your lab section ends with an even number (*i.e.*, 2, 4, 6, 8 or 0), as in the case of lab section 34, you follow the "Week Base Schedule".

Students must complete the CourseLink course entitled "*Student Science Safety*" with a grade of 90% or better, before they can undertake any experiments. It takes 2-3 hours to complete. You have unlimited attempts to obtain the passing grade. Upon successful completion, you receive an electronic badge that you will need to show your Lab Teaching Assistant (print or electronic form), as proof of completion, prior to being allowed to participate in Experiment #1.

FALL 2018 CHEM*1040 LABORATORY SCHEDULE

DATE	"WEEK ACID" Schedule (Sections ending with **ODD** number)	Activity	"WEEK BASE" Schedule (Sections ending with **EVEN** number)	Activity
Week 1 Sept. 10 – 14	**Arrive for regular starting time.** Sign-in & safety training. Safety training is mandatory and a legal requirement.	Bring Class Schedule & Lab Manual (no lab coat or goggles)	**Arrive 90 min after regular starting time** (*i.e.*, for 10 AM, 4 PM or 8:30 PM)**.** Sign-in & safety training. Safety training is mandatory and a legal requirement.	Bring Class Schedule & Lab Manual (no lab coat or goggles)
Week 2 Sept. 17 – 21	**Arrive for regular starting time.** Experiment 1: Introduction to Laboratory Equipment	**Pre-lab quiz on Safety & Exp't 1**	**Arrive 90 min after regular starting time.** Experiment 1: Introduction to Laboratory Equipment	**Pre-lab quiz on Safety & Exp't 1**
Week 3 Sept. 24 – 28	**Arrive for regular starting time.** Experiment 2: Chemical Reactions in Aqueous Solution	**Pre-lab Quiz on Exp't 2**	**Do not go to lab room this week.** *Online Computer Lab:* *Dry Lab A: Atomic Spectroscopy*	*Dry Lab A Marking Module*
Week 4 Oct. 1 – 5	**Do not go to lab room this week.** *Online Computer Lab:* *Dry Lab A: Atomic Spectroscopy*	*Dry Lab A Marking Module*	**Arrive at regular starting time.** Experiment 2: Chemical Reactions in Aqueous Solution	**Pre-lab Quiz on Exp't 2**
Atomic Spectroscopy Marking Module DEADLINE: Sunday, October 7, 11:55 PM				
Week 5 Oct. 10 – 12 (No classes Oct. 8 & 9)	**No Lab** **Independent Study**	**No pre-lab quiz**	**No Lab** **Independent Study**	**No pre-lab quiz**
Week 6 Oct. 15 – 19	**Arrive for regular starting time.** Experiment 3: Standardization of Sodium Hydroxide	**Pre-lab Quiz on Exp't 3**	**Do not go to lab room this week.** *Online Computer Lab:* *Dry Lab B: Volumetric Analysis*	*Dry Lab B Marking Module*
Week 7 Oct. 22 – 26	**Do not go to lab room this week.** *Online Computer Lab:* *Dry Lab B: Volumetric Analysis*	*Dry Lab B Marking Module*	**Arrive at regular starting time.** Experiment 3: Standardization of Sodium Hydroxide	**Pre-lab Quiz on Exp't 3**
Volumetric Analysis Marking Module DEADLINE: Sunday, October 28, 11:55 PM				
Week 8 Oct. 29 – Nov. 2	**Arrive at regular starting time.** Experiment 4: Synthesis of Aspirin **Online report due 11:55 PM NEXT day.**	**Pre-lab Quiz on Exp't 4**	**Do not go to lab room this week.** *Online Dry Lab C:* *Gaseous Equilibria*	*Dry Lab C Marking Module*
Week 9 Nov. 5 – 9	**Do not go to lab room this week.** *Online Dry Lab C:* *Gaseous Equilibria*	*Dry Lab C Marking Module*	**Arrive at regular starting time.** **Experiment 5:** Buffers, Titration Curves and Indicators	**Pre-lab Quiz on Exp't 5**
Gaseous Equilibria Marking Module DEADLINE: Sunday, November 11, 11:55 PM				
Week 10 Nov. 12 – 16	**Arrive at regular starting time.** Experiment 5: Buffers, Titration Curves and Indicators	**Pre-lab Quiz on Exp't 5**	**Do not go to lab room this week.** *Online Dry Lab D:* *Aspects of Organic Chemistry*	*Dry Lab D Marking Module*
Week 11 Nov. 19 – 23	**Do not go to lab room this week.** *Online Dry Lab D:* *Aspects of Organic Chemistry*	*Dry Lab D Marking Module*	**Arrive at regular starting time.** Experiment 4: Synthesis of Aspirin **Online report due 11:55 PM NEXT day.**	**Pre-lab Quiz on Exp't 4**
Organic Chemistry Marking Module DEADLINE: Sunday, November 25, 11:55 PM				
Week 12 Nov. 26 – 28 (No labs Nov. 29 & 30)	**Arrive at regular starting time.** Clean-up & Final Exam Problems Lab (Thursday, Friday and exempt students may attend any lab this week)	Attempt problems (posted on CourseLink) ***prior*** to lab.	**Arrive 90 min after regular starting time.** Clean-up & Final Exam Problems Lab (Thursday, Friday and exempt students may attend any lab this week)	Attempt problems (posted on CourseLink) ***prior*** to lab.
	Any remaining lab excuses must be submitted online by **5 PM on Friday Nov. 30** else a grade of zero is assigned.			

Laboratory Exemptions (for those repeating CHEM*1040): *www.chemistry.uoguelph.ca/labexemption*

Deadline to apply: Tues., September 11. Students who obtained a "wet" lab grade of **at least 60%,** but who failed the course as a whole, may apply for a lab exemption. The lab work must have been completed in W'17, F'17 or W'18, with a maximum of one excused experiment. One must successfully apply online, by the deadline, to be granted a "wet" lab exemption. If exempted, students still must complete all online "dry" labs.

5. EVALUATION

(a) The final course grade will be calculated based on the scheme that produces the highest grade:

Course Components	*Scheme #1:*	*Scheme #2:*
Optional Online Homework (Mastering Chemistry)	10%	0%
Online "Wet" Pre-lab Quizzes (CourseLink)	3%	3%
Online "Dry" Lab Work (CourseLink)	10%	10%
"Wet" Lab Reports (General Lab Marker System/ULab)	12%	12%
Midterm Exam (Saturday, Oct. 13, 9:45 AM)	28%	33%
Final Exam (Tuesday, Dec. 4, 7:00 PM)	37%	42%

Note: To obtain credit, a minimum of 50% in the overall course AND at least five out of the nine lab activities must have been completed, else a maximum final grade of 49% is assigned.

(b) **MasteringChemistry** (optional)

Interactive homework is a way to keep up with the course and test your understanding. If you choose to complete the optional assignments, the weight of your midterm and final exam will be reduced (Scheme #1). Quizzes are **due Fridays 11:55 PM**, starting Sept. 21, and the adaptive follow-ups are due the following **Tuesday 11:55 PM**. Further info is provided on CourseLink.

(c) **Online "Wet" Pre-laboratory Quizzes** (*CourseLink >> Content >> Pre-Lab Quizzes*)

These quizzes are based on the "wet" lab activities you will perform **– refer to Lab Schedule**. To prepare, review your lab manual. Quizzes open the Thursday before your particular "wet" lab week and closes 60 min. prior to the start of your lab period. Using universal design principles, all students are given ample time to complete these quizzes. You have two attempts at each quiz and the highest score is recorded. Each quiz is available for review only after the final quiz deadline for the class. If a quiz is not attempted, a grade of zero is assigned. Quiz#1 opens Thurs., Sept. 13.

(d) **Online "Dry" Laboratory Work** (*CourseLink >> Content >> Online "Dry" Labs)*

1) *Dry Lab A: Atomic Spectroscopy* – explore energy levels in atoms and "fireworks" colours. Results submitted online by **Sunday, Oct. 7, 11:55 PM**, else a grade of zero is assigned.

2) *Dry Lab B: Volumetric Analysis* – test your understanding of stoichiometric concepts. Marking Module due by **Sunday, Oct. 28, 11:55 PM**, else a zero is assigned.

3) *Dry Lab C: Gaseous Equilibria* – study factors that influence chemical equilibria. Marking Module due by **Sunday, Nov. 11, 11:55 PM**, else a grade of zero is assigned.

4) *Dry Lab D: Aspects of Organic Chemistry* – investigate the structure of organic molecules. Marking Module due by **Sunday, Nov. 25, 11:55 PM**, else a zero is assigned.

(e) **Midterm Exam**: **Saturday, Oct. 13, 9:45 AM – (11:05) – 11:45 AM, locations TBA** (CourseLink)

This 80 minute exam consists of multiple choice questions and includes material up to and including Week 5 lectures, corresponding text references and laboratories. Using the principles of Universal Design to improve accessibility, everyone will be given up to time and a half to complete this exam. This means, everyone has up to 120 minutes to complete this 80 minute exam.

Midterm Conflict: If you have a legitimate conflict, you may askt to write the alternate midterm on Thurs., Oct. 11, either 5:00 PM – (6:20) – 7:00 PM or 5:30 PM – (6:50) – 7:30 PM. Apply online by Friday, Oct.5 via *www.chemistry.uoguelph.ca/alternateexam*, indicating which slot you prefer.

(f) **Final Exam: Tuesday, Dec. 4, 7:00 PM – (9:00) – 10:00 PM, locations TBA by Registrar**

This two-hour exam evaluates the entire course through multiple choice questions. Using Universal Design principles, all students will have up to three hours to complete this two-hour exam.

6. LECTURE SCHEDULE – Review the appropriate sections in the text **before** your lectures.

Topics marked with an asterisk (*) are not covered in class but will be examined.
The precise sequence and timing of the schedule below is at the discretion of your Instructor.

Week	Dates	Topics	CourseLink Resources (see Content tab)	Text Reference
Week 0	Sept. 6 to Sept. 7	Measurement Significant figures Atoms, molecules & ions	Review Video Lessons Self-Assessment Quiz	*Review: Ch. 1, 1.4 – 1.8 Ch. 2, 2.3 – 2.10
Week 1–2	Sept. 10 to Sept. 21	Atomic structure Periodic trends Lewis structures VSEPR & bonding	Periodic Tables (Week 1) Bonding & Molecular Structure Activity (Week 2) VSEPR Interactive Tutorial (Week 2) Questions of the Week (Course Resources) Atomic & Molecular Structure Practice Quiz (Week 1 or Week 2)	*Review: 7.1 – 7.4 Ch. 7, 7.5 Ch. 8, 8.1 – 8.7 Ch. 9, 9.2 – 9.9 Ch. 10, 10.1 – 10.4
Week 3–4	Sept. 24 to Oct. 5	The Mole Stoichiometry & Chemical Rxns	Stoichiometry Video Lessons (Week 3) Nomenclature Practice (Week 3) Titration and Analysis Problem (Week 4) Questions of the Week (Course Resources) Stoichiometry & Rxns Practice Quiz A & B (Weeks 3 & 4)	*Review 3.1 – 3.5 Ch. 3, 3.6 – 3.8 Ch. 4, 4.1 – 4.4, 4.7 – 4.10 *Review 5.1 – 5.4
Week 5 (no classes Oct. 8 & 9)	Oct. 10 to Oct. 12	Midterm Review	Midterm Prep Quiz (Week 5) Questions of the Week (Course Resources)	

MIDTERM EXAMINATION: Saturday, October 13, 9:45 AM – (11:05) – 11:45 AM

Week 6–9	Oct. 15 to Nov. 9	Equilibrium Acids and bases Salts and buffers Titration curves	Equilibrium Practice Quiz (Week 6) Acids and Bases Video Lessons (Week 7) Acids and Bases Practice Quiz (Week 7) Salts and Buffers Video Lessons (Week 8) Salts and Buffers Practice Quiz (Week 8) Titration Curve Animation (Week 9) Titration Curves Practice Quiz (Week 9) Questions of the Week (Course Resources)	Ch. 14, 14.1 – 14.8 Ch. 15, 15.1 – 15.8 Ch. 16, 16.1 Ch. 16, 16.3 – 16.7
Week 10–12 Note: Nov 29 = Tues. schedule and Nov. 30 = Mon. schedule	Nov. 12 to Nov. 30	Organic chemistry Intermolecular forces Final exam review	Organic nomenclature quizzes (Week 10) Structural isomer tutorial (Week 10) Stereoisomers (Week 10) Organic Chemistry Practice Quizzes (Weeks 10 - 12) The Macrogalleria (Week 12) Questions of the Week (Course Resources)	Ch. 11, 11.5 Ch. 23, 23.1 – 23.7 Ch. 24, 24.1 Organic Chemistry Notes – all questions

FINAL EXAMINATION: Tuesday, Dec. 4, 7:00 PM – (9:00) – 10:00 PM

7. COURSE RESOURCES

(a) **CHEM*1040 CourseLink website –** provides a wealth of resources (*i.e.*, lecture notes, video lessons, FAQs, practice quizzes and past midterms, *etc.*), as well as a discussion board to post course questions and weekly announcements, posted on the home page, to keep you up-to-date.

(b) **Your Instructor –** office hours will be arranged at the 1st class meeting and posted on CourseLink.

(c) **Chemistry Learning Centre (LIB 360) –** Chemistry Teaching Assistants (TAs) are available to assist you with both the lecture and lab material. Hours are posted on CourseLink.

(d) **Supported Learning Groups (SLGs)** – regularly scheduled small group study sessions. For more info, go to *www.lib.uoguelph.ca/get-assistance/studying/slgs*

Refer to the Course Outline (*CourseLink >> Content >> Course Outline*) **for further details.**